



Primary 3 to Primary 6 Science

Complete Yearly Master Matrix V7 | MOE Primary Science Syllabus 2023

PDF reference edition with repeated headings, complete row coverage and audit-friendly split views.

Source workbook: Primary_3_to_Primary_6_Science_Complete_Yearly_Master_Matrix_V7_MOE_2023.xlsx

1. Document Overview and Governance

Coverage	Value	V5 Governance Rules
Levels	P3, P4, P5, P6	V7 Governance Rules 1. The MOE Outcome Compliance Register is the acceptance gate. 2. P4 Matter explicitly covers matter, states, mass and volume. 3. P6 Photosynthesis precedes energy-conversion applications. 4. Every Atomic KP is specific, assessable and traceable. 5. Retrieval names recent, spaced and prerequisite KP references. 6. Scope boundaries prevent premature or secondary-level content. 7. Learning stages follow each topic sequence, not arbitrary term positions. 8. Grade KP lists must be derived from this V7 single source of truth.
Annual Weeks	160	
Atomic Knowledge Points	640	
P3 Weeks	40	
P4 Weeks	40	
P5 Weeks	40	
P6 Weeks	40	
Primary Basis	MOE Primary Science Teaching & Learning Syllabus 2023	
Status	V5: final syllabus completeness and scope review passed	

2. P3 40-Week Yearly Map - Curriculum and Weekly Focus

Week	Term	Term Week	Theme	Topic	Weekly Focus	Practice	Values / Attitudes	Stage
1	1	1	Science as Inquiry	Foundation	Starting Science: observing and asking questions	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
2	1	2	Diversity	Living and non-living things	Characteristics of living things: survival needs	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Introduce
3	1	3	Diversity	Living and non-living things	Characteristics of living things: life processes	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
4	1	4	Diversity	Living and non-living things	Living, non-living and once-living evidence	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
5	1	5	Diversity	Classification	Why and how scientists classify	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Master / Transfer
6	1	6	Diversity	Classification of plants	Flowering and non-flowering plants	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Master / Transfer
7	1	7	Diversity	Classification of animals	Mammals, birds and fish	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Introduce
8	1	8	Diversity	Classification of animals	Reptiles, amphibians and insects	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Master / Transfer
9	1	9	Diversity	Other living groups	Fungi and bacteria	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Master / Transfer
10	1	10	Diversity	Term 1 Mastery	Diversity integration and scientific explanation	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
11	2	1	Diversity	Materials	Materials and objects	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
12	2	2	Diversity	Materials	Strength	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Develop
13	2	3	Diversity	Materials	Flexibility	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
14	2	4	Diversity	Materials	Waterproof property	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
15	2	5	Diversity	Materials	Transparency	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
16	2	6	Diversity	Materials	Ability to float or sink	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
17	2	7	Diversity	Materials	Selecting materials for a purpose	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
18	2	8	Diversity	Materials	Multi-property design challenge	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
19	2	9	Diversity	Materials	Planning and evaluating a fair material test	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Master / Transfer
20	2	10	Diversity	Term 2 Mastery	Materials integration and transfer	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
21	3	1	Cycles	Life cycles	What makes a life cycle	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Master / Transfer
22	3	2	Cycles	Plant life cycle	Seed, young plant and adult plant	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Introduce
23	3	3	Cycles	Plant life cycle	Observing plant change over time	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Develop
24	3	4	Cycles	Plant life cycle	Comparing plant life cycles	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Master / Transfer
25	3	5	Cycles	Animal life cycles	Life cycles of chicken and frog	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Introduce
26	3	6	Cycles	Animal life cycles	Incomplete metamorphosis examples	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
27	3	7	Cycles	Animal life cycles	Complete metamorphosis: butterfly and beetle	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Apply / Consolidate
28	3	8	Cycles	Animal life cycles	Complete metamorphosis: mosquito	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Master / Transfer
29	3	9	Cycles	Life-cycle comparison	Comparing across plants and animals	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
30	3	10	Cycles	Term 3 Mastery	Life-cycle inquiry and boundaries	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
31	4	1	Interactions	Magnets	Magnetic push and pull	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
32	4	2	Interactions	Magnets	Magnetic and non-magnetic materials	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Develop
33	4	3	Interactions	Magnets	Poles and attraction	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
34	4	4	Interactions	Magnets	Repulsion and identifying poles	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
35	4	5	Interactions	Magnets	Freely suspended magnet	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
36	4	6	Interactions	Magnets	Comparing magnetic strength	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
37	4	7	Interactions	Magnets	Making a magnet by stroking	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
38	4	8	Interactions	Magnets	Making a magnet by the electrical method	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
39	4	9	Interactions	Magnets	Uses of magnets and design	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Master / Transfer
40	4	10	P3 Mastery	Cumulative transfer	Year-end mastery, inquiry and communication	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer

2. P3 40-Week Yearly Map - Atomic KP Summary, Retrieval and Scope

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
1	1. Distinguish an observation from an inference 2. Record observations using accurate words or simple drawings 3. Ask a testable question about an observable object or event 4. Communicate a claim supported by one piece of evidence	Recent: none; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains starting science: observing and asking questions accurately using relevant evidence	foundation, starting, science, observing, asking, questions, distinguish, observation, inference, record	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
2	1. Recognise that living things need water to survive 2. Recognise that living things need food to survive 3. Recognise that living things need air to survive 4. Use survival needs as evidence when deciding whether something is living	Recent: P3-W01 to W01; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains characteristics of living things: survival needs accurately using relevant evidence	living, non, things, characteristics, survival, needs, recognise, need, water, survive	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life
3	1. Recognise that living things grow 2. Recognise that living things respond to changes around them 3. Recognise that living things reproduce 4. Use more than one characteristic to justify that something is living	Recent: P3-W01 to W02; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains characteristics of living things: life processes accurately using relevant evidence	living, non, things, characteristics, life, processes, recognise, grow, respond, changes	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life
4	1. Classify clear examples as living or non-living 2. Recognise that a dead organism was once living 3. Recognise that an object made from living material is not currently living 4. Explain a classification using observable evidence rather than appearance	Recent: P3-W02 to W03; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains living, non-living and once-living evidence accurately using relevant evidence	living, non, things, once, evidence, classify, clear, examples, recognise, dead	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life
5	1. Recognise that classification groups things by similarities and differences 2. Choose a relevant observable characteristic for sorting 3. Apply one consistent classification rule to a set 4. Check whether every item fits the stated rule	Recent: P3-W03 to W04; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains why and how scientists classify accurately using relevant evidence	classification, why, how, scientists, classify, recognise, groups, things, similarities, differences	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
6	1. Recognise plants as a broad group of living things 2. Classify familiar plants as flowering or non-flowering using observable evidence 3. Compare two plants using common observable characteristics 4. Ask a testable question about an observable difference between two plants	Recent: P3-W04 to W05; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains flowering and non-flowering plants accurately using relevant evidence	classification, plants, flowering, non, recognise, broad, group, living, things, classify	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
7	1. Recognise mammals as a broad animal group 2. Recognise birds as a broad animal group 3. Recognise fish as a broad animal group 4. Classify familiar animals using common observable characteristics	Recent: P3-W05 to W06; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains mammals, birds and fish accurately using relevant evidence	classification, animals, mammals, birds, fish, recognise, broad, animal, group, classify	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
8	1. Recognise reptiles as a broad animal group 2. Recognise amphibians as a broad animal group 3. Recognise insects as a broad animal group 4. Distinguish the six P3 animal groups using relevant observable characteristics	Recent: P3-W06 to W07; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Explains reptiles, amphibians and insects accurately using relevant evidence	classification, animals, reptiles, amphibians, insects, recognise, broad, animal, group, distinguish	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
9	1. Recognise fungi as a broad group of living things 2. Recognise mould, mushroom and yeast as examples of fungi 3. Recognise bacteria as a broad group of living things 4. Distinguish recognising fungi or bacteria from classifying plants and animals	Recent: P3-W07 to W08; Spaced: P3-W01; Prerequisite: P2 inquiry readiness	Explains fungi and bacteria accurately using relevant evidence	other, living, groups, fungi, bacteria, recognise, broad, group, things, mould	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
10	1. Classify living and non-living examples using multiple characteristics 2. Classify plants and animals into appropriate broad groups 3. Use a simple key to identify an unfamiliar organism 4. Defend one classification and revise it if stronger observable evidence is provided	Recent: P3-W08 to W09; Spaced: P3-W02; Prerequisite: P2 inquiry readiness	Explains diversity integration and scientific explanation accurately using relevant evidence	term, mastery, diversity, integration, scientific, explanation, classify, living, non, examples	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
11	1. Distinguish an object from the material used to make it 2. Recognise ceramic, fabric, glass, metal, plastic, rubber and wood 3. Identify that one object may contain more than one material 4. Identify that the same material can be used for different objects	Recent: P3-W09 to W10; Spaced: P3-W03; Prerequisite: P2 inquiry readiness	Explains materials and objects accurately using relevant evidence	materials, objects, distinguish, object, material, used, make, recognise, ceramic, fabric	P3 boundary: describe observable properties; avoid particle-level explanations
12	1. Describe strength as a material's ability to withstand a load without breaking 2. Compare materials fairly for strength 3. Use results rather than appearance to identify the stronger material 4. Relate strength to a suitable everyday use	Recent: P3-W10 to W11; Spaced: P3-W04; Prerequisite: P2 inquiry readiness	Explains strength accurately using relevant evidence	materials, strength, describe, material, ability, withstand, load, without, breaking, compare	P3 boundary: describe observable properties; avoid particle-level explanations
13	1. Describe flexibility as the ability to bend without breaking 2. Compare materials for flexibility using the same method 3. Distinguish flexible from strong 4. Relate flexibility to a suitable everyday use	Recent: P3-W11 to W12; Spaced: P3-W05; Prerequisite: P2 inquiry readiness	Explains flexibility accurately using relevant evidence	materials, flexibility, describe, ability, bend, without, breaking, compare, same, method	P3 boundary: describe observable properties; avoid particle-level explanations
14	1. Describe a waterproof material as one that does not absorb water 2. Compare materials for waterproofness using equal amounts of water and equal observation time 3. Use absorption observations as evidence when deciding whether a material is waterproof 4. Relate waterproofness to suitable uses	Recent: P3-W12 to W13; Spaced: P3-W06; Prerequisite: P2 inquiry readiness	Explains waterproof property accurately using relevant evidence	materials, waterproof, property, describe, material, one, does, not, absorb, water	P3 boundary: describe observable properties; avoid particle-level explanations
15	1. Describe a transparent material as allowing light to pass through so objects can be seen clearly 2. Compare materials for transparency 3. Distinguish transparency from being colourless 4. Relate transparency to suitable uses	Recent: P3-W13 to W14; Spaced: P3-W07; Prerequisite: P2 inquiry readiness	Explains transparency accurately using relevant evidence	materials, transparency, describe, transparent, material, allowing, light, pass, through, objects	P3 boundary: describe observable properties; avoid particle-level explanations
16	1. Classify tested materials by whether they float or sink in water 2. Select and use suitable apparatus for a safe, fair float/sink comparison 3. Record floating and sinking observations accurately 4. Avoid claiming that every object made of one material behaves identically regardless of design	Recent: P3-W14 to W15; Spaced: P3-W08; Prerequisite: P2 inquiry readiness	Explains ability to float or sink accurately using relevant evidence	materials, ability, float, sink, classify, tested, whether, they, water, select	P3 boundary: describe observable properties; avoid particle-level explanations
17	1. Identify the properties required for a stated object 2. Match a material to a use using relevant properties 3. Explain why one material is more suitable than another 4. Recognise that a useful object may require a combination of materials	Recent: P3-W15 to W16; Spaced: P3-W09; Prerequisite: P2 inquiry readiness	Explains selecting materials for a purpose accurately using relevant evidence	materials, selecting, purpose, identify, properties, required, stated, object, match, material	P3 boundary: describe observable properties; avoid particle-level explanations
18	1. Compare materials using two or more properties 2. Prioritise properties for a specific purpose 3. Use test data to justify a material choice 4. Identify a trade-off when no material has every desired property	Recent: P3-W16 to W17; Spaced: P3-W10; Prerequisite: P2 inquiry readiness	Explains multi-property design challenge accurately using relevant evidence	materials, multi, property, design, challenge, compare, two, more, properties, prioritise	P3 boundary: describe observable properties; avoid particle-level explanations
19	1. State the property being tested 2. Identify what should be changed in a comparison 3. Select suitable apparatus and state what should be observed or measured 4. Identify important conditions to keep the same and suggest one improvement	Recent: P3-W17 to W18; Spaced: P3-W11; Prerequisite: P2 inquiry readiness	Explains planning and evaluating a fair material test accurately using relevant evidence	materials, planning, evaluating, fair, material, test, state, property, being, tested	P3 boundary: describe observable properties; avoid particle-level explanations
20	1. Recognise the seven named material types in unfamiliar objects 2. Compare materials across all five P3 physical properties 3. Select a material for a novel use using evidence 4. Evaluate a claim about material suitability using test data	Recent: P3-W18 to W19; Spaced: P3-W12; Prerequisite: P2 inquiry readiness	Explains materials integration and transfer accurately using relevant evidence	term, mastery, materials, integration, transfer, recognise, seven, named, material, types	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
21	1. Recognise a life cycle as repeated stages in the life of a living thing 2. Sequence stages from young to adult 3. Recognise that adults reproduce to begin a new cycle 4. Use a cycle diagram rather than a straight list when appropriate	Recent: P3-W19 to W20; Spaced: P3-W13; Prerequisite: P2 inquiry readiness	Explains what makes a life cycle accurately using relevant evidence	life, cycles, what, makes, cycle, recognise, repeated, stages, living, thing	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
22	1. Identify seed as a P3 flowering-plant life-cycle stage 2. Identify young plant as a P3 life-cycle stage 3. Identify adult plant as a P3 life-cycle stage 4. Arrange the three stages in a repeating cycle	Recent: P3-W20 to W21; Spaced: P3-W14; Prerequisite: P2 inquiry readiness	Explains seed, young plant and adult plant accurately using relevant evidence	plant, life, cycle, seed, young, adult, identify, flowering, stage, arrange	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
23	1. Record dated observations of a plant grown from a seed 2. Identify changes between consecutive observations 3. Select a suitable measuring tool and use drawings and simple measurements consistently 4. Ask a new investigable question or predict the next stage from the observed pattern	Recent: P3-W21 to W22; Spaced: P3-W15; Prerequisite: P2 inquiry readiness	Explains observing plant change over time accurately using relevant evidence	plant, life, cycle, observing, change, over, time, record, dated, observations	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
24	1. Compare stages in the life cycles of two flowering plants 2. Identify a shared seed-young plant-adult plant pattern 3. Identify observable differences without changing the core cycle 4. Revise a plant life-cycle model when new observation evidence is provided	Recent: P3-W22 to W23; Spaced: P3-W16; Prerequisite: P2 inquiry readiness	Explains comparing plant life cycles accurately using relevant evidence	plant, life, cycle, comparing, cycles, compare, stages, two, flowering, plants	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
25	1. Sequence the observable stages in a chicken life-cycle diagram 2. Sequence the observable stages in a frog life-cycle diagram, including a froglet when shown 3. Compare the young and adult forms of chicken and frog using observable evidence 4. Recognise that the number and names of stages depend on the organism and the diagram provided	Recent: P3-W23 to W24; Spaced: P3-W17; Prerequisite: P2 inquiry readiness	Explains life cycles of chicken and frog accurately using relevant evidence	animal, life, cycles, chicken, frog, sequence, observable, stages, cycle, diagram	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
26	1. Sequence egg, nymph and adult stages for a cockroach 2. Sequence egg, nymph and adult stages for a grasshopper 3. Compare a nymph with its adult using observable features 4. Recognise the three-stage pattern in cockroach and grasshopper life cycles	Recent: P3-W24 to W25; Spaced: P3-W18; Prerequisite: P2 inquiry readiness	Explains incomplete metamorphosis examples accurately using relevant evidence	animal, life, cycles, incomplete, metamorphosis, examples, sequence, egg, nymph, adult	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
27	1. Sequence egg, larva, pupa and adult stages for a butterfly 2. Sequence egg, larva, pupa and adult stages for a beetle 3. Recognise larva and pupa as distinct stages 4. Compare butterfly and beetle life cycles using the four-stage pattern	Recent: P3-W25 to W26; Spaced: P3-W19; Prerequisite: P2 inquiry readiness	Explains complete metamorphosis: butterfly and beetle accurately using relevant evidence	animal, life, cycles, complete, metamorphosis, butterfly, beetle, sequence, egg, larva	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
28	1. Sequence egg, larva, pupa and adult stages for a mosquito 2. Identify that mosquito larvae and pupae live in water 3. Compare the mosquito cycle with another four-stage animal cycle 4. Relate removal of stagnant water to interruption of the mosquito life cycle	Recent: P3-W26 to W27; Spaced: P3-W20; Prerequisite: P2 inquiry readiness	Explains complete metamorphosis: mosquito accurately using relevant evidence	animal, life, cycles, complete, metamorphosis, mosquito, sequence, egg, larva, pupa	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
29	1. Compare plant and animal life cycles for repeated stages and growth 2. Compare the number, names and observable features of stages shown in different animal cycles 3. Use stage evidence to identify an unknown life cycle 4. Predict a missing stage in a cycle diagram	Recent: P3-W27 to W28; Spaced: P3-W21; Prerequisite: P2 inquiry readiness	Explains comparing across plants and animals accurately using relevant evidence	life, cycle, comparison, comparing, across, plants, animals, compare, plant, animal	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
30	1. Interpret unfamiliar plant or animal life-cycle diagrams 2. Explain one similarity and one difference between two cycles 3. Evaluate whether a proposed sequence is supported by evidence 4. Keep P3 explanations within observable life-cycle stages without requiring P5 reproduction processes	Recent: P3-W28 to W29; Spaced: P3-W22; Prerequisite: P2 inquiry readiness	Explains life-cycle inquiry and boundaries accurately using relevant evidence	term, mastery, life, cycle, inquiry, boundaries, interpret, unfamiliar, plant, animal	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms
31	1. Recognise that a magnet can exert a push 2. Recognise that a magnet can exert a pull 3. Distinguish contact push/pull from magnetic push/pull in a setup 4. Predict motion when a magnetic interaction changes	Recent: P3-W29 to W30; Spaced: P3-W23; Prerequisite: P2 inquiry readiness	Explains magnetic push and pull accurately using relevant evidence	magnets, magnetic, push, pull, recognise, magnet, can, exert, distinguish, contact	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
32	1. Identify iron and steel as magnetic materials 2. Distinguish a magnet from a magnetic material 3. Select and use a magnet appropriately to classify tested objects 4. Ask a new investigable question from the magnetic-test results	Recent: P3-W30 to W31; Spaced: P3-W24; Prerequisite: P2 inquiry readiness	Explains magnetic and non-magnetic materials accurately using relevant evidence	magnets, magnetic, non, materials, identify, iron, steel, distinguish, magnet, material	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
33	1. Identify that a magnet has two poles 2. Recognise north and south poles as labels for magnet poles 3. Predict that unlike poles attract 4. Use attraction evidence carefully because magnets can also attract magnetic materials	Recent: P3-W31 to W32; Spaced: P3-W25; Prerequisite: P2 inquiry readiness	Explains poles and attraction accurately using relevant evidence	magnets, poles, attraction, identify, magnet, has, two, recognise, north, south	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
34	1. Predict that like poles repel 2. Recognise repulsion as evidence of magnet-to-magnet interaction 3. Use a known pole to identify an unknown pole 4. Explain attraction and repulsion using pole relationships	Recent: P3-W32 to W33; Spaced: P3-W26; Prerequisite: P2 inquiry readiness	Explains repulsion and identifying poles accurately using relevant evidence	magnets, repulsion, identifying, poles, predict, like, repel, recognise, evidence, magnet	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
35	1. Recognise that a freely suspended bar magnet comes to rest in a north-south direction 2. Select a suitable suspension setup that allows the bar magnet to turn freely 3. Distinguish direction finding from attraction to nearby materials 4. Revise a direction model after interpreting repeated observations	Recent: P3-W33 to W34; Spaced: P3-W27; Prerequisite: P2 inquiry readiness	Explains freely suspended magnet accurately using relevant evidence	magnets, freely, suspended, magnet, recognise, bar, comes, rest, north, south	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
36	1. Compare magnet strength using a defined outcome such as number of identical clips lifted 2. Select suitable apparatus and identify the changed magnet in a fair comparison 3. Keep clip type and testing method the same 4. Use repeated table or bar-chart data to defend which magnet is stronger	Recent: P3-W34 to W35; Spaced: P3-W28; Prerequisite: P2 inquiry readiness	Explains comparing magnetic strength accurately using relevant evidence	magnets, comparing, magnetic, strength, compare, magnet, defined, outcome, such, number	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
37	1. Recognise stroking as one method of making a magnet 2. Follow a repeated one-direction stroke model 3. Use a magnetic test before and after stroking 4. Evaluate evidence that the object became magnetised	Recent: P3-W35 to W36; Spaced: P3-W29; Prerequisite: P2 inquiry readiness	Explains making a magnet by stroking accurately using relevant evidence	magnets, making, magnet, stroking, recognise, one, method, follow, repeated, direction	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
38	1. Recognise the electrical method as another way to make a magnet 2. Identify the coil, iron or steel object and electrical source in a simple setup 3. Use a before-and-after magnetic test 4. Follow safety instructions and avoid constructing circuits beyond the provided setup	Recent: P3-W36 to W37; Spaced: P3-W30; Prerequisite: P2 inquiry readiness	Explains making a magnet by the electrical method accurately using relevant evidence	magnets, making, magnet, electrical, method, recognise, another, way, make, identify	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
39	1. Recognise uses of magnets in familiar everyday objects 2. Explain a use by linking it to attraction or repulsion 3. Generate and compare more than one workable magnetic design 4. Ask an investigable question that could improve the chosen design	Recent: P3-W37 to W38; Spaced: P3-W31; Prerequisite: P2 inquiry readiness	Explains uses of magnets and design accurately using relevant evidence	magnets, uses, design, recognise, familiar, everyday, objects, explain, use, linking	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required
40	1. Integrate classification, material properties, life cycles and magnets in one unfamiliar context 2. Interpret diagrams, tables, charts and observation records accurately 3. Defend the stronger of two competing claims using evidence 4. Revise an explanation or model and communicate one responsible action	Recent: P3-W38 to W39; Spaced: P3-W32; Prerequisite: P2 inquiry readiness	Explains year-end mastery, inquiry and communication accurately using relevant evidence	cumulative, transfer, year, end, mastery, inquiry, communication, integrate, classification, material	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms

3. P3 Atomic KP Register - Atomic KP Content View

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P3-W01-KP1	1	Science as Inquiry	Foundation	Starting Science: observing and asking questions	1	Distinguish an observation from an inference	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W01-KP2	1	Science as Inquiry	Foundation	Starting Science: observing and asking questions	2	Record observations using accurate words or simple drawings	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W01-KP3	1	Science as Inquiry	Foundation	Starting Science: observing and asking questions	3	Ask a testable question about an observable object or event	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W01-KP4	1	Science as Inquiry	Foundation	Starting Science: observing and asking questions	4	Communicate a claim supported by one piece of evidence	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W02-KP1	2	Diversity	Living and non-living things	Characteristics of living things: survival needs	1	Recognise that living things need water to survive	Introduce	MOE Explicit Core	Know / Understand
P3-W02-KP2	2	Diversity	Living and non-living things	Characteristics of living things: survival needs	2	Recognise that living things need food to survive	Introduce	MOE Explicit Core	Explain / Interpret
P3-W02-KP3	2	Diversity	Living and non-living things	Characteristics of living things: survival needs	3	Recognise that living things need air to survive	Introduce	MOE Practice / Application	Apply / Analyse
P3-W02-KP4	2	Diversity	Living and non-living things	Characteristics of living things: survival needs	4	Use survival needs as evidence when deciding whether something is living	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P3-W03-KP1	3	Diversity	Living and non-living things	Characteristics of living things: life processes	1	Recognise that living things grow	Develop	MOE Explicit Core	Know / Understand
P3-W03-KP2	3	Diversity	Living and non-living things	Characteristics of living things: life processes	2	Recognise that living things respond to changes around them	Develop	MOE Explicit Core	Explain / Interpret
P3-W03-KP3	3	Diversity	Living and non-living things	Characteristics of living things: life processes	3	Recognise that living things reproduce	Develop	MOE Practice / Application	Apply / Analyse
P3-W03-KP4	3	Diversity	Living and non-living things	Characteristics of living things: life processes	4	Use more than one characteristic to justify that something is living	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W04-KP1	4	Diversity	Living and non-living things	Living, non-living and once-living evidence	1	Classify clear examples as living or non-living	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W04-KP2	4	Diversity	Living and non-living things	Living, non-living and once-living evidence	2	Recognise that a dead organism was once living	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W04-KP3	4	Diversity	Living and non-living things	Living, non-living and once-living evidence	3	Recognise that an object made from living material is not currently living	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W04-KP4	4	Diversity	Living and non-living things	Living, non-living and once-living evidence	4	Explain a classification using observable evidence rather than appearance	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W05-KP1	5	Diversity	Classification	Why and how scientists classify	1	Recognise that classification groups things by similarities and differences	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W05-KP2	5	Diversity	Classification	Why and how scientists classify	2	Choose a relevant observable characteristic for sorting	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W05-KP3	5	Diversity	Classification	Why and how scientists classify	3	Apply one consistent classification rule to a set	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W05-KP4	5	Diversity	Classification	Why and how scientists classify	4	Check whether every item fits the stated rule	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W06-KP1	6	Diversity	Classification of plants	Flowering and non-flowering plants	1	Recognise plants as a broad group of living things	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W06-KP2	6	Diversity	Classification of plants	Flowering and non-flowering plants	2	Classify familiar plants as flowering or non-flowering using observable evidence	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W06-KP3	6	Diversity	Classification of plants	Flowering and non-flowering plants	3	Compare two plants using common observable characteristics	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W06-KP4	6	Diversity	Classification of plants	Flowering and non-flowering plants	4	Ask a testable question about an observable difference between two plants	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W07-KP1	7	Diversity	Classification of animals	Mammals, birds and fish	1	Recognise mammals as a broad animal group	Introduce	MOE Explicit Core	Know / Understand
P3-W07-KP2	7	Diversity	Classification of animals	Mammals, birds and fish	2	Recognise birds as a broad animal group	Introduce	MOE Explicit Core	Explain / Interpret
P3-W07-KP3	7	Diversity	Classification of animals	Mammals, birds and fish	3	Recognise fish as a broad animal group	Introduce	MOE Practice / Application	Apply / Analyse
P3-W07-KP4	7	Diversity	Classification of animals	Mammals, birds and fish	4	Classify familiar animals using common observable characteristics	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P3-W08-KP1	8	Diversity	Classification of animals	Reptiles, amphibians and insects	1	Recognise reptiles as a broad animal group	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W08-KP2	8	Diversity	Classification of animals	Reptiles, amphibians and insects	2	Recognise amphibians as a broad animal group	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W08-KP3	8	Diversity	Classification of animals	Reptiles, amphibians and insects	3	Recognise insects as a broad animal group	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W08-KP4	8	Diversity	Classification of animals	Reptiles, amphibians and insects	4	Distinguish the six P3 animal groups using relevant observable characteristics	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W09-KP1	9	Diversity	Other living groups	Fungi and bacteria	1	Recognise fungi as a broad group of living things	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W09-KP2	9	Diversity	Other living groups	Fungi and bacteria	2	Recognise mould, mushroom and yeast as examples of fungi	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W09-KP3	9	Diversity	Other living groups	Fungi and bacteria	3	Recognise bacteria as a broad group of living things	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W09-KP4	9	Diversity	Other living groups	Fungi and bacteria	4	Distinguish recognising fungi or bacteria from classifying plants and animals	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W10-KP1	10	Diversity	Term 1 Mastery	Diversity integration and scientific explanation	1	Classify living and non-living examples using multiple characteristics	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W10-KP2	10	Diversity	Term 1 Mastery	Diversity integration and scientific explanation	2	Classify plants and animals into appropriate broad groups	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W10-KP3	10	Diversity	Term 1 Mastery	Diversity integration and scientific explanation	3	Use a simple key to identify an unfamiliar organism	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W10-KP4	10	Diversity	Term 1 Mastery	Diversity integration and scientific explanation	4	Defend one classification and revise it if stronger observable evidence is provided	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W11-KP1	11	Diversity	Materials	Materials and objects	1	Distinguish an object from the material used to make it	Introduce	MOE Explicit Core	Know / Understand
P3-W11-KP2	11	Diversity	Materials	Materials and objects	2	Recognise ceramic, fabric, glass, metal, plastic, rubber and wood	Introduce	MOE Explicit Core	Explain / Interpret
P3-W11-KP3	11	Diversity	Materials	Materials and objects	3	Identify that one object may contain more than one material	Introduce	MOE Practice / Application	Apply / Analyse
P3-W11-KP4	11	Diversity	Materials	Materials and objects	4	Identify that the same material can be used for different objects	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P3-W12-KP1	12	Diversity	Materials	Strength	1	Describe strength as a material's ability to withstand a load without breaking	Develop	MOE Explicit Core	Know / Understand
P3-W12-KP2	12	Diversity	Materials	Strength	2	Compare materials fairly for strength	Develop	MOE Explicit Core	Explain / Interpret
P3-W12-KP3	12	Diversity	Materials	Strength	3	Use results rather than appearance to identify the stronger material	Develop	MOE Practice / Application	Apply / Analyse
P3-W12-KP4	12	Diversity	Materials	Strength	4	Relate strength to a suitable everyday use	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W13-KP1	13	Diversity	Materials	Flexibility	1	Describe flexibility as the ability to bend without breaking	Develop	MOE Explicit Core	Know / Understand
P3-W13-KP2	13	Diversity	Materials	Flexibility	2	Compare materials for flexibility using the same method	Develop	MOE Explicit Core	Explain / Interpret
P3-W13-KP3	13	Diversity	Materials	Flexibility	3	Distinguish flexible from strong	Develop	MOE Practice / Application	Apply / Analyse
P3-W13-KP4	13	Diversity	Materials	Flexibility	4	Relate flexibility to a suitable everyday use	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W14-KP1	14	Diversity	Materials	Waterproof property	1	Describe a waterproof material as one that does not absorb water	Develop	MOE Explicit Core	Know / Understand
P3-W14-KP2	14	Diversity	Materials	Waterproof property	2	Compare materials for waterproofness using equal amounts of water and equal observation time	Develop	MOE Explicit Core	Explain / Interpret
P3-W14-KP3	14	Diversity	Materials	Waterproof property	3	Use absorption observations as evidence when deciding whether a material is waterproof	Develop	MOE Practice / Application	Apply / Analyse
P3-W14-KP4	14	Diversity	Materials	Waterproof property	4	Relate waterproofness to suitable uses	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W15-KP1	15	Diversity	Materials	Transparency	1	Describe a transparent material as allowing light to pass through so objects can be seen clearly	Develop	MOE Explicit Core	Know / Understand
P3-W15-KP2	15	Diversity	Materials	Transparency	2	Compare materials for transparency	Develop	MOE Explicit Core	Explain / Interpret
P3-W15-KP3	15	Diversity	Materials	Transparency	3	Distinguish transparency from being colourless	Develop	MOE Practice / Application	Apply / Analyse
P3-W15-KP4	15	Diversity	Materials	Transparency	4	Relate transparency to suitable uses	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W16-KP1	16	Diversity	Materials	Ability to float or sink	1	Classify tested materials by whether they float or sink in water	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W16-KP2	16	Diversity	Materials	Ability to float or sink	2	Select and use suitable apparatus for a safe, fair float/sink comparison	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W16-KP3	16	Diversity	Materials	Ability to float or sink	3	Record floating and sinking observations accurately	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P3-W16-KP4	16	Diversity	Materials	Ability to float or sink	4	Avoid claiming that every object made of one material behaves identically regardless of design	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W17-KP1	17	Diversity	Materials	Selecting materials for a purpose	1	Identify the properties required for a stated object	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W17-KP2	17	Diversity	Materials	Selecting materials for a purpose	2	Match a material to a use using relevant properties	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W17-KP3	17	Diversity	Materials	Selecting materials for a purpose	3	Explain why one material is more suitable than another	Apply / Consolidate	MOE Practice / Application	Apply / Analyse

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P3-W17-KP4	17	Diversity	Materials	Selecting materials for a purpose	4	Recognise that a useful object may require a combination of materials	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W18-KP1	18	Diversity	Materials	Multi-property design challenge	1	Compare materials using two or more properties	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W18-KP2	18	Diversity	Materials	Multi-property design challenge	2	Prioritise properties for a specific purpose	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W18-KP3	18	Diversity	Materials	Multi-property design challenge	3	Use test data to justify a material choice	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P3-W18-KP4	18	Diversity	Materials	Multi-property design challenge	4	Identify a trade-off when no material has every desired property	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W19-KP1	19	Diversity	Materials	Planning and evaluating a fair material test	1	State the property being tested	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W19-KP2	19	Diversity	Materials	Planning and evaluating a fair material test	2	Identify what should be changed in a comparison	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W19-KP3	19	Diversity	Materials	Planning and evaluating a fair material test	3	Select suitable apparatus and state what should be observed or measured	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W19-KP4	19	Diversity	Materials	Planning and evaluating a fair material test	4	Identify important conditions to keep the same and suggest one improvement	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W20-KP1	20	Diversity	Term 2 Mastery	Materials integration and transfer	1	Recognise the seven named material types in unfamiliar objects	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W20-KP2	20	Diversity	Term 2 Mastery	Materials integration and transfer	2	Compare materials across all five P3 physical properties	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W20-KP3	20	Diversity	Term 2 Mastery	Materials integration and transfer	3	Select a material for a novel use using evidence	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W20-KP4	20	Diversity	Term 2 Mastery	Materials integration and transfer	4	Evaluate a claim about material suitability using test data	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W21-KP1	21	Cycles	Life cycles	What makes a life cycle	1	Recognise a life cycle as repeated stages in the life of a living thing	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W21-KP2	21	Cycles	Life cycles	What makes a life cycle	2	Sequence stages from young to adult	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W21-KP3	21	Cycles	Life cycles	What makes a life cycle	3	Recognise that adults reproduce to begin a new cycle	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W21-KP4	21	Cycles	Life cycles	What makes a life cycle	4	Use a cycle diagram rather than a straight list when appropriate	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W22-KP1	22	Cycles	Plant life cycle	Seed, young plant and adult plant	1	Identify seed as a P3 flowering-plant life-cycle stage	Introduce	MOE Explicit Core	Know / Understand
P3-W22-KP2	22	Cycles	Plant life cycle	Seed, young plant and adult plant	2	Identify young plant as a P3 life-cycle stage	Introduce	MOE Explicit Core	Explain / Interpret
P3-W22-KP3	22	Cycles	Plant life cycle	Seed, young plant and adult plant	3	Identify adult plant as a P3 life-cycle stage	Introduce	MOE Practice / Application	Apply / Analyse
P3-W22-KP4	22	Cycles	Plant life cycle	Seed, young plant and adult plant	4	Arrange the three stages in a repeating cycle	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P3-W23-KP1	23	Cycles	Plant life cycle	Observing plant change over time	1	Record dated observations of a plant grown from a seed	Develop	MOE Explicit Core	Know / Understand
P3-W23-KP2	23	Cycles	Plant life cycle	Observing plant change over time	2	Identify changes between consecutive observations	Develop	MOE Explicit Core	Explain / Interpret
P3-W23-KP3	23	Cycles	Plant life cycle	Observing plant change over time	3	Select a suitable measuring tool and use drawings and simple measurements consistently	Develop	MOE Practice / Application	Apply / Analyse
P3-W23-KP4	23	Cycles	Plant life cycle	Observing plant change over time	4	Ask a new investigable question or predict the next stage from the observed pattern	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W24-KP1	24	Cycles	Plant life cycle	Comparing plant life cycles	1	Compare stages in the life cycles of two flowering plants	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W24-KP2	24	Cycles	Plant life cycle	Comparing plant life cycles	2	Identify a shared seed-young plant-adult plant pattern	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W24-KP3	24	Cycles	Plant life cycle	Comparing plant life cycles	3	Identify observable differences without changing the core cycle	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W24-KP4	24	Cycles	Plant life cycle	Comparing plant life cycles	4	Revise a plant life-cycle model when new observation evidence is provided	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W25-KP1	25	Cycles	Animal life cycles	Life cycles of chicken and frog	1	Sequence the observable stages in a chicken life-cycle diagram	Introduce	MOE Explicit Core	Know / Understand
P3-W25-KP2	25	Cycles	Animal life cycles	Life cycles of chicken and frog	2	Sequence the observable stages in a frog life-cycle diagram, including a froglet when shown	Introduce	MOE Explicit Core	Explain / Interpret
P3-W25-KP3	25	Cycles	Animal life cycles	Life cycles of chicken and frog	3	Compare the young and adult forms of chicken and frog using observable evidence	Introduce	MOE Practice / Application	Apply / Analyse
P3-W25-KP4	25	Cycles	Animal life cycles	Life cycles of chicken and frog	4	Recognise that the number and names of stages depend on the organism and the diagram provided	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P3-W26-KP1	26	Cycles	Animal life cycles	Incomplete metamorphosis examples	1	Sequence egg, nymph and adult stages for a cockroach	Develop	MOE Explicit Core	Know / Understand
P3-W26-KP2	26	Cycles	Animal life cycles	Incomplete metamorphosis examples	2	Sequence egg, nymph and adult stages for a grasshopper	Develop	MOE Explicit Core	Explain / Interpret
P3-W26-KP3	26	Cycles	Animal life cycles	Incomplete metamorphosis examples	3	Compare a nymph with its adult using observable features	Develop	MOE Practice / Application	Apply / Analyse
P3-W26-KP4	26	Cycles	Animal life cycles	Incomplete metamorphosis examples	4	Recognise the three-stage pattern in cockroach and grasshopper life cycles	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W27-KP1	27	Cycles	Animal life cycles	Complete metamorphosis: butterfly and beetle	1	Sequence egg, larva, pupa and adult stages for a butterfly	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W27-KP2	27	Cycles	Animal life cycles	Complete metamorphosis: butterfly and beetle	2	Sequence egg, larva, pupa and adult stages for a beetle	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W27-KP3	27	Cycles	Animal life cycles	Complete metamorphosis: butterfly and beetle	3	Recognise larva and pupa as distinct stages	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P3-W27-KP4	27	Cycles	Animal life cycles	Complete metamorphosis: butterfly and beetle	4	Compare butterfly and beetle life cycles using the four-stage pattern	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W28-KP1	28	Cycles	Animal life cycles	Complete metamorphosis: mosquito	1	Sequence egg, larva, pupa and adult stages for a mosquito	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W28-KP2	28	Cycles	Animal life cycles	Complete metamorphosis: mosquito	2	Identify that mosquito larvae and pupae live in water	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W28-KP3	28	Cycles	Animal life cycles	Complete metamorphosis: mosquito	3	Compare the mosquito cycle with another four-stage animal cycle	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W28-KP4	28	Cycles	Animal life cycles	Complete metamorphosis: mosquito	4	Relate removal of stagnant water to interruption of the mosquito life cycle	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W29-KP1	29	Cycles	Life-cycle comparison	Comparing across plants and animals	1	Compare plant and animal life cycles for repeated stages and growth	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W29-KP2	29	Cycles	Life-cycle comparison	Comparing across plants and animals	2	Compare the number, names and observable features of stages shown in different animal cycles	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W29-KP3	29	Cycles	Life-cycle comparison	Comparing across plants and animals	3	Use stage evidence to identify an unknown life cycle	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W29-KP4	29	Cycles	Life-cycle comparison	Comparing across plants and animals	4	Predict a missing stage in a cycle diagram	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W30-KP1	30	Cycles	Term 3 Mastery	Life-cycle inquiry and boundaries	1	Interpret unfamiliar plant or animal life-cycle diagrams	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W30-KP2	30	Cycles	Term 3 Mastery	Life-cycle inquiry and boundaries	2	Explain one similarity and one difference between two cycles	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W30-KP3	30	Cycles	Term 3 Mastery	Life-cycle inquiry and boundaries	3	Evaluate whether a proposed sequence is supported by evidence	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W30-KP4	30	Cycles	Term 3 Mastery	Life-cycle inquiry and boundaries	4	Keep P3 explanations within observable life-cycle stages without requiring P5 reproduction processes	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W31-KP1	31	Interactions	Magnets	Magnetic push and pull	1	Recognise that a magnet can exert a push	Introduce	MOE Explicit Core	Know / Understand
P3-W31-KP2	31	Interactions	Magnets	Magnetic push and pull	2	Recognise that a magnet can exert a pull	Introduce	MOE Explicit Core	Explain / Interpret
P3-W31-KP3	31	Interactions	Magnets	Magnetic push and pull	3	Distinguish contact push/pull from magnetic push/pull in a setup	Introduce	MOE Practice / Application	Apply / Analyse
P3-W31-KP4	31	Interactions	Magnets	Magnetic push and pull	4	Predict motion when a magnetic interaction changes	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P3-W32-KP1	32	Interactions	Magnets	Magnetic and non-magnetic materials	1	Identify iron and steel as magnetic materials	Develop	MOE Explicit Core	Know / Understand
P3-W32-KP2	32	Interactions	Magnets	Magnetic and non-magnetic materials	2	Distinguish a magnet from a magnetic material	Develop	MOE Explicit Core	Explain / Interpret
P3-W32-KP3	32	Interactions	Magnets	Magnetic and non-magnetic materials	3	Select and use a magnet appropriately to classify tested objects	Develop	MOE Practice / Application	Apply / Analyse
P3-W32-KP4	32	Interactions	Magnets	Magnetic and non-magnetic materials	4	Ask a new investigable question from the magnetic-test results	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W33-KP1	33	Interactions	Magnets	Poles and attraction	1	Identify that a magnet has two poles	Develop	MOE Explicit Core	Know / Understand
P3-W33-KP2	33	Interactions	Magnets	Poles and attraction	2	Recognise north and south poles as labels for magnet poles	Develop	MOE Explicit Core	Explain / Interpret
P3-W33-KP3	33	Interactions	Magnets	Poles and attraction	3	Predict that unlike poles attract	Develop	MOE Practice / Application	Apply / Analyse
P3-W33-KP4	33	Interactions	Magnets	Poles and attraction	4	Use attraction evidence carefully because magnets can also attract magnetic materials	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W34-KP1	34	Interactions	Magnets	Repulsion and identifying poles	1	Predict that like poles repel	Develop	MOE Explicit Core	Know / Understand
P3-W34-KP2	34	Interactions	Magnets	Repulsion and identifying poles	2	Recognise repulsion as evidence of magnet-to-magnet interaction	Develop	MOE Explicit Core	Explain / Interpret
P3-W34-KP3	34	Interactions	Magnets	Repulsion and identifying poles	3	Use a known pole to identify an unknown pole	Develop	MOE Practice / Application	Apply / Analyse
P3-W34-KP4	34	Interactions	Magnets	Repulsion and identifying poles	4	Explain attraction and repulsion using pole relationships	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W35-KP1	35	Interactions	Magnets	Freely suspended magnet	1	Recognise that a freely suspended bar magnet comes to rest in a north-south direction	Develop	MOE Explicit Core	Know / Understand

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P3-W35-KP2	35	Interactions	Magnets	Freely suspended magnet	2	Select a suitable suspension setup that allows the bar magnet to turn freely	Develop	MOE Explicit Core	Explain / Interpret
P3-W35-KP3	35	Interactions	Magnets	Freely suspended magnet	3	Distinguish direction finding from attraction to nearby materials	Develop	MOE Practice / Application	Apply / Analyse
P3-W35-KP4	35	Interactions	Magnets	Freely suspended magnet	4	Revise a direction model after interpreting repeated observations	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P3-W36-KP1	36	Interactions	Magnets	Comparing magnetic strength	1	Compare magnet strength using a defined outcome such as number of identical clips lifted	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W36-KP2	36	Interactions	Magnets	Comparing magnetic strength	2	Select suitable apparatus and identify the changed magnet in a fair comparison	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W36-KP3	36	Interactions	Magnets	Comparing magnetic strength	3	Keep clip type and testing method the same	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P3-W36-KP4	36	Interactions	Magnets	Comparing magnetic strength	4	Use repeated table or bar-chart data to defend which magnet is stronger	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W37-KP1	37	Interactions	Magnets	Making a magnet by stroking	1	Recognise stroking as one method of making a magnet	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W37-KP2	37	Interactions	Magnets	Making a magnet by stroking	2	Follow a repeated one-direction stroke model	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W37-KP3	37	Interactions	Magnets	Making a magnet by stroking	3	Use a magnetic test before and after stroking	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P3-W37-KP4	37	Interactions	Magnets	Making a magnet by stroking	4	Evaluate evidence that the object became magnetised	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W38-KP1	38	Interactions	Magnets	Making a magnet by the electrical method	1	Recognise the electrical method as another way to make a magnet	Apply / Consolidate	MOE Explicit Core	Know / Understand
P3-W38-KP2	38	Interactions	Magnets	Making a magnet by the electrical method	2	Identify the coil, iron or steel object and electrical source in a simple setup	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P3-W38-KP3	38	Interactions	Magnets	Making a magnet by the electrical method	3	Use a before-and-after magnetic test	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P3-W38-KP4	38	Interactions	Magnets	Making a magnet by the electrical method	4	Follow safety instructions and avoid constructing circuits beyond the provided setup	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P3-W39-KP1	39	Interactions	Magnets	Uses of magnets and design	1	Recognise uses of magnets in familiar everyday objects	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W39-KP2	39	Interactions	Magnets	Uses of magnets and design	2	Explain a use by linking it to attraction or repulsion	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W39-KP3	39	Interactions	Magnets	Uses of magnets and design	3	Generate and compare more than one workable magnetic design	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W39-KP4	39	Interactions	Magnets	Uses of magnets and design	4	Ask an investigable question that could improve the chosen design	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P3-W40-KP1	40	P3 Mastery	Cumulative transfer	Year-end mastery, inquiry and communication	1	Integrate classification, material properties, life cycles and magnets in one unfamiliar context	Master / Transfer	MOE Explicit Core	Know / Understand
P3-W40-KP2	40	P3 Mastery	Cumulative transfer	Year-end mastery, inquiry and communication	2	Interpret diagrams, tables, charts and observation records accurately	Master / Transfer	MOE Explicit Core	Explain / Interpret
P3-W40-KP3	40	P3 Mastery	Cumulative transfer	Year-end mastery, inquiry and communication	3	Defend the stronger of two competing claims using evidence	Master / Transfer	MOE Practice / Application	Apply / Analyse
P3-W40-KP4	40	P3 Mastery	Cumulative transfer	Year-end mastery, inquiry and communication	4	Revise an explanation or model and communicate one responsible action	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve

3. P3 Atomic KP Register - Assessment, Retrieval and Scope View

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P3-W01-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: none; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately distinguish an observation from an inference, using relevant observation, data or model evidence	foundation, starting, science, observing, asking, questions, distinguish, observation, inference	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W01-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: none; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately record observations using accurate words or simple drawings, using relevant observation, data or model evidence	foundation, starting, science, observing, asking, questions, record, observations, accurate, words	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W01-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: none; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately ask a testable question about an observable object or event, using relevant observation, data or model evidence	foundation, starting, science, observing, asking, questions, ask, testable, question, about	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W01-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: none; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately communicate a claim supported by one piece of evidence, using relevant observation, data or model evidence	foundation, starting, science, observing, asking, questions, communicate, claim, supported, one	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W02-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W01 to W01; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that living things need water to survive, using relevant observation, data or model evidence	living, non, things, characteristics, survival, needs, recognise, need, water, survive	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W02-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W01 to W01; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that living things need food to survive, using relevant observation, data or model evidence	living, non, things, characteristics, survival, needs, recognise, need, food, survive	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W02-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W01 to W01; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that living things need air to survive, using relevant observation, data or model evidence	living, non, things, characteristics, survival, needs, recognise, need, air, survive	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W02-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W01 to W01; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately use survival needs as evidence when deciding whether something is living, using relevant observation, data or model evidence	living, non, things, characteristics, survival, needs, use, evidence, when, deciding	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W03-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W01 to W02; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that living things grow, using relevant observation, data or model evidence	living, non, things, characteristics, life, processes, recognise, grow	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W03-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W01 to W02; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that living things respond to changes around them, using relevant observation, data or model evidence	living, non, things, characteristics, life, processes, recognise, respond, changes, around	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W03-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W01 to W02; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that living things reproduce, using relevant observation, data or model evidence	living, non, things, characteristics, life, processes, recognise, reproduce	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W03-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W01 to W02; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately use more than one characteristic to justify that something is living, using relevant observation, data or model evidence	living, non, things, characteristics, life, processes, use, more, than, one	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W04-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W02 to W03; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately classify clear examples as living or non-living, using relevant observation, data or model evidence	living, non, things, once, evidence, classify, clear, examples	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W04-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W02 to W03; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that a dead organism was once living, using relevant observation, data or model evidence	living, non, things, once, evidence, recognise, dead, organism, was	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W04-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W02 to W03; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that an object made from living material is not currently living, using relevant observation, data or model evidence	living, non, things, once, evidence, recognise, object, made, material, not	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W04-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W02 to W03; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately explain a classification using observable evidence rather than appearance, using relevant observation, data or model evidence	living, non, things, once, evidence, explain, classification, observable, rather, than	P3 boundary: classify with observable evidence; avoid treating movement alone as proof of life	Verified against V7 compliance register
P3-W05-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W03 to W04; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise that classification groups things by similarities and differences, using relevant observation, data or model evidence	classification, why, how, scientists, classify, recognise, groups, things, similarities, differences	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W05-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W03 to W04; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately choose a relevant observable characteristic for sorting, using relevant observation, data or model evidence	classification, why, how, scientists, classify, choose, relevant, observable, characteristic, sorting	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W05-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W03 to W04; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately apply one consistent classification rule to a set, using relevant observation, data or model evidence	classification, why, how, scientists, classify, apply, one, consistent, rule, set	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W05-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W03 to W04; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately check whether every item fits the stated rule, using relevant observation, data or model evidence	classification, why, how, scientists, classify, check, whether, every, item, fits	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W06-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P3-W04 to W05; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise plants as a broad group of living things, using relevant observation, data or model evidence	classification, plants, flowering, non, recognise, broad, group, living, things	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W06-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W04 to W05; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately classify familiar plants as flowering or non-flowering using observable evidence, using relevant observation, data or model evidence	classification, plants, flowering, non, classify, familiar, observable, evidence	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W06-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W04 to W05; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately compare two plants using common observable characteristics, using relevant observation, data or model evidence	classification, plants, flowering, non, compare, two, common, observable, characteristics	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W06-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W04 to W05; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately ask a testable question about an observable difference between two plants, using relevant observation, data or model evidence	classification, plants, flowering, non, ask, testable, question, about, observable, difference	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W07-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P3-W05 to W06; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise mammals as a broad animal group, using relevant observation, data or model evidence	classification, animals, mammals, birds, fish, recognise, broad, animal, group	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W07-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W05 to W06; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise birds as a broad animal group, using relevant observation, data or model evidence	classification, animals, mammals, birds, fish, recognise, broad, animal, group	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W07-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W05 to W06; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise fish as a broad animal group, using relevant observation, data or model evidence	classification, animals, mammals, birds, fish, recognise, broad, animal, group	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W07-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W05 to W06; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately classify familiar animals using common observable characteristics, using relevant observation, data or model evidence	classification, animals, mammals, birds, fish, classify, familiar, common, observable, characteristics	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W08-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P3-W06 to W07; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise reptiles as a broad animal group, using relevant observation, data or model evidence	classification, animals, reptiles, amphibians, insects, recognise, broad, animal, group	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W08-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W06 to W07; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise amphibians as a broad animal group, using relevant observation, data or model evidence	classification, animals, reptiles, amphibians, insects, recognise, broad, animal, group	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register

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P3-W08-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W06 to W07; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately recognise insects as a broad animal group, using relevant observation, data or model evidence	classification, animals, reptiles, amphibians, insects, recognise, broad, animal, group	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W08-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W06 to W07; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Accurately distinguish the six P3 animal groups using relevant observable characteristics, using relevant observation, data or model evidence	classification, animals, reptiles, amphibians, insects, distinguish, six, animal, groups, relevant	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W09-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W07 to W08; Spaced: P3-W01; Prerequisite: P2 inquiry readiness	Accurately recognise fungi as a broad group of living things, using relevant observation, data or model evidence	other, living, groups, fungi, bacteria, recognise, broad, group, things	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W09-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W07 to W08; Spaced: P3-W01; Prerequisite: P2 inquiry readiness	Accurately recognise mould, mushroom and yeast as examples of fungi, using relevant observation, data or model evidence	other, living, groups, fungi, bacteria, recognise, mould, mushroom, yeast, examples	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W09-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W07 to W08; Spaced: P3-W01; Prerequisite: P2 inquiry readiness	Accurately recognise bacteria as a broad group of living things, using relevant observation, data or model evidence	other, living, groups, fungi, bacteria, recognise, broad, group, things	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W09-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W07 to W08; Spaced: P3-W01; Prerequisite: P2 inquiry readiness	Accurately distinguish recognising fungi or bacteria from classifying plants and animals, using relevant observation, data or model evidence	other, living, groups, fungi, bacteria, distinguish, recognising, classifying, plants, animals	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W10-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W08 to W09; Spaced: P3-W02; Prerequisite: P2 inquiry readiness	Accurately classify living and non-living examples using multiple characteristics, using relevant observation, data or model evidence	term, mastery, diversity, integration, scientific, explanation, classify, living, non, examples	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W10-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W08 to W09; Spaced: P3-W02; Prerequisite: P2 inquiry readiness	Accurately classify plants and animals into appropriate broad groups, using relevant observation, data or model evidence	term, mastery, diversity, integration, scientific, explanation, classify, plants, animals, appropriate	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W10-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W08 to W09; Spaced: P3-W02; Prerequisite: P2 inquiry readiness	Accurately use a simple key to identify an unfamiliar organism, using relevant observation, data or model evidence	term, mastery, diversity, integration, scientific, explanation, use, simple, key, identify	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W10-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W08 to W09; Spaced: P3-W02; Prerequisite: P2 inquiry readiness	Accurately defend one classification and revise it if stronger observable evidence is provided, using relevant observation, data or model evidence	term, mastery, diversity, integration, scientific, explanation, defend, one, classification, revise	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W11-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W09 to W10; Spaced: P3-W03; Prerequisite: P2 inquiry readiness	Accurately distinguish an object from the material used to make it, using relevant observation, data or model evidence	materials, objects, distinguish, object, material, used, make	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W11-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W09 to W10; Spaced: P3-W03; Prerequisite: P2 inquiry readiness	Accurately recognise ceramic, fabric, glass, metal, plastic, rubber and wood, using relevant observation, data or model evidence	materials, objects, recognise, ceramic, fabric, glass, metal, plastic, rubber, wood	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W11-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W09 to W10; Spaced: P3-W03; Prerequisite: P2 inquiry readiness	Accurately identify that one object may contain more than one material, using relevant observation, data or model evidence	materials, objects, identify, one, object, may, contain, more, than, material	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W11-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W09 to W10; Spaced: P3-W03; Prerequisite: P2 inquiry readiness	Accurately identify that the same material can be used for different objects, using relevant observation, data or model evidence	materials, objects, identify, same, material, can, used, different	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W12-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P3-W10 to W11; Spaced: P3-W04; Prerequisite: P2 inquiry readiness	Accurately describe strength as a material's ability to withstand a load without breaking, using relevant observation, data or model evidence	materials, strength, describe, material, ability, withstand, load, without, breaking	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W12-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W10 to W11; Spaced: P3-W04; Prerequisite: P2 inquiry readiness	Accurately compare materials fairly for strength, using relevant observation, data or model evidence	materials, strength, compare, fairly	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W12-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W10 to W11; Spaced: P3-W04; Prerequisite: P2 inquiry readiness	Accurately use results rather than appearance to identify the stronger material, using relevant observation, data or model evidence	materials, strength, use, results, rather, than, appearance, identify, stronger, material	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W12-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W10 to W11; Spaced: P3-W04; Prerequisite: P2 inquiry readiness	Accurately relate strength to a suitable everyday use, using relevant observation, data or model evidence	materials, strength, relate, suitable, everyday, use	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W13-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W11 to W12; Spaced: P3-W05; Prerequisite: P2 inquiry readiness	Accurately describe flexibility as the ability to bend without breaking, using relevant observation, data or model evidence	materials, flexibility, describe, ability, bend, without, breaking	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W13-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W11 to W12; Spaced: P3-W05; Prerequisite: P2 inquiry readiness	Accurately compare materials for flexibility using the same method, using relevant observation, data or model evidence	materials, flexibility, compare, same, method	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W13-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W11 to W12; Spaced: P3-W05; Prerequisite: P2 inquiry readiness	Accurately distinguish flexible from strong, using relevant observation, data or model evidence	materials, flexibility, distinguish, flexible, strong	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W13-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W11 to W12; Spaced: P3-W05; Prerequisite: P2 inquiry readiness	Accurately relate flexibility to a suitable everyday use, using relevant observation, data or model evidence	materials, flexibility, relate, suitable, everyday, use	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W14-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W12 to W13; Spaced: P3-W06; Prerequisite: P2 inquiry readiness	Accurately describe a waterproof material as one that does not absorb water, using relevant observation, data or model evidence	materials, waterproof, property, describe, material, one, does, not, absorb, water	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W14-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W12 to W13; Spaced: P3-W06; Prerequisite: P2 inquiry readiness	Accurately compare materials for waterproofness using equal amounts of water and equal observation time, using relevant observation, data or model evidence	materials, waterproof, property, compare, waterproofness, equal, amounts, water, observation, time	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W14-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W12 to W13; Spaced: P3-W06; Prerequisite: P2 inquiry readiness	Accurately use absorption observations as evidence when deciding whether a material is waterproof, using relevant observation, data or model evidence	materials, waterproof, property, use, absorption, observations, evidence, when, deciding, whether	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W14-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W12 to W13; Spaced: P3-W06; Prerequisite: P2 inquiry readiness	Accurately relate waterproofness to suitable uses, using relevant observation, data or model evidence	materials, waterproof, property, relate, waterproofness, suitable, uses	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W15-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W13 to W14; Spaced: P3-W07; Prerequisite: P2 inquiry readiness	Accurately describe a transparent material as allowing light to pass through so objects can be seen clearly, using relevant observation, data or model evidence	materials, transparency, describe, transparent, material, allowing, light, pass, through, objects	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W15-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W13 to W14; Spaced: P3-W07; Prerequisite: P2 inquiry readiness	Accurately compare materials for transparency, using relevant observation, data or model evidence	materials, transparency, compare	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W15-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W13 to W14; Spaced: P3-W07; Prerequisite: P2 inquiry readiness	Accurately distinguish transparency from being colourless, using relevant observation, data or model evidence	materials, transparency, distinguish, being, colourless	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W15-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W13 to W14; Spaced: P3-W07; Prerequisite: P2 inquiry readiness	Accurately relate transparency to suitable uses, using relevant observation, data or model evidence	materials, transparency, relate, suitable, uses	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W16-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P3-W14 to W15; Spaced: P3-W08; Prerequisite: P2 inquiry readiness	Accurately classify tested materials by whether they float or sink in water, using relevant observation, data or model evidence	materials, ability, float, sink, classify, tested, whether, they, water	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register

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P3-W16-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W14 to W15; Spaced: P3-W08; Prerequisite: P2 inquiry readiness	Accurately select and use suitable apparatus for a safe, fair float/sink comparison, using relevant observation, data or model evidence	materials, ability, float, sink, select, use, suitable, apparatus, safe, fair	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W16-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W14 to W15; Spaced: P3-W08; Prerequisite: P2 inquiry readiness	Accurately record floating and sinking observations accurately, using relevant observation, data or model evidence	materials, ability, float, sink, record, floating, sinking, observations, accurately	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W16-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W14 to W15; Spaced: P3-W08; Prerequisite: P2 inquiry readiness	Accurately avoid claiming that every object made of one material behaves identically regardless of design, using relevant observation, data or model evidence	materials, ability, float, sink, avoid, claiming, every, object, made, one	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W17-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W15 to W16; Spaced: P3-W09; Prerequisite: P2 inquiry readiness	Accurately identify the properties required for a stated object, using relevant observation, data or model evidence	materials, selecting, purpose, identify, properties, required, stated, object	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W17-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W15 to W16; Spaced: P3-W09; Prerequisite: P2 inquiry readiness	Accurately match a material to a use using relevant properties, using relevant observation, data or model evidence	materials, selecting, purpose, match, material, use, relevant, properties	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W17-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W15 to W16; Spaced: P3-W09; Prerequisite: P2 inquiry readiness	Accurately explain why one material is more suitable than another, using relevant observation, data or model evidence	materials, selecting, purpose, explain, why, one, material, more, suitable, than	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W17-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W15 to W16; Spaced: P3-W09; Prerequisite: P2 inquiry readiness	Accurately recognise that a useful object may require a combination of materials, using relevant observation, data or model evidence	materials, selecting, purpose, recognise, useful, object, may, require, combination	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W18-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W16 to W17; Spaced: P3-W10; Prerequisite: P2 inquiry readiness	Accurately compare materials using two or more properties, using relevant observation, data or model evidence	materials, multi, property, design, challenge, compare, two, more, properties	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W18-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W16 to W17; Spaced: P3-W10; Prerequisite: P2 inquiry readiness	Accurately prioritise properties for a specific purpose, using relevant observation, data or model evidence	materials, multi, property, design, challenge, prioritise, properties, specific, purpose	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W18-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W16 to W17; Spaced: P3-W10; Prerequisite: P2 inquiry readiness	Accurately use test data to justify a material choice, using relevant observation, data or model evidence	materials, multi, property, design, challenge, use, test, data, justify, material	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W18-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W16 to W17; Spaced: P3-W10; Prerequisite: P2 inquiry readiness	Accurately identify a trade-off when no material has every desired property, using relevant observation, data or model evidence	materials, multi, property, design, challenge, identify, trade, off, when, material	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W19-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P3-W17 to W18; Spaced: P3-W11; Prerequisite: P2 inquiry readiness	Accurately state the property being tested, using relevant observation, data or model evidence	materials, planning, evaluating, fair, material, test, state, property, being, tested	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W19-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W17 to W18; Spaced: P3-W11; Prerequisite: P2 inquiry readiness	Accurately identify what should be changed in a comparison, using relevant observation, data or model evidence	materials, planning, evaluating, fair, material, test, identify, what, should, changed	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W19-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W17 to W18; Spaced: P3-W11; Prerequisite: P2 inquiry readiness	Accurately select suitable apparatus and state what should be observed or measured, using relevant observation, data or model evidence	materials, planning, evaluating, fair, material, test, select, suitable, apparatus, state	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W19-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W17 to W18; Spaced: P3-W11; Prerequisite: P2 inquiry readiness	Accurately identify important conditions to keep the same and suggest one improvement, using relevant observation, data or model evidence	materials, planning, evaluating, fair, material, test, identify, important, conditions, keep	P3 boundary: describe observable properties; avoid particle-level explanations	Verified against V7 compliance register
P3-W20-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W18 to W19; Spaced: P3-W12; Prerequisite: P2 inquiry readiness	Accurately recognise the seven named material types in unfamiliar objects, using relevant observation, data or model evidence	term, mastery, materials, integration, transfer, recognise, seven, named, material, types	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W20-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W18 to W19; Spaced: P3-W12; Prerequisite: P2 inquiry readiness	Accurately compare materials across all five P3 physical properties, using relevant observation, data or model evidence	term, mastery, materials, integration, transfer, compare, across, all, five, physical	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W20-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W18 to W19; Spaced: P3-W12; Prerequisite: P2 inquiry readiness	Accurately select a material for a novel use using evidence, using relevant observation, data or model evidence	term, mastery, materials, integration, transfer, select, material, novel, use, evidence	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W20-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W18 to W19; Spaced: P3-W12; Prerequisite: P2 inquiry readiness	Accurately evaluate a claim about material suitability using test data, using relevant observation, data or model evidence	term, mastery, materials, integration, transfer, evaluate, claim, about, material, suitability	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W21-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W19 to W20; Spaced: P3-W13; Prerequisite: P2 inquiry readiness	Accurately recognise a life cycle as repeated stages in the life of a living thing, using relevant observation, data or model evidence	life, cycles, what, makes, cycle, recognise, repeated, stages, living, thing	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W21-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W19 to W20; Spaced: P3-W13; Prerequisite: P2 inquiry readiness	Accurately sequence stages from young to adult, using relevant observation, data or model evidence	life, cycles, what, makes, cycle, sequence, stages, young, adult	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W21-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W19 to W20; Spaced: P3-W13; Prerequisite: P2 inquiry readiness	Accurately recognise that adults reproduce to begin a new cycle, using relevant observation, data or model evidence	life, cycles, what, makes, cycle, recognise, adults, reproduce, begin, new	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W21-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W19 to W20; Spaced: P3-W13; Prerequisite: P2 inquiry readiness	Accurately use a cycle diagram rather than a straight list when appropriate, using relevant observation, data or model evidence	life, cycles, what, makes, cycle, use, diagram, rather, than, straight	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W22-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P3-W20 to W21; Spaced: P3-W14; Prerequisite: P2 inquiry readiness	Accurately identify seed as a P3 flowering-plant life-cycle stage, using relevant observation, data or model evidence	plant, life, cycle, seed, young, adult, identify, flowering, stage	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W22-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W20 to W21; Spaced: P3-W14; Prerequisite: P2 inquiry readiness	Accurately identify young plant as a P3 life-cycle stage, using relevant observation, data or model evidence	plant, life, cycle, seed, young, adult, identify, stage	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W22-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W20 to W21; Spaced: P3-W14; Prerequisite: P2 inquiry readiness	Accurately identify adult plant as a P3 life-cycle stage, using relevant observation, data or model evidence	plant, life, cycle, seed, young, adult, identify, stage	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W22-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W20 to W21; Spaced: P3-W14; Prerequisite: P2 inquiry readiness	Accurately arrange the three stages in a repeating cycle, using relevant observation, data or model evidence	plant, life, cycle, seed, young, adult, arrange, three, stages, repeating	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W23-KP1	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Short response	Recent: P3-W21 to W22; Spaced: P3-W15; Prerequisite: P2 inquiry readiness	Accurately record dated observations of a plant grown from a seed, using relevant observation, data or model evidence	plant, life, cycle, observing, change, over, time, record, dated, observations	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W23-KP2	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W21 to W22; Spaced: P3-W15; Prerequisite: P2 inquiry readiness	Accurately identify changes between consecutive observations, using relevant observation, data or model evidence	plant, life, cycle, observing, change, over, time, identify, changes, between	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W23-KP3	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W21 to W22; Spaced: P3-W15; Prerequisite: P2 inquiry readiness	Accurately select a suitable measuring tool and use drawings and simple measurements consistently, using relevant observation, data or model evidence	plant, life, cycle, observing, change, over, time, select, suitable, measuring	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W23-KP4	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W21 to W22; Spaced: P3-W15; Prerequisite: P2 inquiry readiness	Accurately ask a new investigable question or predict the next stage from the observed pattern, using relevant observation, data or model evidence	plant, life, cycle, observing, change, over, time, ask, new, investigable	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P3-W24-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P3-W22 to W23; Spaced: P3-W16; Prerequisite: P2 inquiry readiness	Accurately compare stages in the life cycles of two flowering plants, using relevant observation, data or model evidence	plant, life, cycle, comparing, cycles, compare, stages, two, flowering, plants	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W24-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W22 to W23; Spaced: P3-W16; Prerequisite: P2 inquiry readiness	Accurately identify a shared seed-young plant-adult plant pattern, using relevant observation, data or model evidence	plant, life, cycle, comparing, cycles, identify, shared, seed, young, adult	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W24-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W22 to W23; Spaced: P3-W16; Prerequisite: P2 inquiry readiness	Accurately identify observable differences without changing the core cycle, using relevant observation, data or model evidence	plant, life, cycle, comparing, cycles, identify, observable, differences, without, changing	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W24-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W22 to W23; Spaced: P3-W16; Prerequisite: P2 inquiry readiness	Accurately revise a plant life-cycle model when new observation evidence is provided, using relevant observation, data or model evidence	plant, life, cycle, comparing, cycles, revise, model, when, new, observation	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W25-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P3-W23 to W24; Spaced: P3-W17; Prerequisite: P2 inquiry readiness	Accurately sequence the observable stages in a chicken life-cycle diagram, using relevant observation, data or model evidence	animal, life, cycles, chicken, frog, sequence, observable, stages, cycle, diagram	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W25-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W23 to W24; Spaced: P3-W17; Prerequisite: P2 inquiry readiness	Accurately sequence the observable stages in a frog life-cycle diagram, including a froglet when shown, using relevant observation, data or model evidence	animal, life, cycles, chicken, frog, sequence, observable, stages, cycle, diagram	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W25-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W23 to W24; Spaced: P3-W17; Prerequisite: P2 inquiry readiness	Accurately compare the young and adult forms of chicken and frog using observable evidence, using relevant observation, data or model evidence	animal, life, cycles, chicken, frog, compare, young, adult, forms, observable	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W25-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W23 to W24; Spaced: P3-W17; Prerequisite: P2 inquiry readiness	Accurately recognise that the number and names of stages depend on the organism and the diagram provided, using relevant observation, data or model evidence	animal, life, cycles, chicken, frog, recognise, number, names, stages, depend	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W26-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P3-W24 to W25; Spaced: P3-W18; Prerequisite: P2 inquiry readiness	Accurately sequence egg, nymph and adult stages for a cockroach, using relevant observation, data or model evidence	animal, life, cycles, incomplete, metamorphosis, examples, sequence, egg, nymph, adult	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W26-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W24 to W25; Spaced: P3-W18; Prerequisite: P2 inquiry readiness	Accurately sequence egg, nymph and adult stages for a grasshopper, using relevant observation, data or model evidence	animal, life, cycles, incomplete, metamorphosis, examples, sequence, egg, nymph, adult	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W26-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W24 to W25; Spaced: P3-W18; Prerequisite: P2 inquiry readiness	Accurately compare a nymph with its adult using observable features, using relevant observation, data or model evidence	animal, life, cycles, incomplete, metamorphosis, examples, compare, nymph, its, adult	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W26-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W24 to W25; Spaced: P3-W18; Prerequisite: P2 inquiry readiness	Accurately recognise the three-stage pattern in cockroach and grasshopper life cycles, using relevant observation, data or model evidence	animal, life, cycles, incomplete, metamorphosis, examples, recognise, three, stage, pattern	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W27-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P3-W25 to W26; Spaced: P3-W19; Prerequisite: P2 inquiry readiness	Accurately sequence egg, larva, pupa and adult stages for a butterfly, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, butterfly, beetle, sequence, egg, larva	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W27-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W25 to W26; Spaced: P3-W19; Prerequisite: P2 inquiry readiness	Accurately sequence egg, larva, pupa and adult stages for a beetle, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, butterfly, beetle, sequence, egg, larva	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W27-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W25 to W26; Spaced: P3-W19; Prerequisite: P2 inquiry readiness	Accurately recognise larva and pupa as distinct stages, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, butterfly, beetle, recognise, larva, pupa	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W27-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W25 to W26; Spaced: P3-W19; Prerequisite: P2 inquiry readiness	Accurately compare butterfly and beetle life cycles using the four-stage pattern, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, butterfly, beetle, compare, four, stage	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W28-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P3-W26 to W27; Spaced: P3-W20; Prerequisite: P2 inquiry readiness	Accurately sequence egg, larva, pupa and adult stages for a mosquito, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, mosquito, sequence, egg, larva, pupa	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W28-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P3-W26 to W27; Spaced: P3-W20; Prerequisite: P2 inquiry readiness	Accurately identify that mosquito larvae and pupae live in water, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, mosquito, identify, larvae, pupae, live	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W28-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P3-W26 to W27; Spaced: P3-W20; Prerequisite: P2 inquiry readiness	Accurately compare the mosquito cycle with another four-stage animal cycle, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, mosquito, compare, cycle, another, four	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W28-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P3-W26 to W27; Spaced: P3-W20; Prerequisite: P2 inquiry readiness	Accurately relate removal of stagnant water to interruption of the mosquito life cycle, using relevant observation, data or model evidence	animal, life, cycles, complete, metamorphosis, mosquito, relate, removal, stagnant, water	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W29-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W27 to W28; Spaced: P3-W21; Prerequisite: P2 inquiry readiness	Accurately compare plant and animal life cycles for repeated stages and growth, using relevant observation, data or model evidence	life, cycle, comparison, comparing, across, plants, animals, compare, plant, animal	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W29-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W27 to W28; Spaced: P3-W21; Prerequisite: P2 inquiry readiness	Accurately compare the number, names and observable features of stages shown in different animal cycles, using relevant observation, data or model evidence	life, cycle, comparison, comparing, across, plants, animals, compare, number, names	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W29-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W27 to W28; Spaced: P3-W21; Prerequisite: P2 inquiry readiness	Accurately use stage evidence to identify an unknown life cycle, using relevant observation, data or model evidence	life, cycle, comparison, comparing, across, plants, animals, use, stage, evidence	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W29-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W27 to W28; Spaced: P3-W21; Prerequisite: P2 inquiry readiness	Accurately predict a missing stage in a cycle diagram, using relevant observation, data or model evidence	life, cycle, comparison, comparing, across, plants, animals, predict, missing, stage	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W30-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W28 to W29; Spaced: P3-W22; Prerequisite: P2 inquiry readiness	Accurately interpret unfamiliar plant or animal life-cycle diagrams, using relevant observation, data or model evidence	term, mastery, life, cycle, inquiry, boundaries, interpret, unfamiliar, plant, animal	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W30-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W28 to W29; Spaced: P3-W22; Prerequisite: P2 inquiry readiness	Accurately explain one similarity and one difference between two cycles, using relevant observation, data or model evidence	term, mastery, life, cycle, inquiry, boundaries, explain, one, similarity, difference	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W30-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W28 to W29; Spaced: P3-W22; Prerequisite: P2 inquiry readiness	Accurately evaluate whether a proposed sequence is supported by evidence, using relevant observation, data or model evidence	term, mastery, life, cycle, inquiry, boundaries, evaluate, whether, proposed, sequence	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W30-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W28 to W29; Spaced: P3-W22; Prerequisite: P2 inquiry readiness	Accurately keep P3 explanations within observable life-cycle stages without requiring P5 reproduction processes, using relevant observation, data or model evidence	term, mastery, life, cycle, inquiry, boundaries, keep, explanations, within, observable	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W31-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W29 to W30; Spaced: P3-W23; Prerequisite: P2 inquiry readiness	Accurately recognise that a magnet can exert a push, using relevant observation, data or model evidence	magnets, magnetic, push, pull, recognise, magnet, can, exert	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W31-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W29 to W30; Spaced: P3-W23; Prerequisite: P2 inquiry readiness	Accurately recognise that a magnet can exert a pull, using relevant observation, data or model evidence	magnets, magnetic, push, pull, recognise, magnet, can, exert	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W31-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W29 to W30; Spaced: P3-W23; Prerequisite: P2 inquiry readiness	Accurately distinguish contact push/pull from magnetic push/pull in a setup, using relevant observation, data or model evidence	magnets, magnetic, push, pull, distinguish, contact, setup	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P3-W31-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W29 to W30; Spaced: P3-W23; Prerequisite: P2 inquiry readiness	Accurately predict motion when a magnetic interaction changes, using relevant observation, data or model evidence	magnets, magnetic, push, pull, predict, motion, when, interaction, changes	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W32-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P3-W30 to W31; Spaced: P3-W24; Prerequisite: P2 inquiry readiness	Accurately identify iron and steel as magnetic materials, using relevant observation, data or model evidence	magnets, magnetic, non, materials, identify, iron, steel	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W32-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W30 to W31; Spaced: P3-W24; Prerequisite: P2 inquiry readiness	Accurately distinguish a magnet from a magnetic material, using relevant observation, data or model evidence	magnets, magnetic, non, materials, distinguish, magnet, material	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W32-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W30 to W31; Spaced: P3-W24; Prerequisite: P2 inquiry readiness	Accurately select and use a magnet appropriately to classify tested objects, using relevant observation, data or model evidence	magnets, magnetic, non, materials, select, use, magnet, appropriately, classify, tested objects	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W32-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W30 to W31; Spaced: P3-W24; Prerequisite: P2 inquiry readiness	Accurately ask a new investigable question from the magnetic-test results, using relevant observation, data or model evidence	magnets, magnetic, non, materials, ask, new, investigable, question, test, results	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W33-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W31 to W32; Spaced: P3-W25; Prerequisite: P2 inquiry readiness	Accurately identify that a magnet has two poles, using relevant observation, data or model evidence	magnets, poles, attraction, identify, magnet, has, two	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W33-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W31 to W32; Spaced: P3-W25; Prerequisite: P2 inquiry readiness	Accurately recognise north and south poles as labels for magnet poles, using relevant observation, data or model evidence	magnets, poles, attraction, recognise, north, south, labels, magnet	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W33-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W31 to W32; Spaced: P3-W25; Prerequisite: P2 inquiry readiness	Accurately predict that unlike poles attract, using relevant observation, data or model evidence	magnets, poles, attraction, predict, unlike, attract	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W33-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W31 to W32; Spaced: P3-W25; Prerequisite: P2 inquiry readiness	Accurately use attraction evidence carefully because magnets can also attract magnetic materials, using relevant observation, data or model evidence	magnets, poles, attraction, use, evidence, carefully, because, can, also, attract	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W34-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W32 to W33; Spaced: P3-W26; Prerequisite: P2 inquiry readiness	Accurately predict that like poles repel, using relevant observation, data or model evidence	magnets, repulsion, identifying, poles, predict, like, repel	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W34-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W32 to W33; Spaced: P3-W26; Prerequisite: P2 inquiry readiness	Accurately recognise repulsion as evidence of magnet-to-magnet interaction, using relevant observation, data or model evidence	magnets, repulsion, identifying, poles, recognise, evidence, magnet, interaction	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W34-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W32 to W33; Spaced: P3-W26; Prerequisite: P2 inquiry readiness	Accurately use a known pole to identify an unknown pole, using relevant observation, data or model evidence	magnets, repulsion, identifying, poles, use, known, pole, identify, unknown	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W34-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W32 to W33; Spaced: P3-W26; Prerequisite: P2 inquiry readiness	Accurately explain attraction and repulsion using pole relationships, using relevant observation, data or model evidence	magnets, repulsion, identifying, poles, explain, attraction, pole, relationships	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W35-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W33 to W34; Spaced: P3-W27; Prerequisite: P2 inquiry readiness	Accurately recognise that a freely suspended bar magnet comes to rest in a north-south direction, using relevant observation, data or model evidence	magnets, freely, suspended, magnet, recognise, bar, comes, rest, north, south	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W35-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W33 to W34; Spaced: P3-W27; Prerequisite: P2 inquiry readiness	Accurately select a suitable suspension setup that allows the bar magnet to turn freely, using relevant observation, data or model evidence	magnets, freely, suspended, magnet, select, suitable, suspension, setup, allows, bar	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W35-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W33 to W34; Spaced: P3-W27; Prerequisite: P2 inquiry readiness	Accurately distinguish direction finding from attraction to nearby materials, using relevant observation, data or model evidence	magnets, freely, suspended, magnet, distinguish, direction, finding, attraction, nearby, materials	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W35-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W33 to W34; Spaced: P3-W27; Prerequisite: P2 inquiry readiness	Accurately revise a direction model after interpreting repeated observations, using relevant observation, data or model evidence	magnets, freely, suspended, magnet, revise, direction, model, after, interpreting, repeated observations	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W36-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P3-W34 to W35; Spaced: P3-W28; Prerequisite: P2 inquiry readiness	Accurately compare magnet strength using a defined outcome such as number of identical clips lifted, using relevant observation, data or model evidence	magnets, comparing, magnetic, strength, compare, magnet, defined, outcome, such, number	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W36-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W34 to W35; Spaced: P3-W28; Prerequisite: P2 inquiry readiness	Accurately select suitable apparatus and identify the changed magnet in a fair comparison, using relevant observation, data or model evidence	magnets, comparing, magnetic, strength, select, suitable, apparatus, identify, changed, magnet	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W36-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W34 to W35; Spaced: P3-W28; Prerequisite: P2 inquiry readiness	Accurately keep clip type and testing method the same, using relevant observation, data or model evidence	magnets, comparing, magnetic, strength, keep, clip, type, testing, method, same	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W36-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W34 to W35; Spaced: P3-W28; Prerequisite: P2 inquiry readiness	Accurately use repeated table or bar-chart data to defend which magnet is stronger, using relevant observation, data or model evidence	magnets, comparing, magnetic, strength, use, repeated, table, bar, chart, data	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W37-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W35 to W36; Spaced: P3-W29; Prerequisite: P2 inquiry readiness	Accurately recognise stroking as one method of making a magnet, using relevant observation, data or model evidence	magnets, making, magnet, stroking, recognise, one, method	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W37-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W35 to W36; Spaced: P3-W29; Prerequisite: P2 inquiry readiness	Accurately follow a repeated one-direction stroke model, using relevant observation, data or model evidence	magnets, making, magnet, stroking, follow, repeated, one, direction, stroke, model	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W37-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W35 to W36; Spaced: P3-W29; Prerequisite: P2 inquiry readiness	Accurately use a magnetic test before and after stroking, using relevant observation, data or model evidence	magnets, making, magnet, stroking, use, magnetic, test, before, after	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W37-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W35 to W36; Spaced: P3-W29; Prerequisite: P2 inquiry readiness	Accurately evaluate evidence that the object became magnetised, using relevant observation, data or model evidence	magnets, making, magnet, stroking, evaluate, evidence, object, became, magnetised	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W38-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P3-W36 to W37; Spaced: P3-W30; Prerequisite: P2 inquiry readiness	Accurately recognise the electrical method as another way to make a magnet, using relevant observation, data or model evidence	magnets, making, magnet, electrical, method, recognise, another, way, make	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W38-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W36 to W37; Spaced: P3-W30; Prerequisite: P2 inquiry readiness	Accurately identify the coil, iron or steel object and electrical source in a simple setup, using relevant observation, data or model evidence	magnets, making, magnet, electrical, method, identify, coil, iron, steel, object	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W38-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W36 to W37; Spaced: P3-W30; Prerequisite: P2 inquiry readiness	Accurately use a before-and-after magnetic test, using relevant observation, data or model evidence	magnets, making, magnet, electrical, method, use, before, after, magnetic, test	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W38-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W36 to W37; Spaced: P3-W30; Prerequisite: P2 inquiry readiness	Accurately follow safety instructions and avoid constructing circuits beyond the provided setup, using relevant observation, data or model evidence	magnets, making, magnet, electrical, method, follow, safety, instructions, avoid, constructing	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W39-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P3-W37 to W38; Spaced: P3-W31; Prerequisite: P2 inquiry readiness	Accurately recognise uses of magnets in familiar everyday objects, using relevant observation, data or model evidence	magnets, uses, design, recognise, familiar, everyday, objects	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W39-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W37 to W38; Spaced: P3-W31; Prerequisite: P2 inquiry readiness	Accurately explain a use by linking it to attraction or repulsion, using relevant observation, data or model evidence	magnets, uses, design, explain, use, linking, attraction, repulsion	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P3-W39-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W37 to W38; Spaced: P3-W31; Prerequisite: P2 inquiry readiness	Accurately generate and compare more than one workable magnetic design, using relevant observation, data or model evidence	magnets, uses, design, generate, compare, more, than, one, workable, magnetic	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W39-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W37 to W38; Spaced: P3-W31; Prerequisite: P2 inquiry readiness	Accurately ask an investigable question that could improve the chosen design, using relevant observation, data or model evidence	magnets, uses, design, ask, investigable, question, could, improve, chosen	P3 boundary: nickel/cobalt recall, magnetic shielding and magnetic induction are not required	Verified against V7 compliance register
P3-W40-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P3-W38 to W39; Spaced: P3-W32; Prerequisite: P2 inquiry readiness	Accurately integrate classification, material properties, life cycles and magnets in one unfamiliar context, using relevant observation, data or model evidence	cumulative, transfer, year, end, mastery, inquiry, communication, integrate, classification, material	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W40-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P3-W38 to W39; Spaced: P3-W32; Prerequisite: P2 inquiry readiness	Accurately interpret diagrams, tables, charts and observation records accurately, using relevant observation, data or model evidence	cumulative, transfer, year, end, mastery, inquiry, communication, interpret, diagrams, tables	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W40-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P3-W38 to W39; Spaced: P3-W32; Prerequisite: P2 inquiry readiness	Accurately defend the stronger of two competing claims using evidence, using relevant observation, data or model evidence	cumulative, transfer, year, end, mastery, inquiry, communication, defend, stronger, two	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register
P3-W40-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P3-W38 to W39; Spaced: P3-W32; Prerequisite: P2 inquiry readiness	Accurately revise an explanation or model and communicate one responsible action, using relevant observation, data or model evidence	cumulative, transfer, year, end, mastery, inquiry, communication, revise, explanation, model	P3 boundary: use observable evidence; avoid unexplained microscopic or secondary-level mechanisms	Verified against V7 compliance register

2. P4 40-Week Yearly Map - Curriculum and Weekly Focus

Week	Term	Term Week	Theme	Topic	Weekly Focus	Practice	Values / Attitudes	Stage
1	1	1	Systems	Plant parts and functions	Plant-system overview	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Introduce
2	1	2	Systems	Plant parts and functions	Roots	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Develop
3	1	3	Systems	Plant parts and functions	Stems	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
4	1	4	Systems	Plant parts and functions	Leaves	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
5	1	5	Systems	Plant parts and functions	Plant-part comparison	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Apply / Consolidate
6	1	6	Systems	Plant parts and functions	Whole-plant application	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Apply / Consolidate
7	1	7	Systems	Plant parts and functions	Plant observation investigation	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Master / Transfer
8	1	8	Systems	Human digestive system	Overview of human body systems	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
9	1	9	Systems	Human digestive system	Digestive-system pathway	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
10	1	10	Systems	Human digestive system	Mouth and gullet	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
11	2	1	Systems	Human digestive system	Stomach	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
12	2	2	Systems	Human digestive system	Small intestine	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
13	2	3	Systems	Human digestive system	Large intestine	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
14	2	4	Systems	Human digestive system	Integrated digestion	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Master / Transfer
15	2	5	Cycles	Matter	What is matter	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Introduce
16	2	6	Cycles	Matter	Solids, liquids and gases	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Develop
17	2	7	Cycles	Matter	Measuring mass	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Develop
18	2	8	Cycles	Matter	Measuring volume	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Apply / Consolidate
19	2	9	Cycles	Matter	Matter mastery	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Master / Transfer
20	2	10	Energy	Light	Sources of light and seeing objects	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
21	3	1	Energy	Light	Light travels in straight lines	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
22	3	2	Energy	Light	Shadow formation	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
23	3	3	Energy	Light	Shadow shape and object position	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Develop
24	3	4	Energy	Light	Shadow size variables	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
25	3	5	Energy	Light	Complete and partial blocking	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
26	3	6	Energy	Light	Light investigation	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Master / Transfer
27	3	7	Energy	Heat	Heat sources and heat as energy	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
28	3	8	Energy	Heat	Temperature and measurement	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Develop
29	3	9	Energy	Heat	Direction of heat flow	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
30	3	10	Energy	Heat	Heat gain, heat loss and temperature	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
31	4	1	Energy	Heat	Expansion and contraction	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
32	4	2	Energy	Heat	Changes of state from heat gain or loss	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
33	4	3	Energy	Heat	Conductors of heat	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
34	4	4	Energy	Heat	Heat mastery and P4 transfer	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Master / Transfer
35	4	5	Integration	P4 inquiry and mastery	Fair-test design	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Introduce
36	4	6	Integration	P4 inquiry and mastery	Tables and graphs	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
37	4	7	Integration	P4 inquiry and mastery	Diagram and model reasoning	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Develop
38	4	8	Integration	P4 inquiry and mastery	Cross-topic application	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
39	4	9	Integration	P4 inquiry and mastery	Misconception repair	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
40	4	10	Integration	P4 inquiry and mastery	P4 cumulative mastery	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer

2. P4 40-Week Yearly Map - Atomic KP Summary, Retrieval and Scope

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
1	1. Identify root, stem and leaf as main plant parts 2. State that plant parts work together as a system 3. Match each main plant part to its position on a plant 4. Use a labelled plant diagram to explain how parts support survival	Recent: none; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains plant-system overview accurately using relevant evidence	plant, parts, functions, system, overview, identify, root, stem, leaf, main	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
2	1. Identify roots on familiar plants 2. State that roots anchor the plant 3. State that roots take in water 4. Use evidence from a root investigation to explain a root function	Recent: P4-W01 to W01; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains roots accurately using relevant evidence	plant, parts, functions, roots, identify, familiar, plants, state, anchor, take	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
3	1. Identify the stem of a plant 2. State that the stem supports leaves and flowers 3. State that the stem connects roots and leaves 4. Predict a plant consequence when its stem is badly damaged	Recent: P4-W01 to W02; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains stems accurately using relevant evidence	plant, parts, functions, stems, identify, stem, state, supports,, leaves, flowers	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
4	1. Identify leaves as plant parts 2. State that leaves make food for the plant 3. Relate leaf position to receiving light 4. Use observations to infer whether a leaf is functioning normally	Recent: P4-W02 to W03; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains leaves accurately using relevant evidence	plant, parts, functions, leaves, identify, state, make, food, relate, leaf	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
5	1. Compare roots, stems and leaves by observable features 2. Compare the functions of roots, stems and leaves 3. Classify a shown plant structure by its function 4. Correct a plant-parts model using observable evidence	Recent: P4-W03 to W04; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains plant-part comparison accurately using relevant evidence	plant, parts, functions, part, comparison, compare, roots, stems, leaves, observable	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
6	1. Explain how roots and stems support an upright plant 2. Explain why leaves depend on other plant parts 3. Trace a simple water path from surroundings to leaves without naming tubes 4. Evaluate a claim that one plant part can work independently	Recent: P4-W04 to W05; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains whole-plant application accurately using relevant evidence	plant, parts, functions, whole, application, explain, how, roots, stems, support	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
7	1. Make a labelled drawing of observable plant parts 2. Record changes in a plant consistently over time 3. Identify one variable to keep the same in a plant comparison 4. Use recorded evidence to support a conclusion	Recent: P4-W05 to W06; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Explains plant observation investigation accurately using relevant evidence	plant, parts, functions, observation, investigation, make, labelled, drawing, observable, record	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning
8	1. Identify digestive, respiratory, circulatory, skeletal and muscular systems 2. State one broad function of each named human system 3. Distinguish a body system from a single organ 4. Match familiar activities to the systems involved	Recent: P4-W06 to W07; Spaced: first-term build; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains overview of human body systems accurately using relevant evidence	human, digestive, system, overview, body, systems, identify, respiratory, circulatory, skeletal	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
9	1. Identify mouth, gullet, stomach, small intestine and large intestine 2. Arrange digestive parts in the correct pathway 3. Trace food through the digestive system 4. Correct an incorrectly ordered digestive-system diagram	Recent: P4-W07 to W08; Spaced: P4-W01; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains digestive-system pathway accurately using relevant evidence	human, digestive, system, pathway, identify, mouth, gullet, stomach, small, intestine	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
10	1. State that digestion begins in the mouth 2. State that the gullet carries food to the stomach 3. Distinguish movement through the gullet from digestion in the mouth 4. Use a diagram to explain what happens before food reaches the stomach	Recent: P4-W08 to W09; Spaced: P4-W02; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains mouth and gullet accurately using relevant evidence	human, digestive, system, mouth, gullet, state, digestion, begins, carries, food	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
11	1. Identify the stomach in a body diagram 2. State the role of the stomach in digestion 3. Distinguish the stomach from the small intestine 4. Predict the next organ food enters after the stomach	Recent: P4-W09 to W10; Spaced: P4-W03; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains stomach accurately using relevant evidence	human, digestive, system, stomach, identify, body, diagram, state, role, digestion	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
12	1. Identify the small intestine 2. State that digestion is completed in the small intestine 3. State that digested food is absorbed in the small intestine 4. Use evidence to explain why the small intestine is important	Recent: P4-W10 to W11; Spaced: P4-W04; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains small intestine accurately using relevant evidence	human, digestive, system, small, intestine, identify, state, digestion, completed, digested	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
13	1. Identify the large intestine 2. State that water is absorbed from undigested food in the large intestine 3. Distinguish small-intestine and large-intestine functions 4. Interpret a digestive-system model with one missing function	Recent: P4-W11 to W12; Spaced: P4-W05; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains large intestine accurately using relevant evidence	human, digestive, system, large, intestine, identify, state, water, absorbed, undigested	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
14	1. Explain why digestion requires several connected parts 2. Trace food and state the main function at each stage 3. Compare two digestive-system diagrams for accuracy 4. Evaluate a claim that digestion happens only in the stomach	Recent: P4-W12 to W13; Spaced: P4-W06; Prerequisite: P3-W02-KP2; P3-W03-KP2	Explains integrated digestion accurately using relevant evidence	human, digestive, system, integrated, digestion, explain, why, requires, several, connected	P4 boundary: detailed enzymes, villi and biochemical digestion are not required
15	1. State that matter is anything that has mass and occupies space 2. Use evidence of mass and occupied space to decide whether something is matter 3. Recognise solids, liquids and gases as matter 4. Reject the claim that gases are not matter because they cannot always be seen	Recent: P4-W13 to W14; Spaced: P4-W07; Prerequisite: P3-W11-KP1; P3-W16-KP1	Explains what is matter accurately using relevant evidence	matter, what, state, anything, has, mass, occupies, space, use, evidence	P4 boundary: density, particle theory and gas laws are not required
16	1. State that a solid has a fixed shape and fixed volume 2. State that a liquid has no fixed shape but has fixed volume 3. State that a gas has no fixed shape and no fixed volume 4. Compare the three states using a shape-and-volume table	Recent: P4-W14 to W15; Spaced: P4-W08; Prerequisite: P3-W11-KP1; P3-W16-KP1	Explains solids, liquids and gases accurately using relevant evidence	matter, solids, liquids, gases, state, solid, has, fixed, shape, volume	P4 boundary: density, particle theory and gas laws are not required
17	1. Select an appropriate balance for measuring mass 2. Read a mass scale with the correct unit 3. Record mass measurements consistently 4. Evaluate whether a mass measurement method is suitable	Recent: P4-W15 to W16; Spaced: P4-W09; Prerequisite: P3-W11-KP1; P3-W16-KP1	Explains measuring mass accurately using relevant evidence	matter, measuring, mass, select, appropriate, balance, read, scale, correct, unit	P4 boundary: density, particle theory and gas laws are not required
18	1. Select a measuring cylinder or suitable apparatus for volume 2. Read liquid volume at the correct scale position 3. Determine volume of a regular or displaced object using provided apparatus at P4 level 4. Evaluate a volume-measurement setup and suggest one improvement	Recent: P4-W16 to W17; Spaced: P4-W10; Prerequisite: P3-W11-KP1; P3-W16-KP1	Explains measuring volume accurately using relevant evidence	matter, measuring, volume, select, cylinder, suitable, apparatus, read, liquid, correct	P4 boundary: density, particle theory and gas laws are not required
19	1. Classify unfamiliar examples as solid, liquid or gas using shape and volume 2. Interpret mass and volume data without using density 3. Correct a model that confuses amount, mass and volume 4. Construct an evidence-based explanation that something is matter	Recent: P4-W17 to W18; Spaced: P4-W11; Prerequisite: P3-W11-KP1; P3-W16-KP1	Explains matter mastery accurately using relevant evidence	matter, mastery, classify, unfamiliar, examples, solid, liquid, gas, shape, volume	P4 boundary: density, particle theory and gas laws are not required
20	1. Identify objects that are sources of light 2. State that a non-luminous object is seen when it reflects light 3. Distinguish a light source from an object that only reflects light 4. Use a ray-path sketch to explain how an object is seen	Recent: P4-W18 to W19; Spaced: P4-W12; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains sources of light and seeing objects accurately using relevant evidence	light, sources, seeing, objects, identify, state, non, luminous, object, seen	P4 boundary: refraction, lenses and quantitative ray calculations are not required
21	1. State that light travels in straight lines 2. Use aligned holes as evidence that light travels straight 3. Predict whether light reaches a screen through a path 4. Correct a diagram showing a bent light path in one medium	Recent: P4-W19 to W20; Spaced: P4-W13; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains light travels in straight lines accurately using relevant evidence	light, travels, straight, lines, state, use, aligned, holes, evidence, predict	P4 boundary: refraction, lenses and quantitative ray calculations are not required
22	1. State that a shadow forms when light is blocked completely or partially 2. Identify light source, object, screen and shadow 3. Predict the position of a shadow 4. Explain shadow formation using straight-line travel of light	Recent: P4-W20 to W21; Spaced: P4-W14; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains shadow formation accurately using relevant evidence	light, shadow, formation, state, forms, when, blocked, completely, partially, identify	P4 boundary: refraction, lenses and quantitative ray calculations are not required
23	1. Relate shadow shape to object shape and orientation 2. Predict how moving an object changes shadow position 3. Compare shadow evidence from two object positions 4. Design a fair comparison of shadow position	Recent: P4-W21 to W22; Spaced: P4-W15; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains shadow shape and object position accurately using relevant evidence	light, shadow, shape, object, position, relate, orientation, predict, how, moving	P4 boundary: refraction, lenses and quantitative ray calculations are not required
24	1. Relate shadow size to source-object distance 2. Relate shadow size to object-screen distance 3. Interpret shadow-size data from a fair test 4. Identify variables to change, measure and keep the same	Recent: P4-W22 to W23; Spaced: P4-W16; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains shadow size variables accurately using relevant evidence	light, shadow, size, variables, relate, source, object, distance, screen, interpret	P4 boundary: refraction, lenses and quantitative ray calculations are not required
25	1. Compare complete and partial blocking of light 2. Infer blocking degree from the shadow formed 3. Choose a material for a required light-blocking purpose using evidence 4. Explain without requiring transparent, translucent or opaque terminology	Recent: P4-W23 to W24; Spaced: P4-W17; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains complete and partial blocking accurately using relevant evidence	light, complete, partial, blocking, compare, infer, degree, shadow, formed, choose	P4 boundary: refraction, lenses and quantitative ray calculations are not required
26	1. Formulate a testable question about shadows 2. Construct a fair shadow investigation 3. Record results in a table or simple graph 4. Evaluate whether the evidence supports the conclusion	Recent: P4-W24 to W25; Spaced: P4-W18; Prerequisite: P3-W11-KP1; P3-W15-KP1	Explains light investigation accurately using relevant evidence	light, investigation, formulate, testable, question, about, shadows, construct, fair, shadow	P4 boundary: refraction, lenses and quantitative ray calculations are not required
27	1. Identify common sources of heat 2. State that heat is a form of energy 3. Distinguish a heat source from an object warmed by it 4. Explain a familiar heating situation using a heat source	Recent: P4-W25 to W26; Spaced: P4-W19; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains heat sources and heat as energy accurately using relevant evidence	heat, sources, energy, identify, common, state, form, distinguish, source, object	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
28	1. State that temperature measures degree of hotness 2. Read a thermometer scale correctly 3. Use a datalogger or temperature sensor reading 4. Distinguish temperature from heat	Recent: P4-W26 to W27; Spaced: P4-W20; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains temperature and measurement accurately using relevant evidence	heat, mastery, measurement, state, measures, degree, hotness, read, thermometer, scale	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
29	1. State that heat flows from hotter to colder regions 2. Predict the direction of heat flow between two objects 3. State that heat flow continues until both reach the same temperature 4. Use temperature data to justify heat-flow direction	Recent: P4-W27 to W28; Spaced: P4-W21; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains direction of heat flow accurately using relevant evidence	heat, direction, flow, state, flows, hotter, colder, regions, predict, between	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
30	1. Relate heat gain to a temperature increase 2. Relate heat loss to a temperature decrease 3. Interpret a temperature-time graph 4. Explain a plateau or change using evidence appropriate to P4	Recent: P4-W28 to W29; Spaced: P4-W22; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains heat gain, heat loss and temperature accurately using relevant evidence	heat, gain, loss, temperature, relate, increase, decrease, interpret, time, graph	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
31	1. State that solids, liquids and gases may expand when heated 2. State that objects may contract when cooled 3. Identify everyday effects of expansion or contraction 4. Use before-and-after evidence to infer heat gain or loss	Recent: P4-W29 to W30; Spaced: P4-W23; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains expansion and contraction accurately using relevant evidence	heat, expansion, contraction, state, solids, liquids, gases, may, expand, when	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
32	1. Recognise melting as an effect of heat gain 2. Recognise freezing as an effect of heat loss 3. Distinguish a change of state from expansion 4. Apply heat gain or loss to an everyday state change	Recent: P4-W30 to W31; Spaced: P4-W24; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains changes of state from heat gain or loss accurately using relevant evidence	heat, changes, state, gain, loss, recognise, melting, effect, freezing, distinguish	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
33	1. Identify metals as generally good conductors of heat 2. Identify wood, plastics, air and rubber as poor conductors of heat 3. Choose a material for a heat-related use 4. Design a fair comparison of heat conduction	Recent: P4-W31 to W32; Spaced: P4-W25; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains conductors of heat accurately using relevant evidence	heat, conductors, identify, metals, generally, good, wood, plastics, air, rubber	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
34	1. Retrieve heat, temperature, flow and material ideas 2. Apply heat ideas to a multi-step everyday context 3. Interpret thermometer, table and graph evidence together 4. Evaluate and improve a heat investigation	Recent: P4-W32 to W33; Spaced: P4-W26; Prerequisite: P3-W11-KP1; P3-W12-KP1	Explains heat mastery and p4 transfer accurately using relevant evidence	heat, mastery, transfer, retrieve, temperature, flow, material, ideas, apply, multi	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5
35	1. Formulate a testable P4 science question 2. Identify changed, measured and controlled variables 3. Choose suitable observations or measurements 4. Evaluate whether a proposed test is fair	Recent: P4-W33 to W34; Spaced: P4-W27; Prerequisite: P3-W10-KP4; P3-W20-KP4	Explains fair-test design accurately using relevant evidence	inquiry, mastery, fair, test, design, formulate, testable, science, question, identify	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms
36	1. Record P4 observations in a clear table 2. Read scales and units accurately 3. Describe a pattern from a bar or line graph 4. Use graph evidence without extending beyond the data	Recent: P4-W34 to W35; Spaced: P4-W28; Prerequisite: P3-W10-KP4; P3-W20-KP4	Explains tables and graphs accurately using relevant evidence	inquiry, mastery, tables, graphs, record, observations, clear, table, read, scales	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms
37	1. Interpret labelled plant, digestive, light or heat diagrams 2. Identify a missing or incorrect model feature 3. Explain why the feature matters scientifically 4. Revise the model using evidence	Recent: P4-W35 to W36; Spaced: P4-W29; Prerequisite: P3-W10-KP4; P3-W20-KP4	Explains diagram and model reasoning accurately using relevant evidence	inquiry, mastery, diagram, model, reasoning, interpret, labelled, plant, digestive, light	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms
38	1. Select the relevant P4 topic for a novel situation 2. Connect two P4 ideas without importing P5 content 3. Support an explanation with observations or data 4. Compare an alternative explanation	Recent: P4-W36 to W37; Spaced: P4-W30; Prerequisite: P3-W10-KP4; P3-W20-KP4	Explains cross-topic application accurately using relevant evidence	inquiry, mastery, cross, topic, application, select, relevant, novel, situation, connect	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms
39	1. Distinguish heat from temperature 2. Distinguish seeing by reflected light from being a light source 3. Distinguish digestion from movement of food 4. Distinguish P4 plant functions from P5 transport details	Recent: P4-W37 to W38; Spaced: P4-W31; Prerequisite: P3-W10-KP4; P3-W20-KP4	Explains misconception repair accurately using relevant evidence	inquiry, mastery, misconception, repair, distinguish, heat, temperature, seeing, reflected, light	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms
40	1. Retrieve all P4 core outcomes 2. Apply P4 knowledge to unfamiliar representations 3. Communicate a complete evidence-based explanation 4. Evaluate and improve a method, model or conclusion	Recent: P4-W38 to W39; Spaced: P4-W32; Prerequisite: P3-W10-KP4; P3-W20-KP4	Explains p4 cumulative mastery accurately using relevant evidence	inquiry, mastery, cumulative, retrieve, all, core, outcomes, apply, knowledge, unfamiliar	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms

3. P4 Atomic KP Register - Atomic KP Content View

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P4-W01-KP1	1	Systems	Plant parts and functions	Plant-system overview	1	Identify root, stem and leaf as main plant parts	Introduce	MOE Explicit Core	Know / Understand
P4-W01-KP2	1	Systems	Plant parts and functions	Plant-system overview	2	State that plant parts work together as a system	Introduce	MOE Explicit Core	Explain / Interpret
P4-W01-KP3	1	Systems	Plant parts and functions	Plant-system overview	3	Match each main plant part to its position on a plant	Introduce	MOE Practice / Application	Apply / Analyse
P4-W01-KP4	1	Systems	Plant parts and functions	Plant-system overview	4	Use a labelled plant diagram to explain how parts support survival	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P4-W02-KP1	2	Systems	Plant parts and functions	Roots	1	Identify roots on familiar plants	Develop	MOE Explicit Core	Know / Understand
P4-W02-KP2	2	Systems	Plant parts and functions	Roots	2	State that roots anchor the plant	Develop	MOE Explicit Core	Explain / Interpret
P4-W02-KP3	2	Systems	Plant parts and functions	Roots	3	State that roots take in water	Develop	MOE Practice / Application	Apply / Analyse
P4-W02-KP4	2	Systems	Plant parts and functions	Roots	4	Use evidence from a root investigation to explain a root function	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W03-KP1	3	Systems	Plant parts and functions	Stems	1	Identify the stem of a plant	Develop	MOE Explicit Core	Know / Understand
P4-W03-KP2	3	Systems	Plant parts and functions	Stems	2	State that the stem supports leaves and flowers	Develop	MOE Explicit Core	Explain / Interpret
P4-W03-KP3	3	Systems	Plant parts and functions	Stems	3	State that the stem connects roots and leaves	Develop	MOE Practice / Application	Apply / Analyse
P4-W03-KP4	3	Systems	Plant parts and functions	Stems	4	Predict a plant consequence when its stem is badly damaged	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W04-KP1	4	Systems	Plant parts and functions	Leaves	1	Identify leaves as plant parts	Develop	MOE Explicit Core	Know / Understand
P4-W04-KP2	4	Systems	Plant parts and functions	Leaves	2	State that leaves make food for the plant	Develop	MOE Explicit Core	Explain / Interpret
P4-W04-KP3	4	Systems	Plant parts and functions	Leaves	3	Relate leaf position to receiving light	Develop	MOE Practice / Application	Apply / Analyse
P4-W04-KP4	4	Systems	Plant parts and functions	Leaves	4	Use observations to infer whether a leaf is functioning normally	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W05-KP1	5	Systems	Plant parts and functions	Plant-part comparison	1	Compare roots, stems and leaves by observable features	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W05-KP2	5	Systems	Plant parts and functions	Plant-part comparison	2	Compare the functions of roots, stems and leaves	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W05-KP3	5	Systems	Plant parts and functions	Plant-part comparison	3	Classify a shown plant structure by its function	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W05-KP4	5	Systems	Plant parts and functions	Plant-part comparison	4	Correct a plant-parts model using observable evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W06-KP1	6	Systems	Plant parts and functions	Whole-plant application	1	Explain how roots and stems support an upright plant	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W06-KP2	6	Systems	Plant parts and functions	Whole-plant application	2	Explain why leaves depend on other plant parts	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W06-KP3	6	Systems	Plant parts and functions	Whole-plant application	3	Trace a simple water path from surroundings to leaves without naming tubes	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W06-KP4	6	Systems	Plant parts and functions	Whole-plant application	4	Evaluate a claim that one plant part can work independently	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W07-KP1	7	Systems	Plant parts and functions	Plant observation investigation	1	Make a labelled drawing of observable plant parts	Master / Transfer	MOE Explicit Core	Know / Understand
P4-W07-KP2	7	Systems	Plant parts and functions	Plant observation investigation	2	Record changes in a plant consistently over time	Master / Transfer	MOE Explicit Core	Explain / Interpret
P4-W07-KP3	7	Systems	Plant parts and functions	Plant observation investigation	3	Identify one variable to keep the same in a plant comparison	Master / Transfer	MOE Practice / Application	Apply / Analyse
P4-W07-KP4	7	Systems	Plant parts and functions	Plant observation investigation	4	Use recorded evidence to support a conclusion	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P4-W08-KP1	8	Systems	Human digestive system	Overview of human body systems	1	Identify digestive, respiratory, circulatory, skeletal and muscular systems	Introduce	MOE Explicit Core	Know / Understand
P4-W08-KP2	8	Systems	Human digestive system	Overview of human body systems	2	State one broad function of each named human system	Introduce	MOE Explicit Core	Explain / Interpret
P4-W08-KP3	8	Systems	Human digestive system	Overview of human body systems	3	Distinguish a body system from a single organ	Introduce	MOE Practice / Application	Apply / Analyse
P4-W08-KP4	8	Systems	Human digestive system	Overview of human body systems	4	Match familiar activities to the systems involved	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P4-W09-KP1	9	Systems	Human digestive system	Digestive-system pathway	1	Identify mouth, gullet, stomach, small intestine and large intestine	Develop	MOE Explicit Core	Know / Understand
P4-W09-KP2	9	Systems	Human digestive system	Digestive-system pathway	2	Arrange digestive parts in the correct pathway	Develop	MOE Explicit Core	Explain / Interpret
P4-W09-KP3	9	Systems	Human digestive system	Digestive-system pathway	3	Trace food through the digestive system	Develop	MOE Practice / Application	Apply / Analyse
P4-W09-KP4	9	Systems	Human digestive system	Digestive-system pathway	4	Correct an incorrectly ordered digestive-system diagram	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W10-KP1	10	Systems	Human digestive system	Mouth and gullet	1	State that digestion begins in the mouth	Develop	MOE Explicit Core	Know / Understand
P4-W10-KP2	10	Systems	Human digestive system	Mouth and gullet	2	State that the gullet carries food to the stomach	Develop	MOE Explicit Core	Explain / Interpret
P4-W10-KP3	10	Systems	Human digestive system	Mouth and gullet	3	Distinguish movement through the gullet from digestion in the mouth	Develop	MOE Practice / Application	Apply / Analyse
P4-W10-KP4	10	Systems	Human digestive system	Mouth and gullet	4	Use a diagram to explain what happens before food reaches the stomach	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W11-KP1	11	Systems	Human digestive system	Stomach	1	Identify the stomach in a body diagram	Develop	MOE Explicit Core	Know / Understand
P4-W11-KP2	11	Systems	Human digestive system	Stomach	2	State the role of the stomach in digestion	Develop	MOE Explicit Core	Explain / Interpret
P4-W11-KP3	11	Systems	Human digestive system	Stomach	3	Distinguish the stomach from the small intestine	Develop	MOE Practice / Application	Apply / Analyse
P4-W11-KP4	11	Systems	Human digestive system	Stomach	4	Predict the next organ food enters after the stomach	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W12-KP1	12	Systems	Human digestive system	Small intestine	1	Identify the small intestine	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W12-KP2	12	Systems	Human digestive system	Small intestine	2	State that digestion is completed in the small intestine	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W12-KP3	12	Systems	Human digestive system	Small intestine	3	State that digested food is absorbed in the small intestine	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W12-KP4	12	Systems	Human digestive system	Small intestine	4	Use evidence to explain why the small intestine is important	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W13-KP1	13	Systems	Human digestive system	Large intestine	1	Identify the large intestine	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W13-KP2	13	Systems	Human digestive system	Large intestine	2	State that water is absorbed from undigested food in the large intestine	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W13-KP3	13	Systems	Human digestive system	Large intestine	3	Distinguish small-intestine and large-intestine functions	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W13-KP4	13	Systems	Human digestive system	Large intestine	4	Interpret a digestive-system model with one missing function	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W14-KP1	14	Systems	Human digestive system	Integrated digestion	1	Explain why digestion requires several connected parts	Master / Transfer	MOE Explicit Core	Know / Understand
P4-W14-KP2	14	Systems	Human digestive system	Integrated digestion	2	Trace food and state the main function at each stage	Master / Transfer	MOE Explicit Core	Explain / Interpret
P4-W14-KP3	14	Systems	Human digestive system	Integrated digestion	3	Compare two digestive-system diagrams for accuracy	Master / Transfer	MOE Practice / Application	Apply / Analyse
P4-W14-KP4	14	Systems	Human digestive system	Integrated digestion	4	Evaluate a claim that digestion happens only in the stomach	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P4-W15-KP1	15	Cycles	Matter	What is matter	1	State that matter is anything that has mass and occupies space	Introduce	MOE Explicit Core	Know / Understand
P4-W15-KP2	15	Cycles	Matter	What is matter	2	Use evidence of mass and occupied space to decide whether something is matter	Introduce	MOE Explicit Core	Explain / Interpret
P4-W15-KP3	15	Cycles	Matter	What is matter	3	Recognise solids, liquids and gases as matter	Introduce	MOE Practice / Application	Apply / Analyse
P4-W15-KP4	15	Cycles	Matter	What is matter	4	Reject the claim that gases are not matter because they cannot always be seen	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P4-W16-KP1	16	Cycles	Matter	Solids, liquids and gases	1	State that a solid has a fixed shape and fixed volume	Develop	MOE Explicit Core	Know / Understand
P4-W16-KP2	16	Cycles	Matter	Solids, liquids and gases	2	State that a liquid has no fixed shape but has fixed volume	Develop	MOE Explicit Core	Explain / Interpret
P4-W16-KP3	16	Cycles	Matter	Solids, liquids and gases	3	State that a gas has no fixed shape and no fixed volume	Develop	MOE Practice / Application	Apply / Analyse
P4-W16-KP4	16	Cycles	Matter	Solids, liquids and gases	4	Compare the three states using a shape-and-volume table	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W17-KP1	17	Cycles	Matter	Measuring mass	1	Select an appropriate balance for measuring mass	Develop	MOE Explicit Core	Know / Understand
P4-W17-KP2	17	Cycles	Matter	Measuring mass	2	Read a mass scale with the correct unit	Develop	MOE Explicit Core	Explain / Interpret
P4-W17-KP3	17	Cycles	Matter	Measuring mass	3	Record mass measurements consistently	Develop	MOE Practice / Application	Apply / Analyse

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P4-W17-KP4	17	Cycles	Matter	Measuring mass	4	Evaluate whether a mass measurement method is suitable	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W18-KP1	18	Cycles	Matter	Measuring volume	1	Select a measuring cylinder or suitable apparatus for volume	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W18-KP2	18	Cycles	Matter	Measuring volume	2	Read liquid volume at the correct scale position	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W18-KP3	18	Cycles	Matter	Measuring volume	3	Determine volume of a regular or displaced object using provided apparatus at P4 level	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W18-KP4	18	Cycles	Matter	Measuring volume	4	Evaluate a volume-measurement setup and suggest one improvement	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W19-KP1	19	Cycles	Matter	Matter mastery	1	Classify unfamiliar examples as solid, liquid or gas using shape and volume	Master / Transfer	MOE Explicit Core	Know / Understand
P4-W19-KP2	19	Cycles	Matter	Matter mastery	2	Interpret mass and volume data without using density	Master / Transfer	MOE Explicit Core	Explain / Interpret
P4-W19-KP3	19	Cycles	Matter	Matter mastery	3	Correct a model that confuses amount, mass and volume	Master / Transfer	MOE Practice / Application	Apply / Analyse
P4-W19-KP4	19	Cycles	Matter	Matter mastery	4	Construct an evidence-based explanation that something is matter	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P4-W20-KP1	20	Energy	Light	Sources of light and seeing objects	1	Identify objects that are sources of light	Introduce	MOE Explicit Core	Know / Understand
P4-W20-KP2	20	Energy	Light	Sources of light and seeing objects	2	State that a non-luminous object is seen when it reflects light	Introduce	MOE Explicit Core	Explain / Interpret
P4-W20-KP3	20	Energy	Light	Sources of light and seeing objects	3	Distinguish a light source from an object that only reflects light	Introduce	MOE Practice / Application	Apply / Analyse
P4-W20-KP4	20	Energy	Light	Sources of light and seeing objects	4	Use a ray-path sketch to explain how an object is seen	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P4-W21-KP1	21	Energy	Light	Light travels in straight lines	1	State that light travels in straight lines	Develop	MOE Explicit Core	Know / Understand
P4-W21-KP2	21	Energy	Light	Light travels in straight lines	2	Use aligned holes as evidence that light travels straight	Develop	MOE Explicit Core	Explain / Interpret
P4-W21-KP3	21	Energy	Light	Light travels in straight lines	3	Predict whether light reaches a screen through a path	Develop	MOE Practice / Application	Apply / Analyse
P4-W21-KP4	21	Energy	Light	Light travels in straight lines	4	Correct a diagram showing a bent light path in one medium	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W22-KP1	22	Energy	Light	Shadow formation	1	State that a shadow forms when light is blocked completely or partially	Develop	MOE Explicit Core	Know / Understand
P4-W22-KP2	22	Energy	Light	Shadow formation	2	Identify light source, object, screen and shadow	Develop	MOE Explicit Core	Explain / Interpret
P4-W22-KP3	22	Energy	Light	Shadow formation	3	Predict the position of a shadow	Develop	MOE Practice / Application	Apply / Analyse
P4-W22-KP4	22	Energy	Light	Shadow formation	4	Explain shadow formation using straight-line travel of light	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W23-KP1	23	Energy	Light	Shadow shape and object position	1	Relate shadow shape to object shape and orientation	Develop	MOE Explicit Core	Know / Understand
P4-W23-KP2	23	Energy	Light	Shadow shape and object position	2	Predict how moving an object changes shadow position	Develop	MOE Explicit Core	Explain / Interpret
P4-W23-KP3	23	Energy	Light	Shadow shape and object position	3	Compare shadow evidence from two object positions	Develop	MOE Practice / Application	Apply / Analyse
P4-W23-KP4	23	Energy	Light	Shadow shape and object position	4	Design a fair comparison of shadow position	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W24-KP1	24	Energy	Light	Shadow size variables	1	Relate shadow size to source-object distance	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W24-KP2	24	Energy	Light	Shadow size variables	2	Relate shadow size to object-screen distance	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W24-KP3	24	Energy	Light	Shadow size variables	3	Interpret shadow-size data from a fair test	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W24-KP4	24	Energy	Light	Shadow size variables	4	Identify variables to change, measure and keep the same	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W25-KP1	25	Energy	Light	Complete and partial blocking	1	Compare complete and partial blocking of light	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W25-KP2	25	Energy	Light	Complete and partial blocking	2	Infer blocking degree from the shadow formed	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W25-KP3	25	Energy	Light	Complete and partial blocking	3	Choose a material for a required light-blocking purpose using evidence	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W25-KP4	25	Energy	Light	Complete and partial blocking	4	Explain without requiring transparent, translucent or opaque terminology	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W26-KP1	26	Energy	Light	Light investigation	1	Formulate a testable question about shadows	Master / Transfer	MOE Explicit Core	Know / Understand
P4-W26-KP2	26	Energy	Light	Light investigation	2	Construct a fair shadow investigation	Master / Transfer	MOE Explicit Core	Explain / Interpret
P4-W26-KP3	26	Energy	Light	Light investigation	3	Record results in a table or simple graph	Master / Transfer	MOE Practice / Application	Apply / Analyse
P4-W26-KP4	26	Energy	Light	Light investigation	4	Evaluate whether the evidence supports the conclusion	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P4-W27-KP1	27	Energy	Heat	Heat sources and heat as energy	1	Identify common sources of heat	Introduce	MOE Explicit Core	Know / Understand
P4-W27-KP2	27	Energy	Heat	Heat sources and heat as energy	2	State that heat is a form of energy	Introduce	MOE Explicit Core	Explain / Interpret
P4-W27-KP3	27	Energy	Heat	Heat sources and heat as energy	3	Distinguish a heat source from an object warmed by it	Introduce	MOE Practice / Application	Apply / Analyse
P4-W27-KP4	27	Energy	Heat	Heat sources and heat as energy	4	Explain a familiar heating situation using a heat source	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P4-W28-KP1	28	Energy	Heat	Temperature and measurement	1	State that temperature measures degree of hotness	Develop	MOE Explicit Core	Know / Understand
P4-W28-KP2	28	Energy	Heat	Temperature and measurement	2	Read a thermometer scale correctly	Develop	MOE Explicit Core	Explain / Interpret
P4-W28-KP3	28	Energy	Heat	Temperature and measurement	3	Use a datalogger or temperature sensor reading	Develop	MOE Practice / Application	Apply / Analyse
P4-W28-KP4	28	Energy	Heat	Temperature and measurement	4	Distinguish temperature from heat	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W29-KP1	29	Energy	Heat	Direction of heat flow	1	State that heat flows from hotter to colder regions	Develop	MOE Explicit Core	Know / Understand
P4-W29-KP2	29	Energy	Heat	Direction of heat flow	2	Predict the direction of heat flow between two objects	Develop	MOE Explicit Core	Explain / Interpret
P4-W29-KP3	29	Energy	Heat	Direction of heat flow	3	State that heat flow continues until both reach the same temperature	Develop	MOE Practice / Application	Apply / Analyse
P4-W29-KP4	29	Energy	Heat	Direction of heat flow	4	Use temperature data to justify heat-flow direction	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W30-KP1	30	Energy	Heat	Heat gain, heat loss and temperature	1	Relate heat gain to a temperature increase	Develop	MOE Explicit Core	Know / Understand
P4-W30-KP2	30	Energy	Heat	Heat gain, heat loss and temperature	2	Relate heat loss to a temperature decrease	Develop	MOE Explicit Core	Explain / Interpret
P4-W30-KP3	30	Energy	Heat	Heat gain, heat loss and temperature	3	Interpret a temperature-time graph	Develop	MOE Practice / Application	Apply / Analyse
P4-W30-KP4	30	Energy	Heat	Heat gain, heat loss and temperature	4	Explain a plateau or change using evidence appropriate to P4	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W31-KP1	31	Energy	Heat	Expansion and contraction	1	State that solids, liquids and gases may expand when heated	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W31-KP2	31	Energy	Heat	Expansion and contraction	2	State that objects may contract when cooled	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W31-KP3	31	Energy	Heat	Expansion and contraction	3	Identify everyday effects of expansion or contraction	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W31-KP4	31	Energy	Heat	Expansion and contraction	4	Use before-and-after evidence to infer heat gain or loss	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W32-KP1	32	Energy	Heat	Changes of state from heat gain or loss	1	Recognise melting as an effect of heat gain	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W32-KP2	32	Energy	Heat	Changes of state from heat gain or loss	2	Recognise freezing as an effect of heat loss	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W32-KP3	32	Energy	Heat	Changes of state from heat gain or loss	3	Distinguish a change of state from expansion	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W32-KP4	32	Energy	Heat	Changes of state from heat gain or loss	4	Apply heat gain or loss to an everyday state change	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W33-KP1	33	Energy	Heat	Conductors of heat	1	Identify metals as generally good conductors of heat	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W33-KP2	33	Energy	Heat	Conductors of heat	2	Identify wood, plastics, air and rubber as poor conductors of heat	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W33-KP3	33	Energy	Heat	Conductors of heat	3	Choose a material for a heat-related use	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W33-KP4	33	Energy	Heat	Conductors of heat	4	Design a fair comparison of heat conduction	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W34-KP1	34	Energy	Heat	Heat mastery and P4 transfer	1	Retrieve heat, temperature, flow and material ideas	Master / Transfer	MOE Explicit Core	Know / Understand
P4-W34-KP2	34	Energy	Heat	Heat mastery and P4 transfer	2	Apply heat ideas to a multi-step everyday context	Master / Transfer	MOE Explicit Core	Explain / Interpret
P4-W34-KP3	34	Energy	Heat	Heat mastery and P4 transfer	3	Interpret thermometer, table and graph evidence together	Master / Transfer	MOE Practice / Application	Apply / Analyse
P4-W34-KP4	34	Energy	Heat	Heat mastery and P4 transfer	4	Evaluate and improve a heat investigation	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P4-W35-KP1	35	Integration	P4 inquiry and mastery	Fair-test design	1	Formulate a testable P4 science question	Introduce	MOE Explicit Core	Know / Understand

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P4-W35-KP2	35	Integration	P4 inquiry and mastery	Fair-test design	2	Identify changed, measured and controlled variables	Introduce	MOE Explicit Core	Explain / Interpret
P4-W35-KP3	35	Integration	P4 inquiry and mastery	Fair-test design	3	Choose suitable observations or measurements	Introduce	MOE Practice / Application	Apply / Analyse
P4-W35-KP4	35	Integration	P4 inquiry and mastery	Fair-test design	4	Evaluate whether a proposed test is fair	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P4-W36-KP1	36	Integration	P4 inquiry and mastery	Tables and graphs	1	Record P4 observations in a clear table	Develop	MOE Explicit Core	Know / Understand
P4-W36-KP2	36	Integration	P4 inquiry and mastery	Tables and graphs	2	Read scales and units accurately	Develop	MOE Explicit Core	Explain / Interpret
P4-W36-KP3	36	Integration	P4 inquiry and mastery	Tables and graphs	3	Describe a pattern from a bar or line graph	Develop	MOE Practice / Application	Apply / Analyse
P4-W36-KP4	36	Integration	P4 inquiry and mastery	Tables and graphs	4	Use graph evidence without extending beyond the data	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W37-KP1	37	Integration	P4 inquiry and mastery	Diagram and model reasoning	1	Interpret labelled plant, digestive, light or heat diagrams	Develop	MOE Explicit Core	Know / Understand
P4-W37-KP2	37	Integration	P4 inquiry and mastery	Diagram and model reasoning	2	Identify a missing or incorrect model feature	Develop	MOE Explicit Core	Explain / Interpret
P4-W37-KP3	37	Integration	P4 inquiry and mastery	Diagram and model reasoning	3	Explain why the feature matters scientifically	Develop	MOE Practice / Application	Apply / Analyse
P4-W37-KP4	37	Integration	P4 inquiry and mastery	Diagram and model reasoning	4	Revise the model using evidence	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P4-W38-KP1	38	Integration	P4 inquiry and mastery	Cross-topic application	1	Select the relevant P4 topic for a novel situation	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W38-KP2	38	Integration	P4 inquiry and mastery	Cross-topic application	2	Connect two P4 ideas without importing P5 content	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W38-KP3	38	Integration	P4 inquiry and mastery	Cross-topic application	3	Support an explanation with observations or data	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W38-KP4	38	Integration	P4 inquiry and mastery	Cross-topic application	4	Compare an alternative explanation	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W39-KP1	39	Integration	P4 inquiry and mastery	Misconception repair	1	Distinguish heat from temperature	Apply / Consolidate	MOE Explicit Core	Know / Understand
P4-W39-KP2	39	Integration	P4 inquiry and mastery	Misconception repair	2	Distinguish seeing by reflected light from being a light source	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P4-W39-KP3	39	Integration	P4 inquiry and mastery	Misconception repair	3	Distinguish digestion from movement of food	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P4-W39-KP4	39	Integration	P4 inquiry and mastery	Misconception repair	4	Distinguish P4 plant functions from P5 transport details	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P4-W40-KP1	40	Integration	P4 inquiry and mastery	P4 cumulative mastery	1	Retrieve all P4 core outcomes	Master / Transfer	MOE Explicit Core	Know / Understand
P4-W40-KP2	40	Integration	P4 inquiry and mastery	P4 cumulative mastery	2	Apply P4 knowledge to unfamiliar representations	Master / Transfer	MOE Explicit Core	Explain / Interpret
P4-W40-KP3	40	Integration	P4 inquiry and mastery	P4 cumulative mastery	3	Communicate a complete evidence-based explanation	Master / Transfer	MOE Practice / Application	Apply / Analyse
P4-W40-KP4	40	Integration	P4 inquiry and mastery	P4 cumulative mastery	4	Evaluate and improve a method, model or conclusion	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve

3. P4 Atomic KP Register - Assessment, Retrieval and Scope View

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P4-W01-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: none; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately identify root, stem and leaf as main plant parts, using relevant observation, data or model evidence	plant, parts, functions, system, overview, identify, root, stem, leaf, main	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W01-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: none; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately state that plant parts work together as a system, using relevant observation, data or model evidence	plant, parts, functions, system, overview, state, work, together	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W01-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: none; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately match each main plant part to its position on a plant, using relevant observation, data or model evidence	plant, parts, functions, system, overview, match, each, main, part, its	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W01-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: none; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately use a labelled plant diagram to explain how parts support survival, using relevant observation, data or model evidence	plant, parts, functions, system, overview, use, labelled, diagram, explain, how	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W02-KP1	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Short response	Recent: P4-W01 to W01; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately identify roots on familiar plants, using relevant observation, data or model evidence	plant, parts, functions, roots, identify, familiar, plants	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W02-KP2	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P4-W01 to W01; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately state that roots anchor the plant, using relevant observation, data or model evidence	plant, parts, functions, roots, state, anchor	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W02-KP3	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P4-W01 to W01; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately state that roots take in water, using relevant observation, data or model evidence	plant, parts, functions, roots, state, take, water	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W02-KP4	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P4-W01 to W01; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately use evidence from a root investigation to explain a root function, using relevant observation, data or model evidence	plant, parts, functions, roots, use, evidence, root, investigation, explain, function	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W03-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P4-W01 to W02; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately identify the stem of a plant, using relevant observation, data or model evidence	plant, parts, functions, stems, identify, stem	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W03-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P4-W01 to W02; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately state that the stem supports leaves and flowers, using relevant observation, data or model evidence	plant, parts, functions, stems, state, stem, supports, leaves, flowers	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W03-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P4-W01 to W02; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately state that the stem connects roots and leaves, using relevant observation, data or model evidence	plant, parts, functions, stems, state, stem, connects, roots, leaves	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W03-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P4-W01 to W02; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately predict a plant consequence when its stem is badly damaged, using relevant observation, data or model evidence	plant, parts, functions, stems, predict, consequence, when, its, stem, badly	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W04-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P4-W02 to W03; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately identify leaves as plant parts, using relevant observation, data or model evidence	plant, parts, functions, leaves, identify	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W04-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P4-W02 to W03; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately state that leaves make food for the plant, using relevant observation, data or model evidence	plant, parts, functions, leaves, state, make, food	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W04-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P4-W02 to W03; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately relate leaf position to receiving light, using relevant observation, data or model evidence	plant, parts, functions, leaves, relate, leaf, position, receiving, light	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W04-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P4-W02 to W03; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately use observations to infer whether a leaf is functioning normally, using relevant observation, data or model evidence	plant, parts, functions, leaves, use, observations, infer, whether, leaf, functioning	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W05-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P4-W03 to W04; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately compare roots, stems and leaves by observable features, using relevant observation, data or model evidence	plant, parts, functions, part, comparison, compare, roots, stems, leaves, observable	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W05-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P4-W03 to W04; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately compare the functions of roots, stems and leaves, using relevant observation, data or model evidence	plant, parts, functions, part, comparison, compare, roots, stems, leaves	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W05-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P4-W03 to W04; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately classify a shown plant structure by its function, using relevant observation, data or model evidence	plant, parts, functions, part, comparison, classify, shown, structure, its, function	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W05-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P4-W03 to W04; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately correct a plant-parts model using observable evidence, using relevant observation, data or model evidence	plant, parts, functions, part, comparison, correct, model, observable, evidence	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W06-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P4-W04 to W05; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately explain how roots and stems support an upright plant, using relevant observation, data or model evidence	plant, parts, functions, whole, application, explain, how, roots, stems, support	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W06-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P4-W04 to W05; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately explain why leaves depend on other plant parts, using relevant observation, data or model evidence	plant, parts, functions, whole, application, explain, why, leaves, depend, other	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W06-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P4-W04 to W05; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately trace a simple water path from surroundings to leaves without naming tubes, using relevant observation, data or model evidence	plant, parts, functions, whole, application, trace, simple, water, path, surroundings	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W06-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P4-W04 to W05; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately evaluate a claim that one plant part can work independently, using relevant observation, data or model evidence	plant, parts, functions, whole, application, evaluate, claim, one, part, can	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W07-KP1	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Short response	Recent: P4-W05 to W06; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately make a labelled drawing of observable plant parts, using relevant observation, data or model evidence	plant, parts, functions, observation, investigation, make, labelled, drawing, observable	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W07-KP2	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P4-W05 to W06; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately record changes in a plant consistently over time, using relevant observation, data or model evidence	plant, parts, functions, observation, investigation, record, changes, consistently, over, time	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W07-KP3	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P4-W05 to W06; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately identify one variable to keep the same in a plant comparison, using relevant observation, data or model evidence	plant, parts, functions, observation, investigation, identify, one, variable, keep, same	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W07-KP4	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P4-W05 to W06; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Accurately use recorded evidence to support a conclusion, using relevant observation, data or model evidence	plant, parts, functions, observation, investigation, use, recorded, evidence, support, conclusion	P4 boundary: food-/water-carrying tubes, xylem, phloem and photosynthesis requirements are later learning	Verified against V7 compliance register
P4-W08-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W06 to W07; Spaced: first-term build; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately identify digestive, respiratory, circulatory, skeletal and muscular systems, using relevant observation, data or model evidence	human, digestive, system, overview, body, systems, identify, respiratory, circulatory, skeletal	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W08-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W06 to W07; Spaced: first-term build; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state one broad function of each named human system, using relevant observation, data or model evidence	human, digestive, system, overview, body, systems, state, one, broad, function	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P4-W08-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W06 to W07; Spaced: first-term build; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately distinguish a body system from a single organ, using relevant observation, data or model evidence	human, digestive, system, overview, body, systems, distinguish, single, organ	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W08-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W06 to W07; Spaced: first-term build; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately match familiar activities to the systems involved, using relevant observation, data or model evidence	human, digestive, system, overview, body, systems, match, familiar, activities, involved	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W09-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W07 to W08; Spaced: P4-W01; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately identify mouth, gullet, stomach, small intestine and large intestine, using relevant observation, data or model evidence	human, digestive, system, pathway, identify, mouth, gullet, stomach, small, intestine	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W09-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W07 to W08; Spaced: P4-W01; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately arrange digestive parts in the correct pathway, using relevant observation, data or model evidence	human, digestive, system, pathway, arrange, parts, correct	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W09-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W07 to W08; Spaced: P4-W01; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately trace food through the digestive system, using relevant observation, data or model evidence	human, digestive, system, pathway, trace, food, through	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W09-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W07 to W08; Spaced: P4-W01; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately correct an incorrectly ordered digestive-system diagram, using relevant observation, data or model evidence	human, digestive, system, pathway, correct, incorrectly, ordered, diagram	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W10-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W08 to W09; Spaced: P4-W02; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state that digestion begins in the mouth, using relevant observation, data or model evidence	human, digestive, system, mouth, gullet, state, digestion, begins	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W10-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W08 to W09; Spaced: P4-W02; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state that the gullet carries food to the stomach, using relevant observation, data or model evidence	human, digestive, system, mouth, gullet, state, carries, food, stomach	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W10-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W08 to W09; Spaced: P4-W02; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately distinguish movement through the gullet from digestion in the mouth, using relevant observation, data or model evidence	human, digestive, system, mouth, gullet, distinguish, movement, through, digestion	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W10-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W08 to W09; Spaced: P4-W02; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately use a diagram to explain what happens before food reaches the stomach, using relevant observation, data or model evidence	human, digestive, system, mouth, gullet, use, diagram, explain, what, happens	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W11-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W09 to W10; Spaced: P4-W03; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately identify the stomach in a body diagram, using relevant observation, data or model evidence	human, digestive, system, stomach, identify, body, diagram	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W11-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W09 to W10; Spaced: P4-W03; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state the role of the stomach in digestion, using relevant observation, data or model evidence	human, digestive, system, stomach, state, role, digestion	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W11-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W09 to W10; Spaced: P4-W03; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately distinguish the stomach from the small intestine, using relevant observation, data or model evidence	human, digestive, system, stomach, distinguish, small, intestine	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W11-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W09 to W10; Spaced: P4-W03; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately predict the next organ food enters after the stomach, using relevant observation, data or model evidence	human, digestive, system, stomach, predict, next, organ, food, enters, after	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W12-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W10 to W11; Spaced: P4-W04; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately identify the small intestine, using relevant observation, data or model evidence	human, digestive, system, small, intestine, identify	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W12-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W10 to W11; Spaced: P4-W04; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state that digestion is completed in the small intestine, using relevant observation, data or model evidence	human, digestive, system, small, intestine, state, digestion, completed	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W12-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W10 to W11; Spaced: P4-W04; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state that digested food is absorbed in the small intestine, using relevant observation, data or model evidence	human, digestive, system, small, intestine, state, digested, food, absorbed	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W12-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W10 to W11; Spaced: P4-W04; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately use evidence to explain why the small intestine is important, using relevant observation, data or model evidence	human, digestive, system, small, intestine, use, evidence, explain, why, important	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W13-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W11 to W12; Spaced: P4-W05; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately identify the large intestine, using relevant observation, data or model evidence	human, digestive, system, large, intestine, identify	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W13-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W11 to W12; Spaced: P4-W05; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately state that water is absorbed from undigested food in the large intestine, using relevant observation, data or model evidence	human, digestive, system, large, intestine, state, water, absorbed, undigested, food	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W13-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W11 to W12; Spaced: P4-W05; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately distinguish small-intestine and large-intestine functions, using relevant observation, data or model evidence	human, digestive, system, large, intestine, distinguish, small, functions	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W13-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W11 to W12; Spaced: P4-W05; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately interpret a digestive-system model with one missing function, using relevant observation, data or model evidence	human, digestive, system, large, intestine, interpret, model, one, missing, function	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W14-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W12 to W13; Spaced: P4-W06; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately explain why digestion requires several connected parts, using relevant observation, data or model evidence	human, digestive, system, integrated, digestion, explain, why, requires, several, connected	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W14-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W12 to W13; Spaced: P4-W06; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately trace food and state the main function at each stage, using relevant observation, data or model evidence	human, digestive, system, integrated, digestion, trace, food, state, main, function	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W14-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W12 to W13; Spaced: P4-W06; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately compare two digestive-system diagrams for accuracy, using relevant observation, data or model evidence	human, digestive, system, integrated, digestion, compare, two, diagrams, accuracy	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W14-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W12 to W13; Spaced: P4-W06; Prerequisite: P3-W02-KP2; P3-W03-KP2	Accurately evaluate a claim that digestion happens only in the stomach, using relevant observation, data or model evidence	human, digestive, system, integrated, digestion, evaluate, claim, happens, only, stomach	P4 boundary: detailed enzymes, villi and biochemical digestion are not required	Verified against V7 compliance register
P4-W15-KP1	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Short response	Recent: P4-W13 to W14; Spaced: P4-W07; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately state that matter is anything that has mass and occupies space, using relevant observation, data or model evidence	matter, what, state, anything, has, mass, occupies, space	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W15-KP2	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Diagram / table / graph response	Recent: P4-W13 to W14; Spaced: P4-W07; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately use evidence of mass and occupied space to decide whether something is matter, using relevant observation, data or model evidence	matter, what, use, evidence, mass, occupied, space, decide, whether, something	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W15-KP3	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Constructed explanation	Recent: P4-W13 to W14; Spaced: P4-W07; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately recognise solids, liquids and gases as matter, using relevant observation, data or model evidence	matter, what, recognise, solids, liquids, gases	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W15-KP4	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Method / model critique	Recent: P4-W13 to W14; Spaced: P4-W07; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately reject the claim that gases are not matter because they cannot always be seen, using relevant observation, data or model evidence	matter, what, reject, claim, gases, not, because, they, cannot, always	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W16-KP1	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Short response	Recent: P4-W14 to W15; Spaced: P4-W08; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately state that a solid has a fixed shape and fixed volume, using relevant observation, data or model evidence	matter, solids, liquids, gases, state, solid, has, fixed, shape, volume	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P4-W16-KP2	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Diagram / table / graph response	Recent: P4-W14 to W15; Spaced: P4-W08; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately state that a liquid has no fixed shape but has fixed volume, using relevant observation, data or model evidence	matter, solids, liquids, gases, state, liquid, has, fixed, shape, but	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W16-KP3	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Constructed explanation	Recent: P4-W14 to W15; Spaced: P4-W08; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately state that a gas has no fixed shape and no fixed volume, using relevant observation, data or model evidence	matter, solids, liquids, gases, state, gas, has, fixed, shape, volume	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W16-KP4	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Method / model critique	Recent: P4-W14 to W15; Spaced: P4-W08; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately compare the three states using a shape-and-volume table, using relevant observation, data or model evidence	matter, solids, liquids, gases, compare, three, states, shape, volume, table	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W17-KP1	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Short response	Recent: P4-W15 to W16; Spaced: P4-W09; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately select an appropriate balance for measuring mass, using relevant observation, data or model evidence	matter, measuring, mass, select, appropriate, balance	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W17-KP2	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Diagram / table / graph response	Recent: P4-W15 to W16; Spaced: P4-W09; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately read a mass scale with the correct unit, using relevant observation, data or model evidence	matter, measuring, mass, read, scale, correct, unit	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W17-KP3	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Constructed explanation	Recent: P4-W15 to W16; Spaced: P4-W09; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately record mass measurements consistently, using relevant observation, data or model evidence	matter, measuring, mass, record, measurements, consistently	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W17-KP4	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Method / model critique	Recent: P4-W15 to W16; Spaced: P4-W09; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately evaluate whether a mass measurement method is suitable, using relevant observation, data or model evidence	matter, measuring, mass, evaluate, whether, measurement, method, suitable	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W18-KP1	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Short response	Recent: P4-W16 to W17; Spaced: P4-W10; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately select a measuring cylinder or suitable apparatus for volume, using relevant observation, data or model evidence	matter, measuring, volume, select, cylinder, suitable, apparatus	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W18-KP2	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Diagram / table / graph response	Recent: P4-W16 to W17; Spaced: P4-W10; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately read liquid volume at the correct scale position, using relevant observation, data or model evidence	matter, measuring, volume, read, liquid, correct, scale, position	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W18-KP3	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Constructed explanation	Recent: P4-W16 to W17; Spaced: P4-W10; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately determine volume of a regular or displaced object using provided apparatus at P4 level, using relevant observation, data or model evidence	matter, measuring, volume, determine, regular, displaced, object, provided, apparatus, level	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W18-KP4	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Method / model critique	Recent: P4-W16 to W17; Spaced: P4-W10; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately evaluate a volume-measurement setup and suggest one improvement, using relevant observation, data or model evidence	matter, measuring, volume, evaluate, measurement, setup, suggest, one, improvement	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W19-KP1	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Short response	Recent: P4-W17 to W18; Spaced: P4-W11; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately classify unfamiliar examples as solid, liquid or gas using shape and volume, using relevant observation, data or model evidence	matter, mastery, classify, unfamiliar, examples, solid, liquid, gas, shape, volume	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W19-KP2	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Diagram / table / graph response	Recent: P4-W17 to W18; Spaced: P4-W11; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately interpret mass and volume data without using density, using relevant observation, data or model evidence	matter, mastery, interpret, mass, volume, data, without, density	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W19-KP3	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Constructed explanation	Recent: P4-W17 to W18; Spaced: P4-W11; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately correct a model that confuses amount, mass and volume, using relevant observation, data or model evidence	matter, mastery, correct, model, confuses, amount, mass, volume	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W19-KP4	Observe; measure; compare; interpret; evaluate	Curiosity; objectivity	Method / model critique	Recent: P4-W17 to W18; Spaced: P4-W11; Prerequisite: P3-W11-KP1; P3-W16-KP1	Accurately construct an evidence-based explanation that something is matter, using relevant observation, data or model evidence	matter, mastery, construct, evidence, based, explanation, something	P4 boundary: density, particle theory and gas laws are not required	Verified against V7 compliance register
P4-W20-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W18 to W19; Spaced: P4-W12; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately identify objects that are sources of light, using relevant observation, data or model evidence	light, sources, seeing, objects, identify	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W20-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W18 to W19; Spaced: P4-W12; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately state that a non-luminous object is seen when it reflects light, using relevant observation, data or model evidence	light, sources, seeing, objects, state, non, luminous, object, seen, when	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W20-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W18 to W19; Spaced: P4-W12; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately distinguish a light source from an object that only reflects light, using relevant observation, data or model evidence	light, sources, seeing, objects, distinguish, source, object, only, reflects	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W20-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W18 to W19; Spaced: P4-W12; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately use a ray-path sketch to explain how an object is seen, using relevant observation, data or model evidence	light, sources, seeing, objects, use, ray, path, sketch, explain, how	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W21-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W19 to W20; Spaced: P4-W13; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately state that light travels in straight lines, using relevant observation, data or model evidence	light, travels, straight, lines, state	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W21-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W19 to W20; Spaced: P4-W13; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately use aligned holes as evidence that light travels straight, using relevant observation, data or model evidence	light, travels, straight, lines, use, aligned, holes, evidence	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W21-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W19 to W20; Spaced: P4-W13; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately predict whether light reaches a screen through a path, using relevant observation, data or model evidence	light, travels, straight, lines, predict, whether, reaches, screen, through, path	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W21-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W19 to W20; Spaced: P4-W13; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately correct a diagram showing a bent light path in one medium, using relevant observation, data or model evidence	light, travels, straight, lines, correct, diagram, showing, bent, path, one	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W22-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W20 to W21; Spaced: P4-W14; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately state that a shadow forms when light is blocked completely or partially, using relevant observation, data or model evidence	light, shadow, formation, state, forms, when, blocked, completely, partially	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W22-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W20 to W21; Spaced: P4-W14; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately identify light source, object, screen and shadow, using relevant observation, data or model evidence	light, shadow, formation, identify, source, object, screen	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W22-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W20 to W21; Spaced: P4-W14; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately predict the position of a shadow, using relevant observation, data or model evidence	light, shadow, formation, predict, position	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W22-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W20 to W21; Spaced: P4-W14; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately explain shadow formation using straight-line travel of light, using relevant observation, data or model evidence	light, shadow, formation, explain, straight, line, travel	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W23-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W21 to W22; Spaced: P4-W15; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately relate shadow shape to object shape and orientation, using relevant observation, data or model evidence	light, shadow, shape, object, position, relate, orientation	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W23-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W21 to W22; Spaced: P4-W15; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately predict how moving an object changes shadow position, using relevant observation, data or model evidence	light, shadow, shape, object, position, predict, how, moving, changes	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W23-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W21 to W22; Spaced: P4-W15; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately compare shadow evidence from two object positions, using relevant observation, data or model evidence	light, shadow, shape, object, position, compare, evidence, two, positions	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W23-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W21 to W22; Spaced: P4-W15; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately design a fair comparison of shadow position, using relevant observation, data or model evidence	light, shadow, shape, object, position, design, fair, comparison	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P4-W24-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W22 to W23; Spaced: P4-W16; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately relate shadow size to source-object distance, using relevant observation, data or model evidence	light, shadow, size, variables, relate, source, object, distance	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W24-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W22 to W23; Spaced: P4-W16; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately relate shadow size to object-screen distance, using relevant observation, data or model evidence	light, shadow, size, variables, relate, object, screen, distance	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W24-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W22 to W23; Spaced: P4-W16; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately interpret shadow-size data from a fair test, using relevant observation, data or model evidence	light, shadow, size, variables, interpret, data, fair, test	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W24-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W22 to W23; Spaced: P4-W16; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately identify variables to change, measure and keep the same, using relevant observation, data or model evidence	light, shadow, size, variables, identify, change, measure, keep, same	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W25-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W23 to W24; Spaced: P4-W17; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately compare complete and partial blocking of light, using relevant observation, data or model evidence	light, complete, partial, blocking, compare	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W25-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W23 to W24; Spaced: P4-W17; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately infer blocking degree from the shadow formed, using relevant observation, data or model evidence	light, complete, partial, blocking, infer, degree, shadow, formed	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W25-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W23 to W24; Spaced: P4-W17; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately choose a material for a required light-blocking purpose using evidence, using relevant observation, data or model evidence	light, complete, partial, blocking, choose, material, required, purpose, evidence	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W25-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W23 to W24; Spaced: P4-W17; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately explain without requiring transparent, translucent or opaque terminology, using relevant observation, data or model evidence	light, complete, partial, blocking, explain, without, requiring, transparent, translucent, opaque	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W26-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W24 to W25; Spaced: P4-W18; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately formulate a testable question about shadows, using relevant observation, data or model evidence	light, investigation, formulate, testable, question, about, shadows	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W26-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W24 to W25; Spaced: P4-W18; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately construct a fair shadow investigation, using relevant observation, data or model evidence	light, investigation, construct, fair, shadow	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W26-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W24 to W25; Spaced: P4-W18; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately record results in a table or simple graph, using relevant observation, data or model evidence	light, investigation, record, results, table, simple, graph	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W26-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W24 to W25; Spaced: P4-W18; Prerequisite: P3-W11-KP1; P3-W15-KP1	Accurately evaluate whether the evidence supports the conclusion, using relevant observation, data or model evidence	light, investigation, evaluate, whether, evidence, supports, conclusion	P4 boundary: refraction, lenses and quantitative ray calculations are not required	Verified against V7 compliance register
P4-W27-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W25 to W26; Spaced: P4-W19; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately identify common sources of heat, using relevant observation, data or model evidence	heat, sources, energy, identify, common	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W27-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W25 to W26; Spaced: P4-W19; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately state that heat is a form of energy, using relevant observation, data or model evidence	heat, sources, energy, state, form	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W27-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W25 to W26; Spaced: P4-W19; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately distinguish a heat source from an object warmed by it, using relevant observation, data or model evidence	heat, sources, energy, distinguish, source, object, warmed	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W27-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W25 to W26; Spaced: P4-W19; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately explain a familiar heating situation using a heat source, using relevant observation, data or model evidence	heat, sources, energy, explain, familiar, heating, situation, source	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W28-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W26 to W27; Spaced: P4-W20; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately state that temperature measures degree of hotness, using relevant observation, data or model evidence	heat, temperature, measurement, state, measures, degree, hotness	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W28-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W26 to W27; Spaced: P4-W20; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately read a thermometer scale correctly, using relevant observation, data or model evidence	heat, temperature, measurement, read, thermometer, scale, correctly	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W28-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W26 to W27; Spaced: P4-W20; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately use a datalogger or temperature sensor reading, using relevant observation, data or model evidence	heat, temperature, measurement, use, datalogger, sensor, reading	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W28-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W26 to W27; Spaced: P4-W20; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately distinguish temperature from heat, using relevant observation, data or model evidence	heat, temperature, measurement, distinguish	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W29-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W27 to W28; Spaced: P4-W21; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately state that heat flows from hotter to colder regions, using relevant observation, data or model evidence	heat, direction, flow, state, flows, hotter, colder, regions	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W29-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W27 to W28; Spaced: P4-W21; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately predict the direction of heat flow between two objects, using relevant observation, data or model evidence	heat, direction, flow, predict, between, two, objects	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W29-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W27 to W28; Spaced: P4-W21; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately state that heat flow continues until both reach the same temperature, using relevant observation, data or model evidence	heat, direction, flow, state, continues, until, both, reach, same, temperature	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W29-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W27 to W28; Spaced: P4-W21; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately use temperature data to justify heat-flow direction, using relevant observation, data or model evidence	heat, direction, flow, use, temperature, data, justify	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W30-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W28 to W29; Spaced: P4-W22; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately relate heat gain to a temperature increase, using relevant observation, data or model evidence	heat, gain, loss, temperature, relate, increase	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W30-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W28 to W29; Spaced: P4-W22; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately relate heat loss to a temperature decrease, using relevant observation, data or model evidence	heat, gain, loss, temperature, relate, decrease	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W30-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W28 to W29; Spaced: P4-W22; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately interpret a temperature-time graph, using relevant observation, data or model evidence	heat, gain, loss, temperature, interpret, time, graph	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W30-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W28 to W29; Spaced: P4-W22; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately explain a plateau or change using evidence appropriate to P4, using relevant observation, data or model evidence	heat, gain, loss, temperature, explain, plateau, change, evidence, appropriate	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W31-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W29 to W30; Spaced: P4-W23; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately state that solids, liquids and gases may expand when heated, using relevant observation, data or model evidence	heat, expansion, contraction, state, solids, liquids, gases, may, expand, when	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W31-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W29 to W30; Spaced: P4-W23; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately state that objects may contract when cooled, using relevant observation, data or model evidence	heat, expansion, contraction, state, objects, may, contract, when, cooled	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W31-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W29 to W30; Spaced: P4-W23; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately identify everyday effects of expansion or contraction, using relevant observation, data or model evidence	heat, expansion, contraction, identify, everyday, effects	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P4-W31-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W29 to W30; Spaced: P4-W23; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately use before-and-after evidence to infer heat gain or loss, using relevant observation, data or model evidence	heat, expansion, contraction, use, before, after, evidence, infer, gain, loss	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W32-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W30 to W31; Spaced: P4-W24; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately recognise melting as an effect of heat gain, using relevant observation, data or model evidence	heat, changes, state, gain, loss, recognise, melting, effect	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W32-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W30 to W31; Spaced: P4-W24; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately recognise freezing as an effect of heat loss, using relevant observation, data or model evidence	heat, changes, state, gain, loss, recognise, freezing, effect	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W32-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W30 to W31; Spaced: P4-W24; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately distinguish a change of state from expansion, using relevant observation, data or model evidence	heat, changes, state, gain, loss, distinguish, change, expansion	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W32-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W30 to W31; Spaced: P4-W24; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately apply heat gain or loss to an everyday state change, using relevant observation, data or model evidence	heat, changes, state, gain, loss, apply, everyday, change	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W33-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W31 to W32; Spaced: P4-W25; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately identify metals as generally good conductors of heat, using relevant observation, data or model evidence	heat, conductors, identify, metals, generally, good	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W33-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W31 to W32; Spaced: P4-W25; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately identify wood, plastics, air and rubber as poor conductors of heat, using relevant observation, data or model evidence	heat, conductors, identify, wood, plastics, air, rubber, poor	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W33-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W31 to W32; Spaced: P4-W25; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately choose a material for a heat-related use, using relevant observation, data or model evidence	heat, conductors, choose, material, related, use	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W33-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W31 to W32; Spaced: P4-W25; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately design a fair comparison of heat conduction, using relevant observation, data or model evidence	heat, conductors, design, fair, comparison, conduction	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W34-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W32 to W33; Spaced: P4-W26; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately retrieve heat, temperature, flow and material ideas, using relevant observation, data or model evidence	heat, mastery, transfer, retrieve, temperature, flow, material, ideas	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W34-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W32 to W33; Spaced: P4-W26; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately apply heat ideas to a multi-step everyday context, using relevant observation, data or model evidence	heat, mastery, transfer, apply, ideas, multi, step, everyday, context	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W34-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W32 to W33; Spaced: P4-W26; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately interpret thermometer, table and graph evidence together, using relevant observation, data or model evidence	heat, mastery, transfer, interpret, thermometer, table, graph, evidence, together	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W34-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W32 to W33; Spaced: P4-W26; Prerequisite: P3-W11-KP1; P3-W12-KP1	Accurately evaluate and improve a heat investigation, using relevant observation, data or model evidence	heat, mastery, transfer, evaluate, improve, investigation	P4 boundary: avoid particle theory and rates for specific metals; exact water fixed points are consolidated at P5	Verified against V7 compliance register
P4-W35-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P4-W33 to W34; Spaced: P4-W27; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately formulate a testable P4 science question, using relevant observation, data or model evidence	inquiry, mastery, fair, test, design, formulate, testable, science, question	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W35-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W33 to W34; Spaced: P4-W27; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately identify changed, measured and controlled variables, using relevant observation, data or model evidence	inquiry, mastery, fair, test, design, identify, changed, measured, controlled, variables	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W35-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W33 to W34; Spaced: P4-W27; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately choose suitable observations or measurements, using relevant observation, data or model evidence	inquiry, mastery, fair, test, design, choose, suitable, observations, measurements	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W35-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W33 to W34; Spaced: P4-W27; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately evaluate whether a proposed test is fair, using relevant observation, data or model evidence	inquiry, mastery, fair, test, design, evaluate, whether, proposed	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W36-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W34 to W35; Spaced: P4-W28; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately record P4 observations in a clear table, using relevant observation, data or model evidence	inquiry, mastery, tables, graphs, record, observations, clear, table	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W36-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W34 to W35; Spaced: P4-W28; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately read scales and units accurately, using relevant observation, data or model evidence	inquiry, mastery, tables, graphs, read, scales, units, accurately	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W36-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W34 to W35; Spaced: P4-W28; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately describe a pattern from a bar or line graph, using relevant observation, data or model evidence	inquiry, mastery, tables, graphs, describe, pattern, bar, line, graph	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W36-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W34 to W35; Spaced: P4-W28; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately use graph evidence without extending beyond the data, using relevant observation, data or model evidence	inquiry, mastery, tables, graphs, use, graph, evidence, without, extending, beyond	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W37-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W35 to W36; Spaced: P4-W29; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately interpret labelled plant, digestive, light or heat diagrams, using relevant observation, data or model evidence	inquiry, mastery, diagram, model, reasoning, interpret, labelled, plant, digestive, light	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W37-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W35 to W36; Spaced: P4-W29; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately identify a missing or incorrect model feature, using relevant observation, data or model evidence	inquiry, mastery, diagram, model, reasoning, identify, missing, incorrect, feature	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W37-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W35 to W36; Spaced: P4-W29; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately explain why the feature matters scientifically, using relevant observation, data or model evidence	inquiry, mastery, diagram, model, reasoning, explain, why, feature, matters, scientifically	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W37-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W35 to W36; Spaced: P4-W29; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately revise the model using evidence, using relevant observation, data or model evidence	inquiry, mastery, diagram, model, reasoning, revise, evidence	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W38-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W36 to W37; Spaced: P4-W30; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately select the relevant P4 topic for a novel situation, using relevant observation, data or model evidence	inquiry, mastery, cross, topic, application, select, relevant, novel, situation	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W38-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W36 to W37; Spaced: P4-W30; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately connect two P4 ideas without importing P5 content, using relevant observation, data or model evidence	inquiry, mastery, cross, topic, application, connect, two, ideas, without, importing	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W38-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W36 to W37; Spaced: P4-W30; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately support an explanation with observations or data, using relevant observation, data or model evidence	inquiry, mastery, cross, topic, application, support, explanation, observations, data	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W38-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W36 to W37; Spaced: P4-W30; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately compare an alternative explanation, using relevant observation, data or model evidence	inquiry, mastery, cross, topic, application, compare, alternative, explanation	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W39-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P4-W37 to W38; Spaced: P4-W31; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately distinguish heat from temperature, using relevant observation, data or model evidence	inquiry, mastery, misconception, repair, distinguish, heat, temperature	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W39-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W37 to W38; Spaced: P4-W31; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately distinguish seeing by reflected light from being a light source, using relevant observation, data or model evidence	inquiry, mastery, misconception, repair, distinguish, seeing, reflected, light, being, source	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P4-W39-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W37 to W38; Spaced: P4-W31; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately distinguish digestion from movement of food, using relevant observation, data or model evidence	inquiry, mastery, misconception, repair, distinguish, digestion, movement, food	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W39-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W37 to W38; Spaced: P4-W31; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately distinguish P4 plant functions from P5 transport details, using relevant observation, data or model evidence	inquiry, mastery, misconception, repair, distinguish, plant, functions, transport, details	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W40-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P4-W38 to W39; Spaced: P4-W32; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately retrieve all P4 core outcomes, using relevant observation, data or model evidence	inquiry, mastery, cumulative, retrieve, all, core, outcomes	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W40-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P4-W38 to W39; Spaced: P4-W32; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately apply P4 knowledge to unfamiliar representations, using relevant observation, data or model evidence	inquiry, mastery, cumulative, apply, knowledge, unfamiliar, representations	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W40-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P4-W38 to W39; Spaced: P4-W32; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately communicate a complete evidence-based explanation, using relevant observation, data or model evidence	inquiry, mastery, cumulative, communicate, complete, evidence, based, explanation	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register
P4-W40-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P4-W38 to W39; Spaced: P4-W32; Prerequisite: P3-W10-KP4; P3-W20-KP4	Accurately evaluate and improve a method, model or conclusion, using relevant observation, data or model evidence	inquiry, mastery, cumulative, evaluate, improve, method, model, conclusion	P4 boundary: explain functions and observable energy effects without later-level anatomy or mechanisms	Verified against V7 compliance register

2. P5 40-Week Yearly Map - Curriculum and Weekly Focus

Week	Term	Term Week	Theme	Topic	Weekly Focus	Practice	Values / Attitudes	Stage
1	1	1	Cycles	Reproduction	Cells, continuity and inherited characteristics	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
2	1	2	Cycles	Reproduction	Flower parts and their roles	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
3	1	3	Cycles	Reproduction	Pollination	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
4	1	4	Cycles	Reproduction	Fertilisation and seed production	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
5	1	5	Cycles	Reproduction	Seed dispersal	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
6	1	6	Cycles	Reproduction	Germination and reproduction by spores or seeds	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
7	1	7	Cycles	Reproduction	Reproduction mastery	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
8	1	8	Cycles	Water	Three states of water	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Introduce
9	1	9	Cycles	Water	Melting and freezing at 0°C	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Develop
10	1	10	Cycles	Water	Boiling and condensation	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
11	2	1	Cycles	Water	Evaporation	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Develop
12	2	2	Cycles	Water	Rate of evaporation	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Apply / Consolidate
13	2	3	Cycles	Water	Water cycle	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Apply / Consolidate
14	2	4	Cycles	Water	Water, life and resource responsibility	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Master / Transfer
15	2	5	Systems	Plant transport system	Water uptake and transport	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Introduce
16	2	6	Systems	Plant transport system	Food production and transport	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
17	2	7	Systems	Plant transport system	Plant gas exchange	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Develop
18	2	8	Systems	Plant transport system	Transport investigations	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Develop
19	2	9	Systems	Plant transport system	Effects of blocked transport	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Apply / Consolidate
20	2	10	Systems	Plant transport system	Plant transport model	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Apply / Consolidate
21	3	1	Systems	Plant transport system	Plant-system mastery	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Master / Transfer
22	3	2	Systems	Human respiratory and circulatory systems	Composition of air	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Introduce
23	3	3	Systems	Human respiratory and circulatory systems	Respiratory-system parts	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
24	3	4	Systems	Human respiratory and circulatory systems	Circulatory-system parts	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
25	3	5	Systems	Human respiratory and circulatory systems	Transported substances	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
26	3	6	Systems	Human respiratory and circulatory systems	Integrated human systems	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
27	3	7	Systems	Human respiratory and circulatory systems	Comparing gas exchange and transport	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
28	3	8	Systems	Human respiratory and circulatory systems	Human-system mastery	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
29	3	9	Systems	Electrical system	Circuit components and system	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
30	3	10	Systems	Electrical system	Closed and open circuits	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
31	4	1	Systems	Electrical system	Conductors and insulators	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Develop
32	4	2	Systems	Electrical system	Batteries in series	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
33	4	3	Systems	Electrical system	Bulbs in series and parallel	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Apply / Consolidate
34	4	4	Systems	Electrical system	Electrical mastery and responsibility	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
35	4	5	Integration	P5 cross-topic mastery	Reproduction × evidence: Evaluate a flowering-plant reproduction claim	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Introduce
36	4	6	Integration	P5 cross-topic mastery	Water × investigation: Water change and evaporation investigation mastery	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Develop
37	4	7	Integration	P5 cross-topic mastery	Plant × human systems: Compare transport systems	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Develop
38	4	8	Integration	P5 cross-topic mastery	Electricity × fair test: Circuit construction and variable control	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Apply / Consolidate
39	4	9	Integration	P5 cross-topic mastery	Cross-topic data: Interpret unfamiliar P5 science evidence	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Apply / Consolidate
40	4	10	Integration	P5 cross-topic mastery	P5 cumulative mastery: P5 cumulative transfer and misconception correction	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Master / Transfer

2. P5 40-Week Yearly Map - Atomic KP Summary, Retrieval and Scope

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
1	1. State that a cell is a basic unit of life 2. Explain that reproduction ensures continuity of a kind 3. Recognise that many characteristics pass from parents to offspring 4. Distinguish inherited similarity from an acquired change	Recent: none; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains cells, continuity and inherited characteristics accurately using relevant evidence	reproduction, cells, continuity, inherited, characteristics, state, cell, basic, unit, life	P5 boundary: vegetative propagation methods and genetics terminology are not required
2	1. Identify anther and stigma as parts involved in reproduction 2. Identify ovule as the site linked to seed formation 3. Match reproductive flower parts to their roles 4. Interpret a labelled flower diagram without requiring microscopic detail	Recent: P5-W01 to W01; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains flower parts and their roles accurately using relevant evidence	reproduction, flower, parts, roles, identify, anther, stigma, involved, ovule, site	P5 boundary: vegetative propagation methods and genetics terminology are not required
3	1. Define pollination as transfer of pollen grains from anther to stigma 2. Identify wind or animals as pollinating agents 3. Distinguish pollination from fertilisation 4. Apply pollination knowledge to an unfamiliar flower	Recent: P5-W01 to W02; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains pollination accurately using relevant evidence	reproduction, pollination, define, transfer, pollen, grains, anther, stigma, identify, wind	P5 boundary: vegetative propagation methods and genetics terminology are not required
4	1. State that fertilisation involves fusion of male and female reproductive cells 2. Relate fertilisation to seed production 3. Sequence pollination before fertilisation 4. Correct a model that confuses pollination and fertilisation	Recent: P5-W02 to W03; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains fertilisation and seed production accurately using relevant evidence	reproduction, fertilisation, seed, production, state, involves, fusion, male, female, reproductive	P5 boundary: vegetative propagation methods and genetics terminology are not required
5	1. Explain why dispersal reduces competition near the parent plant 2. Recognise wind, water, animals and explosive action as dispersal methods 3. Relate fruit or seed features to a dispersal method 4. Infer a dispersal method from observable evidence	Recent: P5-W03 to W04; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains seed dispersal accurately using relevant evidence	reproduction, seed, dispersal, explain, why, reduces, competition, near, parent, plant	P5 boundary: vegetative propagation methods and genetics terminology are not required
6	1. Describe germination as growth of a seed into a young plant 2. Compare reproduction by spores and by seeds 3. Classify familiar examples by spores or seeds 4. Plan an observation of germination	Recent: P5-W04 to W05; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains germination and reproduction by spores or seeds accurately using relevant evidence	reproduction, germination, spores, seeds, describe, growth, seed, young, plant, compare	P5 boundary: vegetative propagation methods and genetics terminology are not required
7	1. Sequence pollination, fertilisation, seed production, dispersal and germination 2. Explain continuity of kind across a plant cycle 3. Interpret reproduction evidence in diagrams and tables 4. Evaluate an incomplete reproduction model	Recent: P5-W05 to W06; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Explains reproduction mastery accurately using relevant evidence	reproduction, mastery, sequence, pollination, fertilisation, seed, production, dispersal, germination, explain	P5 boundary: vegetative propagation methods and genetics terminology are not required
8	1. Identify ice, water and water vapour as three states 2. Compare water in solid, liquid and gas states 3. Recognise that the three states are interchangeable 4. Classify observations by state of water	Recent: P5-W06 to W07; Spaced: first-term build; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains three states of water accurately using relevant evidence	water, three, states, identify, ice, vapour, compare, solid, liquid, gas	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
9	1. Define melting as solid to liquid 2. Define freezing as liquid to solid 3. State that ice melts and water freezes at 0°C 4. Interpret temperature evidence during melting or freezing	Recent: P5-W07 to W08; Spaced: P5-W01; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains melting and freezing at 0°c accurately using relevant evidence	water, melting, freezing, 0°c, define, solid, liquid, state, ice, melts	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
10	1. Define boiling as liquid to gas 2. Define condensation as gas to liquid 3. State that water boils at 100°C under standard classroom conditions 4. Apply heat gain or loss to boiling and condensation	Recent: P5-W08 to W09; Spaced: P5-W02; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains boiling and condensation accurately using relevant evidence	water, boiling, condensation, define, liquid, gas, state, boils, 100°c, under	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
11	1. Describe evaporation as liquid water changing to water vapour 2. Recognise that evaporation can occur below boiling point 3. Distinguish evaporation from boiling 4. Use particle-free observable evidence to explain evaporation	Recent: P5-W09 to W10; Spaced: P5-W03; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains evaporation accurately using relevant evidence	water, evaporation, describe, liquid, changing, vapour, recognise, can, occur, below	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
12	1. State that higher temperature increases evaporation rate 2. State that stronger wind increases evaporation rate 3. State that larger exposed surface area increases evaporation rate 4. Design a fair test of one evaporation variable	Recent: P5-W10 to W11; Spaced: P5-W04; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains rate of evaporation accurately using relevant evidence	water, rate, evaporation, state, higher, temperature, increases, stronger, wind, larger	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
13	1. Explain evaporation and condensation in the water cycle 2. Sequence water-cycle processes 3. Interpret a water-cycle diagram 4. Explain why the water cycle is important	Recent: P5-W11 to W12; Spaced: P5-W05; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains water cycle accurately using relevant evidence	water, cycle, explain, evaporation, condensation, sequence, processes, interpret, diagram, why	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
14	1. Recognise the importance of water to life processes 2. Describe the impact of water pollution on Earth's water resources 3. Explain the importance of the water cycle using scientific evidence 4. Propose a responsible water-conservation action supported by reasoning	Recent: P5-W12 to W13; Spaced: P5-W06; Prerequisite: P4-W27-KP1; P4-W34-KP4	Explains water, life and resource responsibility accurately using relevant evidence	water, life, resource, responsibility, recognise, importance, processes, describe, impact, pollution	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required
15	1. State that roots take in water 2. State that water-carrying tubes transport water through the plant 3. Trace water from roots to leaves 4. Interpret coloured-water evidence for transport	Recent: P5-W13 to W14; Spaced: P5-W07; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains water uptake and transport accurately using relevant evidence	plant, transport, system, water, uptake, state, roots, take, carrying, tubes	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
16	1. State that leaves make food 2. State that food-carrying tubes transport food to other plant parts 3. Trace food from leaves to growing or storage parts 4. Distinguish food-carrying from water-carrying tubes	Recent: P5-W14 to W15; Spaced: P5-W08; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains food production and transport accurately using relevant evidence	plant, transport, system, food, production, state, leaves, make, carrying, tubes	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
17	1. State that plants take in carbon dioxide and give out oxygen during photosynthesis 2. Recognise that plants also respire 3. Compare gas exchange descriptions using observable inputs and outputs 4. Use evidence to avoid the misconception that plants only take in carbon dioxide	Recent: P5-W15 to W16; Spaced: P5-W09; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains plant gas exchange accurately using relevant evidence	plant, transport, system, gas, exchange, state, plants, take, carbon, dioxide	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
18	1. Plan an investigation showing water movement in a plant 2. Identify variables and observations in a transport test 3. Record transport evidence accurately 4. Evaluate limitations of a plant-transport investigation	Recent: P5-W16 to W17; Spaced: P5-W10; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains transport investigations accurately using relevant evidence	plant, transport, system, investigations, plan, investigation, showing, water, movement, identify	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
19	1. Predict effects when water transport is blocked 2. Predict effects when food transport is blocked 3. Use location of damage to infer the affected transport pathway 4. Explain the prediction using part-function relationships	Recent: P5-W17 to W18; Spaced: P5-W11; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains effects of blocked transport accurately using relevant evidence	plant, transport, system, effects, blocked, predict, when, water, food, use	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
20	1. Construct a model showing roots, leaves and transport tubes 2. Use arrows consistently to show movement 3. Compare a model with observed evidence 4. Revise the model without adding non-required terminology	Recent: P5-W18 to W19; Spaced: P5-W12; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains plant transport model accurately using relevant evidence	plant, transport, system, model, construct, showing, roots, leaves, tubes, use	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
21	1. Integrate roots, leaves and transport tubes 2. Compare transport of water and food 3. Apply transport knowledge to an unfamiliar plant 4. Evaluate a claim about direction and source of transported substances	Recent: P5-W19 to W20; Spaced: P5-W13; Prerequisite: P4-W01-KP2; P4-W07-KP4	Explains plant-system mastery accurately using relevant evidence	plant, transport, system, mastery, integrate, roots, leaves, tubes, compare, water	P5 boundary: xylem, phloem, stomata and transpiration pull are not required
22	1. Recognise nitrogen, oxygen, carbon dioxide and water vapour as gases in air 2. Compare inhaled and exhaled air qualitatively 3. Relate oxygen intake and carbon dioxide output to respiration 4. Interpret simple air-composition evidence without requiring exact percentages	Recent: P5-W20 to W21; Spaced: P5-W14; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains composition of air accurately using relevant evidence	human, respiratory, circulatory, systems, composition, air, recognise, nitrogen, oxygen, carbon	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
23	1. Identify nose, windpipe and lungs 2. State the function of each required respiratory part 3. Trace air through the respiratory system 4. Correct an incorrectly labelled respiratory diagram	Recent: P5-W21 to W22; Spaced: P5-W15; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains respiratory-system parts accurately using relevant evidence	human, respiratory, circulatory, systems, system, parts, identify, nose, windpipe, lungs	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
24	1. Identify heart, blood and blood vessels 2. State the function of each required circulatory component 3. Trace substances transported by blood vessels 4. Interpret a simple circulation model	Recent: P5-W22 to W23; Spaced: P5-W16; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains circulatory-system parts accurately using relevant evidence	human, respiratory, circulatory, systems, system, parts, identify, heart, blood, vessels	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
25	1. State that blood vessels transport oxygen and carbon dioxide 2. State that blood vessels transport digested food 3. Relate transported substances to respiratory and digestive systems 4. Explain why cells depend on transport	Recent: P5-W23 to W24; Spaced: P5-W17; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains transported substances accurately using relevant evidence	human, respiratory, circulatory, systems, transported, substances, state, blood, vessels, transport	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
26	1. Explain how digestive, respiratory and circulatory systems work together 2. Trace oxygen from air to body cells 3. Trace digested food from small intestine to body cells 4. Trace carbon dioxide from cells towards exhalation	Recent: P5-W24 to W25; Spaced: P5-W18; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains integrated human systems accurately using relevant evidence	human, respiratory, circulatory, systems, integrated, explain, how, digestive, work, together	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
27	1. Compare how plants, fish and humans take in oxygen and give out carbon dioxide 2. Compare transport in plants and humans 3. Interpret a comparison table 4. Explain one similarity and one difference using evidence	Recent: P5-W25 to W26; Spaced: P5-W19; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains comparing gas exchange and transport accurately using relevant evidence	human, respiratory, circulatory, systems, comparing, gas, exchange, transport, compare, how	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
28	1. Apply system integration to exercise or health contexts 2. Interpret pulse, breathing or transport evidence qualitatively 3. Evaluate an incomplete human-system model 4. Revise an explanation within MOE scope	Recent: P5-W26 to W27; Spaced: P5-W20; Prerequisite: P4-W08-KP1; P4-W14-KP4	Explains human-system mastery accurately using relevant evidence	human, respiratory, circulatory, systems, system, mastery, apply, integration, exercise, health	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required
29	1. Identify battery, wire, bulb and switch 2. State the function of each circuit component 3. Recognise a circuit as an electrical system 4. Match real components to circuit symbols	Recent: P5-W27 to W28; Spaced: P5-W21; Prerequisite: P3-W11-KP2; P4-W26-KP4	Explains circuit components and system accurately using relevant evidence	electrical, system, circuit, components, identify, battery, wire, bulb, switch, state	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required
30	1. State that current flows in a closed circuit 2. Distinguish complete and incomplete paths 3. Predict whether a bulb lights from a circuit diagram 4. Correct an open circuit	Recent: P5-W28 to W29; Spaced: P5-W22; Prerequisite: P3-W11-KP2; P4-W26-KP4	Explains closed and open circuits accurately using relevant evidence	electrical, system, system, closed, open, circuits, state, current, flows, circuit, distinguish	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required
31	1. Identify electrical conductors and insulators 2. Use a circuit to test a material 3. Classify a tested material using evidence 4. Evaluate whether a conductivity test is fair	Recent: P5-W29 to W30; Spaced: P5-W23; Prerequisite: P3-W11-KP2; P4-W26-KP4	Explains conductors and insulators accurately using relevant evidence	electrical, system, conductors, insulators, identify, use, circuit, test, material, classify	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required
32	1. Construct circuits with batteries in series 2. Investigate the effect of number of batteries on current using bulb brightness as evidence 3. Keep other circuit variables constant 4. Interpret results without claiming an unmeasured current value	Recent: P5-W30 to W31; Spaced: P5-W24; Prerequisite: P3-W11-KP2; P4-W26-KP4	Explains batteries in series accurately using relevant evidence	electrical, system, batteries, series, construct, circuits, investigate, effect, number, current	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required
33	1. Construct bulbs in series 2. Construct bulbs in parallel 3. Compare effects of number and arrangement of bulbs 4. Interpret a circuit diagram with branches	Recent: P5-W31 to W32; Spaced: P5-W25; Prerequisite: P3-W11-KP2; P4-W26-KP4	Explains bulbs in series and parallel accurately using relevant evidence	electrical, system, bulbs, series, parallel, construct, compare, effects, number, arrangement	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required
34	1. Troubleshoot a simple circuit systematically 2. Apply circuit knowledge to an unfamiliar device 3. Evaluate circuit evidence and method 4. Explain safe, responsible and conserving use of electricity	Recent: P5-W32 to W33; Spaced: P5-W26; Prerequisite: P3-W11-KP2; P4-W26-KP4	Explains electrical mastery and responsibility accurately using relevant evidence	electrical, system, mastery, responsibility, troubleshoot, simple, circuit, systematically, apply, knowledge	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required
35	1. Sequence pollination, fertilisation, seed production, dispersal and germination 2. Distinguish pollination from fertilisation using a labelled model 3. Interpret evidence from a seed or spore investigation 4. Evaluate how failure of one stage affects continuity of a plant kind	Recent: P5-W33 to W34; Spaced: P5-W27; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Explains reproduction × evidence: evaluate a flowering-plant reproduction claim accurately using relevant evidence	cross, topic, mastery, reproduction, evidence, evaluate, flowering, plant, claim, sequence	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory
36	1. Compare melting, freezing, boiling, evaporation and condensation 2. Interpret temperature-time evidence around 0°C and 100°C 3. Evaluate a fair test of one evaporation-rate factor 4. Explain why conserving usable water remains important despite the water cycle	Recent: P5-W34 to W35; Spaced: P5-W28; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Explains water × investigation: water change and evaporation investigation mastery accurately using relevant evidence	evaporation, mastery, water, investigation, change, evaporation, compare, melting, freezing	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory
37	1. Trace water and food through a functional plant model 2. Trace oxygen, carbon dioxide and digested food through a human model 3. Compare plant tubes and human blood vessels without non-required terminology 4. Predict a system consequence when one transport pathway is disrupted	Recent: P5-W35 to W36; Spaced: P5-W29; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Explains plant × human systems: compare transport systems accurately using relevant evidence	cross, topic, mastery, plant, human, systems, compare, transport, trace, water	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
38	1. Construct a closed circuit from a circuit diagram 2. Differentiate conductors from insulators using test evidence 3. Compare series and parallel bulb arrangements qualitatively 4. Evaluate whether a circuit investigation changes only one variable	Recent: P5-W36 to W37; Spaced: P5-W30; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Explains electricity × fair test: circuit construction and variable control accurately using relevant evidence	cross, topic, mastery, electricity, fair, test, circuit, construction, variable, control	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory
39	1. Read a table or graph involving a P5 life-process context 2. Link an observation to an evidence-based inference 3. Correct a model that violates one P5 scope boundary 4. Construct a claim-evidence-reasoning response across two P5 topics	Recent: P5-W37 to W38; Spaced: P5-W31; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Explains cross-topic data: interpret unfamiliar p5 science evidence accurately using relevant evidence	cross, topic, mastery, data, interpret, unfamiliar, science, evidence, read, table	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory
40	1. Retrieve one core outcome from each P5 theme 2. Apply P5 knowledge in an unfamiliar but age-appropriate context 3. Evaluate a method, model or conclusion using stated evidence 4. Explain a multi-step P5 system or cycle without importing P6 content	Recent: P5-W38 to W39; Spaced: P5-W32; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Explains p5 cumulative mastery: p5 cumulative transfer and misconception correction accurately using relevant evidence	cross, topic, mastery, cumulative, transfer, misconception, correction, retrieve, one, core	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory

3. P5 Atomic KP Register - Atomic KP Content View

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P5-W01-KP1	1	Cycles	Reproduction	Cells, continuity and inherited characteristics	1	State that a cell is a basic unit of life	Introduce	MOE Explicit Core	Know / Understand
P5-W01-KP2	1	Cycles	Reproduction	Cells, continuity and inherited characteristics	2	Explain that reproduction ensures continuity of a kind	Introduce	MOE Explicit Core	Explain / Interpret
P5-W01-KP3	1	Cycles	Reproduction	Cells, continuity and inherited characteristics	3	Recognise that many characteristics pass from parents to offspring	Introduce	MOE Practice / Application	Apply / Analyse
P5-W01-KP4	1	Cycles	Reproduction	Cells, continuity and inherited characteristics	4	Distinguish inherited similarity from an acquired change	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P5-W02-KP1	2	Cycles	Reproduction	Flower parts and their roles	1	Identify anther and stigma as parts involved in reproduction	Develop	MOE Explicit Core	Know / Understand
P5-W02-KP2	2	Cycles	Reproduction	Flower parts and their roles	2	Identify ovule as the site linked to seed formation	Develop	MOE Explicit Core	Explain / Interpret
P5-W02-KP3	2	Cycles	Reproduction	Flower parts and their roles	3	Match reproductive flower parts to their roles	Develop	MOE Practice / Application	Apply / Analyse
P5-W02-KP4	2	Cycles	Reproduction	Flower parts and their roles	4	Interpret a labelled flower diagram without requiring microscopic detail	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W03-KP1	3	Cycles	Reproduction	Pollination	1	Define pollination as transfer of pollen grains from anther to stigma	Develop	MOE Explicit Core	Know / Understand
P5-W03-KP2	3	Cycles	Reproduction	Pollination	2	Identify wind or animals as pollinating agents	Develop	MOE Explicit Core	Explain / Interpret
P5-W03-KP3	3	Cycles	Reproduction	Pollination	3	Distinguish pollination from fertilisation	Develop	MOE Practice / Application	Apply / Analyse
P5-W03-KP4	3	Cycles	Reproduction	Pollination	4	Apply pollination knowledge to an unfamiliar flower	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W04-KP1	4	Cycles	Reproduction	Fertilisation and seed production	1	State that fertilisation involves fusion of male and female reproductive cells	Develop	MOE Explicit Core	Know / Understand
P5-W04-KP2	4	Cycles	Reproduction	Fertilisation and seed production	2	Relate fertilisation to seed production	Develop	MOE Explicit Core	Explain / Interpret
P5-W04-KP3	4	Cycles	Reproduction	Fertilisation and seed production	3	Sequence pollination before fertilisation	Develop	MOE Practice / Application	Apply / Analyse
P5-W04-KP4	4	Cycles	Reproduction	Fertilisation and seed production	4	Correct a model that confuses pollination and fertilisation	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W05-KP1	5	Cycles	Reproduction	Seed dispersal	1	Explain why dispersal reduces competition near the parent plant	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W05-KP2	5	Cycles	Reproduction	Seed dispersal	2	Recognise wind, water, animals and explosive action as dispersal methods	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W05-KP3	5	Cycles	Reproduction	Seed dispersal	3	Relate fruit or seed features to a dispersal method	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W05-KP4	5	Cycles	Reproduction	Seed dispersal	4	Infer a dispersal method from observable evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W06-KP1	6	Cycles	Reproduction	Germination and reproduction by spores or seeds	1	Describe germination as growth of a seed into a young plant	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W06-KP2	6	Cycles	Reproduction	Germination and reproduction by spores or seeds	2	Compare reproduction by spores and by seeds	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W06-KP3	6	Cycles	Reproduction	Germination and reproduction by spores or seeds	3	Classify familiar examples by spores or seeds	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W06-KP4	6	Cycles	Reproduction	Germination and reproduction by spores or seeds	4	Plan an observation of germination	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W07-KP1	7	Cycles	Reproduction	Reproduction mastery	1	Sequence pollination, fertilisation, seed production, dispersal and germination	Master / Transfer	MOE Explicit Core	Know / Understand
P5-W07-KP2	7	Cycles	Reproduction	Reproduction mastery	2	Explain continuity of kind across a plant cycle	Master / Transfer	MOE Explicit Core	Explain / Interpret
P5-W07-KP3	7	Cycles	Reproduction	Reproduction mastery	3	Interpret reproduction evidence in diagrams and tables	Master / Transfer	MOE Practice / Application	Apply / Analyse
P5-W07-KP4	7	Cycles	Reproduction	Reproduction mastery	4	Evaluate an incomplete reproduction model	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P5-W08-KP1	8	Cycles	Water	Three states of water	1	Identify ice, water and water vapour as three states	Introduce	MOE Explicit Core	Know / Understand
P5-W08-KP2	8	Cycles	Water	Three states of water	2	Compare water in solid, liquid and gas states	Introduce	MOE Explicit Core	Explain / Interpret
P5-W08-KP3	8	Cycles	Water	Three states of water	3	Recognise that the three states are interchangeable	Introduce	MOE Practice / Application	Apply / Analyse
P5-W08-KP4	8	Cycles	Water	Three states of water	4	Classify observations by state of water	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P5-W09-KP1	9	Cycles	Water	Melting and freezing at 0°C	1	Define melting as solid to liquid	Develop	MOE Explicit Core	Know / Understand
P5-W09-KP2	9	Cycles	Water	Melting and freezing at 0°C	2	Define freezing as liquid to solid	Develop	MOE Explicit Core	Explain / Interpret
P5-W09-KP3	9	Cycles	Water	Melting and freezing at 0°C	3	State that ice melts and water freezes at 0°C	Develop	MOE Practice / Application	Apply / Analyse
P5-W09-KP4	9	Cycles	Water	Melting and freezing at 0°C	4	Interpret temperature evidence during melting or freezing	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W10-KP1	10	Cycles	Water	Boiling and condensation	1	Define boiling as liquid to gas	Develop	MOE Explicit Core	Know / Understand
P5-W10-KP2	10	Cycles	Water	Boiling and condensation	2	Define condensation as gas to liquid	Develop	MOE Explicit Core	Explain / Interpret
P5-W10-KP3	10	Cycles	Water	Boiling and condensation	3	State that water boils at 100°C under standard classroom conditions	Develop	MOE Practice / Application	Apply / Analyse
P5-W10-KP4	10	Cycles	Water	Boiling and condensation	4	Apply heat gain or loss to boiling and condensation	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W11-KP1	11	Cycles	Water	Evaporation	1	Describe evaporation as liquid water changing to water vapour	Develop	MOE Explicit Core	Know / Understand
P5-W11-KP2	11	Cycles	Water	Evaporation	2	Recognise that evaporation can occur below boiling point	Develop	MOE Explicit Core	Explain / Interpret
P5-W11-KP3	11	Cycles	Water	Evaporation	3	Distinguish evaporation from boiling	Develop	MOE Practice / Application	Apply / Analyse
P5-W11-KP4	11	Cycles	Water	Evaporation	4	Use particle-free observable evidence to explain evaporation	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W12-KP1	12	Cycles	Water	Rate of evaporation	1	State that higher temperature increases evaporation rate	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W12-KP2	12	Cycles	Water	Rate of evaporation	2	State that stronger wind increases evaporation rate	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W12-KP3	12	Cycles	Water	Rate of evaporation	3	State that larger exposed surface area increases evaporation rate	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W12-KP4	12	Cycles	Water	Rate of evaporation	4	Design a fair test of one evaporation variable	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W13-KP1	13	Cycles	Water	Water cycle	1	Explain evaporation and condensation in the water cycle	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W13-KP2	13	Cycles	Water	Water cycle	2	Sequence water-cycle processes	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W13-KP3	13	Cycles	Water	Water cycle	3	Interpret a water-cycle diagram	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W13-KP4	13	Cycles	Water	Water cycle	4	Explain why the water cycle is important	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W14-KP1	14	Cycles	Water	Water, life and resource responsibility	1	Recognise the importance of water to life processes	Master / Transfer	MOE Explicit Core	Know / Understand
P5-W14-KP2	14	Cycles	Water	Water, life and resource responsibility	2	Describe the impact of water pollution on Earth's water resources	Master / Transfer	MOE Explicit Core	Explain / Interpret
P5-W14-KP3	14	Cycles	Water	Water, life and resource responsibility	3	Explain the importance of the water cycle using scientific evidence	Master / Transfer	MOE Practice / Application	Apply / Analyse
P5-W14-KP4	14	Cycles	Water	Water, life and resource responsibility	4	Propose a responsible water-conservation action supported by reasoning	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P5-W15-KP1	15	Systems	Plant transport system	Water uptake and transport	1	State that roots take in water	Introduce	MOE Explicit Core	Know / Understand
P5-W15-KP2	15	Systems	Plant transport system	Water uptake and transport	2	State that water-carrying tubes transport water through the plant	Introduce	MOE Explicit Core	Explain / Interpret
P5-W15-KP3	15	Systems	Plant transport system	Water uptake and transport	3	Trace water from roots to leaves	Introduce	MOE Practice / Application	Apply / Analyse
P5-W15-KP4	15	Systems	Plant transport system	Water uptake and transport	4	Interpret coloured-water evidence for transport	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P5-W16-KP1	16	Systems	Plant transport system	Food production and transport	1	State that leaves make food	Develop	MOE Explicit Core	Know / Understand
P5-W16-KP2	16	Systems	Plant transport system	Food production and transport	2	State that food-carrying tubes transport food to other plant parts	Develop	MOE Explicit Core	Explain / Interpret
P5-W16-KP3	16	Systems	Plant transport system	Food production and transport	3	Trace food from leaves to growing or storage parts	Develop	MOE Practice / Application	Apply / Analyse
P5-W16-KP4	16	Systems	Plant transport system	Food production and transport	4	Distinguish food-carrying from water-carrying tubes	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W17-KP1	17	Systems	Plant transport system	Plant gas exchange	1	State that plants take in carbon dioxide and give out oxygen during photosynthesis	Develop	MOE Explicit Core	Know / Understand
P5-W17-KP2	17	Systems	Plant transport system	Plant gas exchange	2	Recognise that plants also respire	Develop	MOE Explicit Core	Explain / Interpret
P5-W17-KP3	17	Systems	Plant transport system	Plant gas exchange	3	Compare gas exchange descriptions using observable inputs and outputs	Develop	MOE Practice / Application	Apply / Analyse

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P5-W17-KP4	17	Systems	Plant transport system	Plant gas exchange	4	Use evidence to avoid the misconception that plants only take in carbon dioxide	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W18-KP1	18	Systems	Plant transport system	Transport investigations	1	Plan an investigation showing water movement in a plant	Develop	MOE Explicit Core	Know / Understand
P5-W18-KP2	18	Systems	Plant transport system	Transport investigations	2	Identify variables and observations in a transport test	Develop	MOE Explicit Core	Explain / Interpret
P5-W18-KP3	18	Systems	Plant transport system	Transport investigations	3	Record transport evidence accurately	Develop	MOE Practice / Application	Apply / Analyse
P5-W18-KP4	18	Systems	Plant transport system	Transport investigations	4	Evaluate limitations of a plant-transport investigation	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W19-KP1	19	Systems	Plant transport system	Effects of blocked transport	1	Predict effects when water transport is blocked	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W19-KP2	19	Systems	Plant transport system	Effects of blocked transport	2	Predict effects when food transport is blocked	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W19-KP3	19	Systems	Plant transport system	Effects of blocked transport	3	Use location of damage to infer the affected transport pathway	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W19-KP4	19	Systems	Plant transport system	Effects of blocked transport	4	Explain the prediction using part-function relationships	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W20-KP1	20	Systems	Plant transport system	Plant transport model	1	Construct a model showing roots, leaves and transport tubes	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W20-KP2	20	Systems	Plant transport system	Plant transport model	2	Use arrows consistently to show movement	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W20-KP3	20	Systems	Plant transport system	Plant transport model	3	Compare a model with observed evidence	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W20-KP4	20	Systems	Plant transport system	Plant transport model	4	Revise the model without adding non-required terminology	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W21-KP1	21	Systems	Plant transport system	Plant-system mastery	1	Integrate roots, leaves and transport tubes	Master / Transfer	MOE Explicit Core	Know / Understand
P5-W21-KP2	21	Systems	Plant transport system	Plant-system mastery	2	Compare transport of water and food	Master / Transfer	MOE Explicit Core	Explain / Interpret
P5-W21-KP3	21	Systems	Plant transport system	Plant-system mastery	3	Apply transport knowledge to an unfamiliar plant	Master / Transfer	MOE Practice / Application	Apply / Analyse
P5-W21-KP4	21	Systems	Plant transport system	Plant-system mastery	4	Evaluate a claim about direction and source of transported substances	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P5-W22-KP1	22	Systems	Human respiratory and circulatory systems	Composition of air	1	Recognise nitrogen, oxygen, carbon dioxide and water vapour as gases in air	Introduce	MOE Explicit Core	Know / Understand
P5-W22-KP2	22	Systems	Human respiratory and circulatory systems	Composition of air	2	Compare inhaled and exhaled air qualitatively	Introduce	MOE Explicit Core	Explain / Interpret
P5-W22-KP3	22	Systems	Human respiratory and circulatory systems	Composition of air	3	Relate oxygen intake and carbon dioxide output to respiration	Introduce	MOE Practice / Application	Apply / Analyse
P5-W22-KP4	22	Systems	Human respiratory and circulatory systems	Composition of air	4	Interpret simple air-composition evidence without requiring exact percentages	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P5-W23-KP1	23	Systems	Human respiratory and circulatory systems	Respiratory-system parts	1	Identify nose, windpipe and lungs	Develop	MOE Explicit Core	Know / Understand
P5-W23-KP2	23	Systems	Human respiratory and circulatory systems	Respiratory-system parts	2	State the function of each required respiratory part	Develop	MOE Explicit Core	Explain / Interpret
P5-W23-KP3	23	Systems	Human respiratory and circulatory systems	Respiratory-system parts	3	Trace air through the respiratory system	Develop	MOE Practice / Application	Apply / Analyse
P5-W23-KP4	23	Systems	Human respiratory and circulatory systems	Respiratory-system parts	4	Correct an incorrectly labelled respiratory diagram	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W24-KP1	24	Systems	Human respiratory and circulatory systems	Circulatory-system parts	1	Identify heart, blood and blood vessels	Develop	MOE Explicit Core	Know / Understand
P5-W24-KP2	24	Systems	Human respiratory and circulatory systems	Circulatory-system parts	2	State the function of each required circulatory component	Develop	MOE Explicit Core	Explain / Interpret
P5-W24-KP3	24	Systems	Human respiratory and circulatory systems	Circulatory-system parts	3	Trace substances transported by blood vessels	Develop	MOE Practice / Application	Apply / Analyse
P5-W24-KP4	24	Systems	Human respiratory and circulatory systems	Circulatory-system parts	4	Interpret a simple circulation model	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W25-KP1	25	Systems	Human respiratory and circulatory systems	Transported substances	1	State that blood vessels transport oxygen and carbon dioxide	Develop	MOE Explicit Core	Know / Understand
P5-W25-KP2	25	Systems	Human respiratory and circulatory systems	Transported substances	2	State that blood vessels transport digested food	Develop	MOE Explicit Core	Explain / Interpret
P5-W25-KP3	25	Systems	Human respiratory and circulatory systems	Transported substances	3	Relate transported substances to respiratory and digestive systems	Develop	MOE Practice / Application	Apply / Analyse
P5-W25-KP4	25	Systems	Human respiratory and circulatory systems	Transported substances	4	Explain why cells depend on transport	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W26-KP1	26	Systems	Human respiratory and circulatory systems	Integrated human systems	1	Explain how digestive, respiratory and circulatory systems work together	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W26-KP2	26	Systems	Human respiratory and circulatory systems	Integrated human systems	2	Trace oxygen from air to body cells	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W26-KP3	26	Systems	Human respiratory and circulatory systems	Integrated human systems	3	Trace digested food from small intestine to body cells	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W26-KP4	26	Systems	Human respiratory and circulatory systems	Integrated human systems	4	Trace carbon dioxide from cells towards exhalation	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W27-KP1	27	Systems	Human respiratory and circulatory systems	Comparing gas exchange and transport	1	Compare how plants, fish and humans take in oxygen and give out carbon dioxide	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W27-KP2	27	Systems	Human respiratory and circulatory systems	Comparing gas exchange and transport	2	Compare transport in plants and humans	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W27-KP3	27	Systems	Human respiratory and circulatory systems	Comparing gas exchange and transport	3	Interpret a comparison table	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W27-KP4	27	Systems	Human respiratory and circulatory systems	Comparing gas exchange and transport	4	Explain one similarity and one difference using evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W28-KP1	28	Systems	Human respiratory and circulatory systems	Human-system mastery	1	Apply system integration to exercise or health contexts	Master / Transfer	MOE Explicit Core	Know / Understand
P5-W28-KP2	28	Systems	Human respiratory and circulatory systems	Human-system mastery	2	Interpret pulse, breathing or transport evidence qualitatively	Master / Transfer	MOE Explicit Core	Explain / Interpret
P5-W28-KP3	28	Systems	Human respiratory and circulatory systems	Human-system mastery	3	Evaluate an incomplete human-system model	Master / Transfer	MOE Practice / Application	Apply / Analyse
P5-W28-KP4	28	Systems	Human respiratory and circulatory systems	Human-system mastery	4	Revise an explanation within MOE scope	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P5-W29-KP1	29	Systems	Electrical system	Circuit components and system	1	Identify battery, wire, bulb and switch	Introduce	MOE Explicit Core	Know / Understand
P5-W29-KP2	29	Systems	Electrical system	Circuit components and system	2	State the function of each circuit component	Introduce	MOE Explicit Core	Explain / Interpret
P5-W29-KP3	29	Systems	Electrical system	Circuit components and system	3	Recognise a circuit as an electrical system	Introduce	MOE Practice / Application	Apply / Analyse
P5-W29-KP4	29	Systems	Electrical system	Circuit components and system	4	Match real components to circuit symbols	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P5-W30-KP1	30	Systems	Electrical system	Closed and open circuits	1	State that current flows in a closed circuit	Develop	MOE Explicit Core	Know / Understand
P5-W30-KP2	30	Systems	Electrical system	Closed and open circuits	2	Distinguish complete and incomplete paths	Develop	MOE Explicit Core	Explain / Interpret
P5-W30-KP3	30	Systems	Electrical system	Closed and open circuits	3	Predict whether a bulb lights from a circuit diagram	Develop	MOE Practice / Application	Apply / Analyse
P5-W30-KP4	30	Systems	Electrical system	Closed and open circuits	4	Correct an open circuit	Develop	MOE Transfer / Evaluation	Evaluate / Improve

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P5-W31-KP1	31	Systems	Electrical system	Conductors and insulators	1	Identify electrical conductors and insulators	Develop	MOE Explicit Core	Know / Understand
P5-W31-KP2	31	Systems	Electrical system	Conductors and insulators	2	Use a circuit to test a material	Develop	MOE Explicit Core	Explain / Interpret
P5-W31-KP3	31	Systems	Electrical system	Conductors and insulators	3	Classify a tested material using evidence	Develop	MOE Practice / Application	Apply / Analyse
P5-W31-KP4	31	Systems	Electrical system	Conductors and insulators	4	Evaluate whether a conductivity test is fair	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W32-KP1	32	Systems	Electrical system	Batteries in series	1	Construct circuits with batteries in series	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W32-KP2	32	Systems	Electrical system	Batteries in series	2	Investigate the effect of number of batteries on current using bulb brightness as evidence	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W32-KP3	32	Systems	Electrical system	Batteries in series	3	Keep other circuit variables constant	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W32-KP4	32	Systems	Electrical system	Batteries in series	4	Interpret results without claiming an unmeasured current value	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W33-KP1	33	Systems	Electrical system	Bulbs in series and parallel	1	Construct bulbs in series	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W33-KP2	33	Systems	Electrical system	Bulbs in series and parallel	2	Construct bulbs in parallel	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W33-KP3	33	Systems	Electrical system	Bulbs in series and parallel	3	Compare effects of number and arrangement of bulbs	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W33-KP4	33	Systems	Electrical system	Bulbs in series and parallel	4	Interpret a circuit diagram with branches	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W34-KP1	34	Systems	Electrical system	Electrical mastery and responsibility	1	Troubleshoot a simple circuit systematically	Master / Transfer	MOE Explicit Core	Know / Understand
P5-W34-KP2	34	Systems	Electrical system	Electrical mastery and responsibility	2	Apply circuit knowledge to an unfamiliar device	Master / Transfer	MOE Explicit Core	Explain / Interpret
P5-W34-KP3	34	Systems	Electrical system	Electrical mastery and responsibility	3	Evaluate circuit evidence and method	Master / Transfer	MOE Practice / Application	Apply / Analyse
P5-W34-KP4	34	Systems	Electrical system	Electrical mastery and responsibility	4	Explain safe, responsible and conserving use of electricity	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P5-W35-KP1	35	Integration	P5 cross-topic mastery	Reproduction × evidence: Evaluate a flowering-plant reproduction claim	1	Sequence pollination, fertilisation, seed production, dispersal and germination	Introduce	MOE Explicit Core	Know / Understand
P5-W35-KP2	35	Integration	P5 cross-topic mastery	Reproduction × evidence: Evaluate a flowering-plant reproduction claim	2	Distinguish pollination from fertilisation using a labelled model	Introduce	MOE Explicit Core	Explain / Interpret
P5-W35-KP3	35	Integration	P5 cross-topic mastery	Reproduction × evidence: Evaluate a flowering-plant reproduction claim	3	Interpret evidence from a seed or spore investigation	Introduce	MOE Practice / Application	Apply / Analyse
P5-W35-KP4	35	Integration	P5 cross-topic mastery	Reproduction × evidence: Evaluate a flowering-plant reproduction claim	4	Evaluate how failure of one stage affects continuity of a plant kind	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P5-W36-KP1	36	Integration	P5 cross-topic mastery	Water × investigation: Water change and evaporation investigation mastery	1	Compare melting, freezing, boiling, evaporation and condensation	Develop	MOE Explicit Core	Know / Understand
P5-W36-KP2	36	Integration	P5 cross-topic mastery	Water × investigation: Water change and evaporation investigation mastery	2	Interpret temperature-time evidence around 0°C and 100°C	Develop	MOE Explicit Core	Explain / Interpret
P5-W36-KP3	36	Integration	P5 cross-topic mastery	Water × investigation: Water change and evaporation investigation mastery	3	Evaluate a fair test of one evaporation-rate factor	Develop	MOE Practice / Application	Apply / Analyse
P5-W36-KP4	36	Integration	P5 cross-topic mastery	Water × investigation: Water change and evaporation investigation mastery	4	Explain why conserving usable water remains important despite the water cycle	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W37-KP1	37	Integration	P5 cross-topic mastery	Plant × human systems: Compare transport systems	1	Trace water and food through a functional plant model	Develop	MOE Explicit Core	Know / Understand
P5-W37-KP2	37	Integration	P5 cross-topic mastery	Plant × human systems: Compare transport systems	2	Trace oxygen, carbon dioxide and digested food through a human model	Develop	MOE Explicit Core	Explain / Interpret
P5-W37-KP3	37	Integration	P5 cross-topic mastery	Plant × human systems: Compare transport systems	3	Compare plant tubes and human blood vessels without non-required terminology	Develop	MOE Practice / Application	Apply / Analyse
P5-W37-KP4	37	Integration	P5 cross-topic mastery	Plant × human systems: Compare transport systems	4	Predict a system consequence when one transport pathway is disrupted	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P5-W38-KP1	38	Integration	P5 cross-topic mastery	Electricity × fair test: Circuit construction and variable control	1	Construct a closed circuit from a circuit diagram	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W38-KP2	38	Integration	P5 cross-topic mastery	Electricity × fair test: Circuit construction and variable control	2	Differentiate conductors from insulators using test evidence	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W38-KP3	38	Integration	P5 cross-topic mastery	Electricity × fair test: Circuit construction and variable control	3	Compare series and parallel bulb arrangements qualitatively	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W38-KP4	38	Integration	P5 cross-topic mastery	Electricity × fair test: Circuit construction and variable control	4	Evaluate whether a circuit investigation changes only one variable	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W39-KP1	39	Integration	P5 cross-topic mastery	Cross-topic data: Interpret unfamiliar P5 science evidence	1	Read a table or graph involving a P5 life-process context	Apply / Consolidate	MOE Explicit Core	Know / Understand
P5-W39-KP2	39	Integration	P5 cross-topic mastery	Cross-topic data: Interpret unfamiliar P5 science evidence	2	Link an observation to an evidence-based inference	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P5-W39-KP3	39	Integration	P5 cross-topic mastery	Cross-topic data: Interpret unfamiliar P5 science evidence	3	Correct a model that violates one P5 scope boundary	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P5-W39-KP4	39	Integration	P5 cross-topic mastery	Cross-topic data: Interpret unfamiliar P5 science evidence	4	Construct a claim-evidence-reasoning response across two P5 topics	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P5-W40-KP1	40	Integration	P5 cross-topic mastery	P5 cumulative mastery: P5 cumulative transfer and misconception correction	1	Retrieve one core outcome from each P5 theme	Master / Transfer	MOE Explicit Core	Know / Understand
P5-W40-KP2	40	Integration	P5 cross-topic mastery	P5 cumulative mastery: P5 cumulative transfer and misconception correction	2	Apply P5 knowledge in an unfamiliar but age-appropriate context	Master / Transfer	MOE Explicit Core	Explain / Interpret
P5-W40-KP3	40	Integration	P5 cross-topic mastery	P5 cumulative mastery: P5 cumulative transfer and misconception correction	3	Evaluate a method, model or conclusion using stated evidence	Master / Transfer	MOE Practice / Application	Apply / Analyse
P5-W40-KP4	40	Integration	P5 cross-topic mastery	P5 cumulative mastery: P5 cumulative transfer and misconception correction	4	Explain a multi-step P5 system or cycle without importing P6 content	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve

3. P5 Atomic KP Register - Assessment, Retrieval and Scope View

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P5-W01-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: none; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately state that a cell is a basic unit of life, using relevant observation, data or model evidence	reproduction, cells, continuity, inherited, characteristics, state, cell, basic, unit, life	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W01-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: none; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately explain that reproduction ensures continuity of a kind, using relevant observation, data or model evidence	reproduction, cells, continuity, inherited, characteristics, explain, ensures, kind	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W01-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: none; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately recognise that many characteristics pass from parents to offspring, using relevant observation, data or model evidence	reproduction, cells, continuity, inherited, characteristics, recognise, many, pass, parents, offspring	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W01-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: none; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately distinguish inherited similarity from an acquired change, using relevant observation, data or model evidence	reproduction, cells, continuity, inherited, characteristics, distinguish, similarity, acquired, change	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W02-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W01 to W01; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately identify anther and stigma as parts involved in reproduction, using relevant observation, data or model evidence	reproduction, flower, parts, roles, identify, anther, stigma, involved	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W02-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W01 to W01; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately identify ovule as the site linked to seed formation, using relevant observation, data or model evidence	reproduction, flower, parts, roles, identify, ovule, site, linked, seed, formation	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W02-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W01 to W01; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately match reproductive flower parts to their roles, using relevant observation, data or model evidence	reproduction, flower, parts, roles, match, reproductive	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W02-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W01 to W01; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately interpret a labelled flower diagram without requiring microscopic detail, using relevant observation, data or model evidence	reproduction, flower, parts, roles, interpret, labelled, diagram, without, requiring, microscopic	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W03-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W01 to W02; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately define pollination as transfer of pollen grains from anther to stigma, using relevant observation, data or model evidence	reproduction, pollination, define, transfer, pollen, grains, anther, stigma	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W03-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W01 to W02; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately identify wind or animals as pollinating agents, using relevant observation, data or model evidence	reproduction, pollination, identify, wind, animals, pollinating, agents	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W03-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W01 to W02; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately distinguish pollination from fertilisation, using relevant observation, data or model evidence	reproduction, pollination, distinguish, fertilisation	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W03-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W01 to W02; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately apply pollination knowledge to an unfamiliar flower, using relevant observation, data or model evidence	reproduction, pollination, apply, knowledge, unfamiliar, flower	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W04-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W02 to W03; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately state that fertilisation involves fusion of male and female reproductive cells, using relevant observation, data or model evidence	reproduction, fertilisation, seed, production, state, involves, fusion, male, female, reproductive	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W04-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W02 to W03; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately relate fertilisation to seed production, using relevant observation, data or model evidence	reproduction, fertilisation, seed, production, relate	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W04-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W02 to W03; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately sequence pollination before fertilisation, using relevant observation, data or model evidence	reproduction, fertilisation, seed, production, sequence, pollination, before	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W04-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W02 to W03; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately correct a model that confuses pollination and fertilisation, using relevant observation, data or model evidence	reproduction, fertilisation, seed, production, correct, model, confuses, pollination	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W05-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P5-W03 to W04; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately explain why dispersal reduces competition near the parent plant, using relevant observation, data or model evidence	reproduction, seed, dispersal, explain, why, reduces, competition, near, parent, plant	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W05-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W03 to W04; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately recognise wind, water, animals and explosive action as dispersal methods, using relevant observation, data or model evidence	reproduction, seed, dispersal, recognise, wind, water, animals, explosive, action, methods	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W05-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W03 to W04; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately relate fruit or seed features to a dispersal method, using relevant observation, data or model evidence	reproduction, seed, dispersal, relate, fruit, features, method	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W05-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W03 to W04; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately infer a dispersal method from observable evidence, using relevant observation, data or model evidence	reproduction, seed, dispersal, infer, method, observable, evidence	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W06-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W04 to W05; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately describe germination as growth of a seed into a young plant, using relevant observation, data or model evidence	reproduction, germination, spores, seeds, describe, growth, seed, young, plant	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W06-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W04 to W05; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately compare reproduction by spores and by seeds, using relevant observation, data or model evidence	reproduction, germination, spores, seeds, compare	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W06-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W04 to W05; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately classify familiar examples by spores or seeds, using relevant observation, data or model evidence	reproduction, germination, spores, seeds, classify, familiar, examples	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W06-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W04 to W05; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately plan an observation of germination, using relevant observation, data or model evidence	reproduction, germination, spores, seeds, plan, observation	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W07-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P5-W05 to W06; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately sequence pollination, fertilisation, seed production, dispersal and germination, using relevant observation, data or model evidence	reproduction, mastery, sequence, pollination, fertilisation, seed, production, dispersal, germination	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W07-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W05 to W06; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately explain continuity of kind across a plant cycle, using relevant observation, data or model evidence	reproduction, mastery, explain, continuity, kind, across, plant, cycle	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W07-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W05 to W06; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately interpret reproduction evidence in diagrams and tables, using relevant observation, data or model evidence	reproduction, mastery, interpret, evidence, diagrams, tables	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W07-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W05 to W06; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Accurately evaluate an incomplete reproduction model, using relevant observation, data or model evidence	reproduction, mastery, evaluate, incomplete, model	P5 boundary: vegetative propagation methods and genetics terminology are not required	Verified against V7 compliance register
P5-W08-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P5-W06 to W07; Spaced: first-term build; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately identify ice, water and water vapour as three states, using relevant observation, data or model evidence	water, three, states, identify, ice, vapour	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W08-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W06 to W07; Spaced: first-term build; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately compare water in solid, liquid and gas states, using relevant observation, data or model evidence	water, three, states, compare, solid, liquid, gas	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P5-W08-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W06 to W07; Spaced: first-term build; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately recognise that the three states are interchangeable, using relevant observation, data or model evidence	water, three, states, recognise, interchangeable	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W08-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W06 to W07; Spaced: first-term build; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately classify observations by state of water, using relevant observation, data or model evidence	water, three, states, classify, observations, state	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W09-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W07 to W08; Spaced: P5-W01; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately define melting as solid to liquid, using relevant observation, data or model evidence	water, melting, freezing, 0°c, define, solid, liquid	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W09-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W07 to W08; Spaced: P5-W01; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately define freezing as liquid to solid, using relevant observation, data or model evidence	water, melting, freezing, 0°c, define, liquid, solid	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W09-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W07 to W08; Spaced: P5-W01; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately state that ice melts and water freezes at 0°C, using relevant observation, data or model evidence	water, melting, freezing, 0°c, state, ice, melts, freezes	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W09-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W07 to W08; Spaced: P5-W01; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately interpret temperature evidence during melting or freezing, using relevant observation, data or model evidence	water, melting, freezing, 0°c, interpret, temperature, evidence, during	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W10-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P5-W08 to W09; Spaced: P5-W02; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately define boiling as liquid to gas, using relevant observation, data or model evidence	water, boiling, condensation, define, liquid, gas	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W10-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W08 to W09; Spaced: P5-W02; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately define condensation as gas to liquid, using relevant observation, data or model evidence	water, boiling, condensation, define, gas, liquid	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W10-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W08 to W09; Spaced: P5-W02; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately state that water boils at 100°C under standard classroom conditions, using relevant observation, data or model evidence	water, boiling, condensation, state, boils, 100°c, under, standard, classroom, conditions	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W10-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W08 to W09; Spaced: P5-W02; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately apply heat gain or loss to boiling and condensation, using relevant observation, data or model evidence	water, boiling, condensation, apply, heat, gain, loss	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W11-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W09 to W10; Spaced: P5-W03; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately describe evaporation as liquid water changing to water vapour, using relevant observation, data or model evidence	water, evaporation, describe, liquid, changing, vapour	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W11-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W09 to W10; Spaced: P5-W03; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately recognise that evaporation can occur below boiling point, using relevant observation, data or model evidence	water, evaporation, recognise, can, occur, below, boiling, point	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W11-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W09 to W10; Spaced: P5-W03; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately distinguish evaporation from boiling, using relevant observation, data or model evidence	water, evaporation, distinguish, boiling	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W11-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W09 to W10; Spaced: P5-W03; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately use particle-free observable evidence to explain evaporation, using relevant observation, data or model evidence	water, evaporation, use, particle, free, observable, evidence, explain	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W12-KP1	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W10 to W11; Spaced: P5-W04; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately state that higher temperature increases evaporation rate, using relevant observation, data or model evidence	water, rate, evaporation, state, higher, temperature, increases	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W12-KP2	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W10 to W11; Spaced: P5-W04; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately state that stronger wind increases evaporation rate, using relevant observation, data or model evidence	water, rate, evaporation, state, stronger, wind, increases	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W12-KP3	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W10 to W11; Spaced: P5-W04; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately state that larger exposed surface area increases evaporation rate, using relevant observation, data or model evidence	water, rate, evaporation, state, larger, exposed, surface, area, increases	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W12-KP4	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W10 to W11; Spaced: P5-W04; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately design a fair test of one evaporation variable, using relevant observation, data or model evidence	water, rate, evaporation, design, fair, test, one, variable	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W13-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P5-W11 to W12; Spaced: P5-W05; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately explain evaporation and condensation in the water cycle, using relevant observation, data or model evidence	water, cycle, explain, evaporation, condensation	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W13-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W11 to W12; Spaced: P5-W05; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately sequence water-cycle processes, using relevant observation, data or model evidence	water, cycle, sequence, processes	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W13-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W11 to W12; Spaced: P5-W05; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately interpret a water-cycle diagram, using relevant observation, data or model evidence	water, cycle, interpret, diagram	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W13-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W11 to W12; Spaced: P5-W05; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately explain why the water cycle is important, using relevant observation, data or model evidence	water, cycle, explain, why, important	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W14-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W12 to W13; Spaced: P5-W06; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately recognise the importance of water to life processes, using relevant observation, data or model evidence	water, life, resource, responsibility, recognise, importance, processes	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W14-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W12 to W13; Spaced: P5-W06; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately describe the impact of water pollution on Earth's water resources, using relevant observation, data or model evidence	water, life, resource, responsibility, describe, impact, pollution, earth, resources	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W14-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W12 to W13; Spaced: P5-W06; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately explain the importance of the water cycle using scientific evidence, using relevant observation, data or model evidence	water, life, resource, responsibility, explain, importance, cycle, scientific, evidence	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W14-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W12 to W13; Spaced: P5-W06; Prerequisite: P4-W27-KP1; P4-W34-KP4	Accurately propose a responsible water-conservation action supported by reasoning, using relevant observation, data or model evidence	water, life, resource, responsibility, propose, responsible, conservation, action, supported, reasoning	P5 boundary: use wind, temperature and exposed surface area for evaporation; particle theory and humidity are not required	Verified against V7 compliance register
P5-W15-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W13 to W14; Spaced: P5-W07; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately state that roots take in water, using relevant observation, data or model evidence	plant, transport, system, water, uptake, state, roots, take	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W15-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W13 to W14; Spaced: P5-W07; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately state that water-carrying tubes transport water through the plant, using relevant observation, data or model evidence	plant, transport, system, water, uptake, state, carrying, tubes, through	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W15-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W13 to W14; Spaced: P5-W07; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately trace water from roots to leaves, using relevant observation, data or model evidence	plant, transport, system, water, uptake, trace, roots, leaves	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W15-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W13 to W14; Spaced: P5-W07; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately interpret coloured-water evidence for transport, using relevant observation, data or model evidence	plant, transport, system, water, uptake, interpret, coloured, evidence	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W16-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P5-W14 to W15; Spaced: P5-W08; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately state that leaves make food, using relevant observation, data or model evidence	plant, transport, system, food, production, state, leaves, make	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P5-W16-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W14 to W15; Spaced: P5-W08; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately state that food-carrying tubes transport food to other plant parts, using relevant observation, data or model evidence	plant, transport, system, food, production, state, carrying, tubes, other, parts	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W16-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W14 to W15; Spaced: P5-W08; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately trace food from leaves to growing or storage parts, using relevant observation, data or model evidence	plant, transport, system, food, production, trace, leaves, growing, storage, parts	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W16-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W14 to W15; Spaced: P5-W08; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately distinguish food-carrying from water-carrying tubes, using relevant observation, data or model evidence	plant, transport, system, food, production, distinguish, carrying, water, tubes	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W17-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W15 to W16; Spaced: P5-W09; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately state that plants take in carbon dioxide and give out oxygen during photosynthesis, using relevant observation, data or model evidence	plant, transport, system, gas, exchange, state, plants, take, carbon, dioxide	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W17-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W15 to W16; Spaced: P5-W09; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately recognise that plants also respire, using relevant observation, data or model evidence	plant, transport, system, gas, exchange, recognise, plants, also, respire	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W17-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W15 to W16; Spaced: P5-W09; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately compare gas exchange descriptions using observable inputs and outputs, using relevant observation, data or model evidence	plant, transport, system, gas, exchange, compare, descriptions, observable, inputs, outputs	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W17-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W15 to W16; Spaced: P5-W09; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately use evidence to avoid the misconception that plants only take in carbon dioxide, using relevant observation, data or model evidence	plant, transport, system, gas, exchange, use, evidence, avoid, misconception, plants	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W18-KP1	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W16 to W17; Spaced: P5-W10; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately plan an investigation showing water movement in a plant, using relevant observation, data or model evidence	plant, transport, system, investigations, plan, investigation, showing, water, movement	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W18-KP2	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W16 to W17; Spaced: P5-W10; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately identify variables and observations in a transport test, using relevant observation, data or model evidence	plant, transport, system, investigations, identify, variables, observations, test	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W18-KP3	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W16 to W17; Spaced: P5-W10; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately record transport evidence accurately, using relevant observation, data or model evidence	plant, transport, system, investigations, record, evidence, accurately	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W18-KP4	Question; hypothesise; investigate; evaluate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W16 to W17; Spaced: P5-W10; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately evaluate limitations of a plant-transport investigation, using relevant observation, data or model evidence	plant, transport, system, investigations, evaluate, limitations, investigation	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W19-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P5-W17 to W18; Spaced: P5-W11; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately predict effects when water transport is blocked, using relevant observation, data or model evidence	plant, transport, system, effects, blocked, predict, when, water	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W19-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W17 to W18; Spaced: P5-W11; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately predict effects when food transport is blocked, using relevant observation, data or model evidence	plant, transport, system, effects, blocked, predict, when, food	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W19-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W17 to W18; Spaced: P5-W11; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately use location of damage to infer the affected transport pathway, using relevant observation, data or model evidence	plant, transport, system, effects, blocked, use, location, damage, infer, affected	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W19-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W17 to W18; Spaced: P5-W11; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately explain the prediction using part-function relationships, using relevant observation, data or model evidence	plant, transport, system, effects, blocked, explain, prediction, part, function, relationships	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W20-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P5-W18 to W19; Spaced: P5-W12; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately construct a model showing roots, leaves and transport tubes, using relevant observation, data or model evidence	plant, transport, system, model, construct, showing, roots, leaves, tubes	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W20-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W18 to W19; Spaced: P5-W12; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately use arrows consistently to show movement, using relevant observation, data or model evidence	plant, transport, system, model, use, arrows, consistently, show, movement	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W20-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W18 to W19; Spaced: P5-W12; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately compare a model with observed evidence, using relevant observation, data or model evidence	plant, transport, system, model, compare, observed, evidence	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W20-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W18 to W19; Spaced: P5-W12; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately revise the model without adding non-required terminology, using relevant observation, data or model evidence	plant, transport, system, model, revise, without, adding, non, required, terminology	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W21-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P5-W19 to W20; Spaced: P5-W13; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately integrate roots, leaves and transport tubes, using relevant observation, data or model evidence	plant, transport, system, mastery, integrate, roots, leaves, tubes	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W21-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P5-W19 to W20; Spaced: P5-W13; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately compare transport of water and food, using relevant observation, data or model evidence	plant, transport, system, mastery, compare, water, food	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W21-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P5-W19 to W20; Spaced: P5-W13; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately apply transport knowledge to an unfamiliar plant, using relevant observation, data or model evidence	plant, transport, system, mastery, apply, knowledge, unfamiliar	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W21-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P5-W19 to W20; Spaced: P5-W13; Prerequisite: P4-W01-KP2; P4-W07-KP4	Accurately evaluate a claim about direction and source of transported substances, using relevant observation, data or model evidence	plant, transport, system, mastery, evaluate, claim, about, direction, source, transported	P5 boundary: xylem, phloem, stomata and transpiration pull are not required	Verified against V7 compliance register
P5-W22-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P5-W20 to W21; Spaced: P5-W14; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately recognise nitrogen, oxygen, carbon dioxide and water vapour as gases in air, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, composition, air, recognise, nitrogen, oxygen, carbon	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W22-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W20 to W21; Spaced: P5-W14; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately compare inhaled and exhaled air qualitatively, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, composition, air, compare, inhaled, exhaled, qualitatively	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W22-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W20 to W21; Spaced: P5-W14; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately relate oxygen intake and carbon dioxide output to respiration, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, composition, air, relate, oxygen, intake, carbon	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W22-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W20 to W21; Spaced: P5-W14; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately interpret simple air-composition evidence without requiring exact percentages, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, composition, air, interpret, simple, evidence, without	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W23-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W21 to W22; Spaced: P5-W15; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately identify nose, windpipe and lungs, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, identify, nose, windpipe, lungs	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W23-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W21 to W22; Spaced: P5-W15; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately state the function of each required respiratory part, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, state, function, each, required	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W23-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W21 to W22; Spaced: P5-W15; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately trace air through the respiratory system, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, trace, air, through	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W23-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W21 to W22; Spaced: P5-W15; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately correct an incorrectly labelled respiratory diagram, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, correct, incorrectly, labelled, diagram	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P5-W24-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W22 to W23; Spaced: P5-W16; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately identify heart, blood and blood vessels, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, identify, heart, blood, vessels	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W24-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W22 to W23; Spaced: P5-W16; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately state the function of each required circulatory component, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, state, function, each, required evidence	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W24-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W22 to W23; Spaced: P5-W16; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately trace substances transported by blood vessels, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, trace, substances, transported, blood	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W24-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W22 to W23; Spaced: P5-W16; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately interpret a simple circulation model, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, parts, interpret, simple, circulation, model	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W25-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W23 to W24; Spaced: P5-W17; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately state that blood vessels transport oxygen and carbon dioxide, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, transported, substances, state, blood, vessels, transport	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W25-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W23 to W24; Spaced: P5-W17; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately state that blood vessels transport digested food, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, transported, substances, state, blood, vessels, transport	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W25-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W23 to W24; Spaced: P5-W17; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately relate transported substances to respiratory and digestive systems, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, transported, substances, relate, digestive evidence	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W25-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W23 to W24; Spaced: P5-W17; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately explain why cells depend on transport, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, transported, substances, explain, why, cells, depend	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W26-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W24 to W25; Spaced: P5-W18; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately explain how digestive, respiratory and circulatory systems work together, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, integrated, explain, how, digestive, work, together	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W26-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W24 to W25; Spaced: P5-W18; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately trace oxygen from air to body cells, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, integrated, trace, oxygen, air, body, cells	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W26-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W24 to W25; Spaced: P5-W18; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately trace digested food from small intestine to body cells, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, integrated, trace, digested, food, small, intestine	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W26-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W24 to W25; Spaced: P5-W18; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately trace carbon dioxide from cells towards exhalation, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, integrated, trace, carbon, dioxide, cells, towards	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W27-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P5-W25 to W26; Spaced: P5-W19; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately compare how plants, fish and humans take in oxygen and give out carbon dioxide, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, comparing, gas, exchange, transport, compare, how	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W27-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W25 to W26; Spaced: P5-W19; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately compare transport in plants and humans, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, comparing, gas, exchange, transport, compare, plants	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W27-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W25 to W26; Spaced: P5-W19; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately interpret a comparison table, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, comparing, gas, exchange, transport, interpret, comparison	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W27-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W25 to W26; Spaced: P5-W19; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately explain one similarity and one difference using evidence, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, comparing, gas, exchange, transport, explain, one	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W28-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P5-W26 to W27; Spaced: P5-W20; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately apply system integration to exercise or health contexts, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, mastery, apply, integration, exercise, health	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W28-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W26 to W27; Spaced: P5-W20; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately interpret pulse, breathing or transport evidence qualitatively, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, mastery, interpret, pulse, breathing, transport	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W28-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W26 to W27; Spaced: P5-W20; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately evaluate an incomplete human-system model, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, mastery, evaluate, incomplete, model	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W28-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W26 to W27; Spaced: P5-W20; Prerequisite: P4-W08-KP1; P4-W14-KP4	Accurately revise an explanation within MOE scope, using relevant observation, data or model evidence	human, respiratory, circulatory, systems, system, mastery, revise, explanation, within, moe	P5 boundary: alveoli, heart chambers/valves, artery, vein and capillary recall are not required	Verified against V7 compliance register
P5-W29-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W27 to W28; Spaced: P5-W21; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately identify battery, wire, bulb and switch, using relevant observation, data or model evidence	electrical, system, circuit, components, identify, battery, wire, bulb, switch	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W29-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W27 to W28; Spaced: P5-W21; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately state the function of each circuit component, using relevant observation, data or model evidence	electrical, system, circuit, components, state, function, each, component	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W29-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W27 to W28; Spaced: P5-W21; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately recognise a circuit as an electrical system, using relevant observation, data or model evidence	electrical, system, circuit, components, recognise	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W29-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W27 to W28; Spaced: P5-W21; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately match real components to circuit symbols, using relevant observation, data or model evidence	electrical, system, circuit, components, match, real, symbols	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W30-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W28 to W29; Spaced: P5-W22; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately state that current flows in a closed circuit, using relevant observation, data or model evidence	electrical, system, closed, open, circuits, state, current, flows, circuit	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W30-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W28 to W29; Spaced: P5-W22; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately distinguish complete and incomplete paths, using relevant observation, data or model evidence	electrical, system, closed, open, circuits, distinguish, complete, incomplete, paths	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W30-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W28 to W29; Spaced: P5-W22; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately predict whether a bulb lights from a circuit diagram, using relevant observation, data or model evidence	electrical, system, closed, open, circuits, predict, whether, bulb, lights, circuit	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W30-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W28 to W29; Spaced: P5-W22; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately correct an open circuit, using relevant observation, data or model evidence	electrical, system, closed, open, circuits, correct, circuit	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W31-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P5-W29 to W30; Spaced: P5-W23; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately identify electrical conductors and insulators, using relevant observation, data or model evidence	electrical, system, conductors, insulators, identify	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W31-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W29 to W30; Spaced: P5-W23; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately use a circuit to test a material, using relevant observation, data or model evidence	electrical, system, conductors, insulators, use, circuit, test, material	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W31-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W29 to W30; Spaced: P5-W23; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately classify a tested material using evidence, using relevant observation, data or model evidence	electrical, system, conductors, insulators, classify, tested, material, evidence	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P5-W31-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W29 to W30; Spaced: P5-W23; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately evaluate whether a conductivity test is fair, using relevant observation, data or model evidence	electrical, system, conductors, insulators, evaluate, whether, conductivity, test, fair	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W32-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P5-W30 to W31; Spaced: P5-W24; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately construct circuits with batteries in series, using relevant observation, data or model evidence	electrical, system, batteries, series, construct, circuits	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W32-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W30 to W31; Spaced: P5-W24; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately investigate the effect of number of batteries on current using bulb brightness as evidence, using relevant observation, data or model evidence	electrical, system, batteries, series, investigate, effect, number, current, bulb, brightness	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W32-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W30 to W31; Spaced: P5-W24; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately keep other circuit variables constant, using relevant observation, data or model evidence	electrical, system, batteries, series, keep, other, circuit, variables, constant	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W32-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W30 to W31; Spaced: P5-W24; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately interpret results without claiming an unmeasured current value, using relevant observation, data or model evidence	electrical, system, batteries, series, interpret, results, without, claiming, unmeasured, current	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W33-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P5-W31 to W32; Spaced: P5-W25; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately construct bulbs in series, using relevant observation, data or model evidence	electrical, system, bulbs, series, parallel, construct	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W33-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W31 to W32; Spaced: P5-W25; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately construct bulbs in parallel, using relevant observation, data or model evidence	electrical, system, bulbs, series, parallel, construct	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W33-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W31 to W32; Spaced: P5-W25; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately compare effects of number and arrangement of bulbs, using relevant observation, data or model evidence	electrical, system, bulbs, series, parallel, compare, effects, number, arrangement	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W33-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W31 to W32; Spaced: P5-W25; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately interpret a circuit diagram with branches, using relevant observation, data or model evidence	electrical, system, bulbs, series, parallel, interpret, circuit, diagram, branches	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W34-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P5-W32 to W33; Spaced: P5-W26; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately troubleshoot a simple circuit systematically, using relevant observation, data or model evidence	electrical, system, mastery, responsibility, troubleshoot, simple, circuit, systematically	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W34-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P5-W32 to W33; Spaced: P5-W26; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately apply circuit knowledge to an unfamiliar device, using relevant observation, data or model evidence	electrical, system, mastery, responsibility, apply, circuit, knowledge, unfamiliar, device	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W34-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P5-W32 to W33; Spaced: P5-W26; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately evaluate circuit evidence and method, using relevant observation, data or model evidence	electrical, system, mastery, responsibility, evaluate, circuit, evidence, method	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W34-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P5-W32 to W33; Spaced: P5-W26; Prerequisite: P3-W11-KP2; P4-W26-KP4	Accurately explain safe, responsible and conserving use of electricity, using relevant observation, data or model evidence	electrical, system, mastery, responsibility, explain, safe, responsible, conserving, use, electricity	P5 boundary: quantitative current, voltage, resistance and electron-flow theory are not required	Verified against V7 compliance register
P5-W35-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Short response	Recent: P5-W33 to W34; Spaced: P5-W27; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately sequence pollination, fertilisation, seed production, dispersal and germination, using relevant observation, data or model evidence	cross, topic, mastery, reproduction, evidence, evaluate, flowering, plant, claim, sequence	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W35-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Diagram / table / graph response	Recent: P5-W33 to W34; Spaced: P5-W27; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately distinguish pollination from fertilisation using a labelled model, using relevant observation, data or model evidence	cross, topic, mastery, reproduction, evidence, evaluate, flowering, plant, claim, distinguish	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W35-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Constructed explanation	Recent: P5-W33 to W34; Spaced: P5-W27; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately interpret evidence from a seed or spore investigation, using relevant observation, data or model evidence	cross, topic, mastery, reproduction, evidence, evaluate, flowering, plant, claim, interpret	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W35-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Method / model critique	Recent: P5-W33 to W34; Spaced: P5-W27; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately evaluate how failure of one stage affects continuity of a plant kind, using relevant observation, data or model evidence	cross, topic, mastery, reproduction, evidence, evaluate, flowering, plant, claim, how	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W36-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Short response	Recent: P5-W34 to W35; Spaced: P5-W28; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately compare melting, freezing, boiling, evaporation and condensation, using relevant observation, data or model evidence	cross, topic, mastery, water, investigation, change, evaporation, compare, melting, freezing	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W36-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Diagram / table / graph response	Recent: P5-W34 to W35; Spaced: P5-W28; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately interpret temperature-time evidence around 0°C and 100°C, using relevant observation, data or model evidence	cross, topic, mastery, water, investigation, change, evaporation, interpret, temperature, time	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W36-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Constructed explanation	Recent: P5-W34 to W35; Spaced: P5-W28; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately evaluate a fair test of one evaporation-rate factor, using relevant observation, data or model evidence	cross, topic, mastery, water, investigation, change, evaporation, evaluate, fair, test	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W36-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Method / model critique	Recent: P5-W34 to W35; Spaced: P5-W28; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately explain why conserving usable water remains important despite the water cycle, using relevant observation, data or model evidence	cross, topic, mastery, water, investigation, change, evaporation, explain, why, conserving	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W37-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Short response	Recent: P5-W35 to W36; Spaced: P5-W29; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately trace water and food through a functional plant model, using relevant observation, data or model evidence	cross, topic, mastery, plant, human, systems, compare, transport, trace, water	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W37-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Diagram / table / graph response	Recent: P5-W35 to W36; Spaced: P5-W29; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately trace oxygen, carbon dioxide and digested food through a human model, using relevant observation, data or model evidence	cross, topic, mastery, plant, human, systems, compare, transport, trace, oxygen	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W37-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Constructed explanation	Recent: P5-W35 to W36; Spaced: P5-W29; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately compare plant tubes and human blood vessels without non-required terminology, using relevant observation, data or model evidence	cross, topic, mastery, plant, human, systems, compare, transport, tubes, blood	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W37-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Method / model critique	Recent: P5-W35 to W36; Spaced: P5-W29; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately predict a system consequence when one transport pathway is disrupted, using relevant observation, data or model evidence	cross, topic, mastery, plant, human, systems, compare, transport, predict, system	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W38-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Short response	Recent: P5-W36 to W37; Spaced: P5-W30; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately construct a closed circuit from a circuit diagram, using relevant observation, data or model evidence	cross, topic, mastery, electricity, fair, test, circuit, construction, variable, control	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W38-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Diagram / table / graph response	Recent: P5-W36 to W37; Spaced: P5-W30; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately differentiate conductors from insulators using test evidence, using relevant observation, data or model evidence	cross, topic, mastery, electricity, fair, test, circuit, construction, variable, control	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P5-W38-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Constructed explanation	Recent: P5-W36 to W37; Spaced: P5-W30; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately compare series and parallel bulb arrangements qualitatively, using relevant observation, data or model evidence	cross, topic, mastery, electricity, fair, test, circuit, construction, variable, control	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W38-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Method / model critique	Recent: P5-W36 to W37; Spaced: P5-W30; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately evaluate whether a circuit investigation changes only one variable, using relevant observation, data or model evidence	cross, topic, mastery, electricity, fair, test, circuit, construction, variable, control	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W39-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Short response	Recent: P5-W37 to W38; Spaced: P5-W31; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately read a table or graph involving a P5 life-process context, using relevant observation, data or model evidence	cross, topic, mastery, data, interpret, unfamiliar, science, evidence, read, table	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W39-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Diagram / table / graph response	Recent: P5-W37 to W38; Spaced: P5-W31; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately link an observation to an evidence-based inference, using relevant observation, data or model evidence	cross, topic, mastery, data, interpret, unfamiliar, science, evidence, link, observation	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W39-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Constructed explanation	Recent: P5-W37 to W38; Spaced: P5-W31; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately correct a model that violates one P5 scope boundary, using relevant observation, data or model evidence	cross, topic, mastery, data, interpret, unfamiliar, science, evidence, correct, model	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W39-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Method / model critique	Recent: P5-W37 to W38; Spaced: P5-W31; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately construct a claim-evidence-reasoning response across two P5 topics, using relevant observation, data or model evidence	cross, topic, mastery, data, interpret, unfamiliar, science, evidence, construct, claim	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W40-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Short response	Recent: P5-W38 to W39; Spaced: P5-W32; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately retrieve one core outcome from each P5 theme, using relevant observation, data or model evidence	cross, topic, mastery, cumulative, transfer, misconception, correction, retrieve, one, core	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W40-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Diagram / table / graph response	Recent: P5-W38 to W39; Spaced: P5-W32; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately apply P5 knowledge in an unfamiliar but age-appropriate context, using relevant observation, data or model evidence	cross, topic, mastery, cumulative, transfer, misconception, correction, apply, knowledge, unfamiliar	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W40-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Constructed explanation	Recent: P5-W38 to W39; Spaced: P5-W32; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately evaluate a method, model or conclusion using stated evidence, using relevant observation, data or model evidence	cross, topic, mastery, cumulative, transfer, misconception, correction, evaluate, method, model	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register
P5-W40-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility; integrity	Method / model critique	Recent: P5-W38 to W39; Spaced: P5-W32; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Accurately explain a multi-step P5 system or cycle without importing P6 content, using relevant observation, data or model evidence	cross, topic, mastery, cumulative, transfer, misconception, correction, explain, multi, step	P5 boundary: use MOE functional descriptions; avoid secondary-level terminology and quantitative electrical theory	Verified against V7 compliance register

2. P6 40-Week Yearly Map - Curriculum and Weekly Focus

Week	Term	Term Week	Theme	Topic	Weekly Focus	Practice	Values / Attitudes	Stage
1	1	1	Energy	Photosynthesis	Energy for life processes	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Introduce
2	1	2	Energy	Photosynthesis	Sun and ways organisms obtain energy	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Develop
3	1	3	Energy	Photosynthesis	Photosynthesis overview	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Develop
4	1	4	Energy	Photosynthesis	Requirement: light energy	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Develop
5	1	5	Energy	Photosynthesis	Requirement: water	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
6	1	6	Energy	Photosynthesis	Requirement: carbon dioxide	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
7	1	7	Energy	Photosynthesis	Products and evidence	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
8	1	8	Energy	Photosynthesis	Photosynthesis mastery	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Master / Transfer
9	1	9	Energy	Energy forms and conversion	Energy forms	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Introduce
10	1	10	Energy	Energy forms and conversion	Energy resources and the Sun	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
11	2	1	Energy	Energy forms and conversion	Single-step conversions	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
12	2	2	Energy	Energy forms and conversion	Multi-step conversions	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
13	2	3	Energy	Energy forms and conversion	Responsible energy use	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Apply / Consolidate
14	2	4	Energy	Energy forms and conversion	Energy conversion applications	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Apply / Consolidate
15	2	5	Energy	Energy forms and conversion	Investigating energy conversion	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
16	2	6	Energy	Energy forms and conversion	Energy diagrams and data	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
17	2	7	Interactions	Forces	Pushes, pulls and effects	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Introduce
18	2	8	Interactions	Forces	Types of forces	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
19	2	9	Interactions	Forces	Gravitational force	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
20	2	10	Interactions	Forces	Frictional force	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
21	3	1	Interactions	Forces	Investigating friction	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
22	3	2	Interactions	Forces	Elastic spring force	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
23	3	3	Interactions	Forces	Investigating springs	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Apply / Consolidate
24	3	4	Interactions	Forces	Combined effects of forces	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer
25	3	5	Interactions	Environment	Environmental factors and survival	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Introduce
26	3	6	Interactions	Environment	Producers, consumers and decomposers	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
27	3	7	Interactions	Environment	Food chains	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
28	3	8	Interactions	Environment	Food webs	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
29	3	9	Interactions	Environment	Unfavourable environments	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Develop
30	3	10	Interactions	Environment	Adaptations and survival	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Apply / Consolidate
31	4	1	Interactions	Environment	Observing interacting factors	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Apply / Consolidate
32	4	2	Interactions	Environment	Human negative impacts	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Apply / Consolidate
33	4	3	Interactions	Environment	Human positive impacts	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Apply / Consolidate
34	4	4	Interactions	Environment	Population-change reasoning	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Master / Transfer
35	4	5	Integration	P3-P6 synthesis	Interactions retrieval	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Introduce
36	4	6	Integration	P3-P6 synthesis	Energy retrieval	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Develop
37	4	7	Integration	P3-P6 synthesis	Experimental design	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Develop
38	4	8	Integration	P3-P6 synthesis	Data and graph interpretation	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
39	4	9	Integration	P3-P6 synthesis	Evidence-based explanation	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Apply / Consolidate
40	4	10	Integration	P3-P6 synthesis	Cumulative mastery and transfer	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Master / Transfer

2. P6 40-Week Yearly Map - Atomic KP Summary, Retrieval and Scope

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
1	1. Recognise that living things need energy to carry out life processes 2. State that respiration releases energy from food at the required level 3. Distinguish obtaining energy from obtaining food 4. Interpret a simple energy-for-life-process model	Recent: none; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains energy for life processes accurately using relevant evidence	photosynthesis, energy, life, processes, recognise, living, things, need, carry, out	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
2	1. Recognise the Sun as the primary source of light and heat energy 2. Differentiate how plants and animals obtain energy 3. Trace a simple Sun-to-plant-to-animal energy pathway 4. Correct the claim that plants obtain food directly from soil	Recent: P6-W01 to W01; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains sun and ways organisms obtain energy accurately using relevant evidence	photosynthesis, sun, ways, organisms, obtain, energy, recognise, primary, source, light	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
3	1. State that photosynthesis produces sugar and oxygen 2. Identify water, light energy and carbon dioxide as requirements 3. Represent requirements and products in an input-output model 4. Communicate photosynthesis accurately using a word or input-output model	Recent: P6-W01 to W02; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains photosynthesis overview accurately using relevant evidence	photosynthesis, overview, state, produces, sugar, oxygen, identify, water, light, energy	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
4	1. Predict the effect of removing light from a photosynthesis investigation 2. Identify the changed and measured variables in a light investigation 3. Interpret evidence comparing a light and no-light setup 4. Evaluate whether the comparison is fair	Recent: P6-W02 to W03; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains requirement: light energy accurately using relevant evidence	photosynthesis, requirement, light, energy, predict, effect, removing, investigation, identify, changed	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
5	1. Predict the effect of insufficient water on photosynthesis evidence 2. Control other variables when investigating water requirement 3. Interpret observations without confusing wilting with direct proof of photosynthesis 4. Improve a water-requirement investigation	Recent: P6-W03 to W04; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains requirement: water accurately using relevant evidence	photosynthesis, requirement, water, predict, effect, insufficient, evidence, control, other, variables	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
6	1. Predict the effect of limiting carbon dioxide in a photosynthesis investigation 2. Identify a suitable comparison for carbon-dioxide availability 3. Interpret provided data as evidence for a requirement 4. State a conclusion limited to the evidence	Recent: P6-W04 to W05; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains requirement: carbon dioxide accurately using relevant evidence	photosynthesis, requirement, carbon, dioxide, predict, effect, limiting, investigation, identify, suitable	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
7	1. Relate sugar production to stored or transported food 2. Recognise oxygen as a product of photosynthesis 3. Distinguish a product from a requirement 4. Evaluate whether observations support a product claim	Recent: P6-W05 to W06; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains products and evidence accurately using relevant evidence	photosynthesis, products, evidence, relate, sugar, production, stored, transported, food, recognise	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
8	1. Integrate requirements, products and energy in one model 2. Compare plant energy acquisition with animal energy acquisition 3. Evaluate an unfamiliar photosynthesis investigation 4. Construct a complete evidence-based explanation within P6 boundaries	Recent: P6-W06 to W07; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Explains photosynthesis mastery accurately using relevant evidence	photosynthesis, mastery, integrate, requirements, products, energy, one, model, compare, plant	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required
9	1. Recognise kinetic energy, potential energy, light energy, electrical energy, sound energy and heat energy 2. Identify energy forms in familiar objects 3. Distinguish an energy form from an energy source 4. Justify an identified energy form using observable evidence	Recent: P6-W07 to W08; Spaced: P6-W01; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains energy forms accurately using relevant evidence	energy, forms, conversion, recognise, kinetic, potential, light, electrical, sound, heat	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
10	1. Recognise that energy from most resources is derived in some way from the Sun 2. Trace solar energy into food, fuels or moving air at an appropriate level 3. Identify exceptions without overgeneralising 4. Evaluate a claim about the origin of energy in a context	Recent: P6-W08 to W09; Spaced: P6-W02; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains energy resources and the sun accurately using relevant evidence	energy, forms, conversion, resources, sun, recognise, most, derived, some, way	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
11	1. State that energy can change from one form to another 2. Identify input and output energy forms in a device 3. Represent one conversion with arrows 4. Distinguish useful output from the device itself	Recent: P6-W09 to W10; Spaced: P6-W03; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains single-step conversions accurately using relevant evidence	energy, forms, conversion, single, step, conversions, state, can, change, one	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
12	1. Trace two or more energy conversions 2. Order conversion stages correctly 3. Interpret an energy-flow diagram 4. Correct a missing or wrongly labelled conversion	Recent: P6-W10 to W11; Spaced: P6-W04; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains multi-step conversions accurately using relevant evidence	energy, forms, conversion, multi, step, conversions, trace, two, more, order	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
13	1. Identify intended and unintended energy outputs in a device 2. Explain why reducing unnecessary outputs supports responsible energy use 3. Compare two devices using provided qualitative evidence 4. Recommend an energy-responsible action using qualitative observations and provided evidence	Recent: P6-W11 to W12; Spaced: P6-W05; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains responsible energy use accurately using relevant evidence	energy, forms, conversion, responsible, use, identify, intended, unintended, outputs, device	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
14	1. Trace electrical energy to light, sound, heat or kinetic outputs 2. Trace light energy from the Sun into an appropriate everyday context 3. Interpret a multi-step conversion chain without relying on photosynthesis or food webs 4. Correct an incomplete energy-conversion model using given evidence	Recent: P6-W12 to W13; Spaced: P6-W06; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains energy conversion applications accurately using relevant evidence	energy, forms, conversion, applications, trace, electrical, light, sound, heat, kinetic	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
15	1. Plan an investigation of an energy conversion 2. Identify suitable observations or measurements 3. Record inputs and outputs clearly 4. Evaluate whether evidence shows the claimed conversion	Recent: P6-W13 to W14; Spaced: P6-W07; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains investigating energy conversion accurately using relevant evidence	energy, forms, conversion, investigating, plan, investigation, identify, suitable, observations, measurements	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
16	1. Interpret energy-flow arrow diagrams without calculating efficiency 2. Interpret tables or graphs of energy-related observations 3. Compare two systems using given evidence 4. Communicate a complete conversion chain	Recent: P6-W14 to W15; Spaced: P6-W08; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Explains energy diagrams and data accurately using relevant evidence	energy, forms, conversion, diagrams, data, interpret, flow, arrow, without, calculating	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required
17	1. Identify a force as a push or pull 2. State that a force can move a stationary object 3. State that a force can stop or change motion 4. State that a force can change an object's shape	Recent: P6-W15 to W16; Spaced: P6-W09; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains pushes, pulls and effects accurately using relevant evidence	forces, pushes, pulls, effects, identify, force, push, pull, state, can	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
18	1. Recognise magnetic, gravitational, elastic spring and frictional forces 2. Match each force to a familiar example 3. Distinguish contact and non-contact examples without requiring those labels 4. Identify more than one force acting in a context	Recent: P6-W16 to W17; Spaced: P6-W10; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains types of forces accurately using relevant evidence	forces, types, recognise, magnetic, gravitational, elastic, spring, frictional, match, each	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
19	1. State that gravitational force pulls objects towards Earth 2. Use gravitational force to explain falling 3. Distinguish gravitational force from a push by a person 4. Apply gravity to an unfamiliar situation	Recent: P6-W17 to W18; Spaced: P6-W11; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains gravitational force accurately using relevant evidence	forces, gravitational, force, state, pulls, objects, towards, earth, use, explain	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
20	1. State that friction acts against movement when surfaces move against each other 2. Identify useful and unwanted effects of friction 3. Predict how changing surfaces affects motion 4. Explain a motion change using friction	Recent: P6-W18 to W19; Spaced: P6-W12; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains frictional force accurately using relevant evidence	forces, frictional, force, state, friction, acts, against, movement, when, surfaces	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
21	1. Formulate a testable question about friction 2. Design a fair test of surface or load 3. Measure motion outcome consistently 4. Interpret friction data and evaluate the method	Recent: P6-W19 to W20; Spaced: P6-W13; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains investigating friction accurately using relevant evidence	forces, investigating, friction, formulate, testable, question, about, design, fair, test	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
22	1. Recognise elastic spring force when a spring is stretched or compressed 2. Relate added load to spring extension within tested conditions 3. Interpret a load-extension table or graph 4. Avoid predicting beyond the evidence	Recent: P6-W20 to W21; Spaced: P6-W14; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains elastic spring force accurately using relevant evidence	forces, elastic, spring, force, recognise, when, stretched, compressed, relate, added	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
23	1. Design a fair spring investigation 2. Measure extension from a consistent reference point 3. Record repeated measurements 4. Evaluate reliability and safety	Recent: P6-W21 to W22; Spaced: P6-W15; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains investigating springs accurately using relevant evidence	forces, investigating, springs, design, fair, spring, investigation, measure, extension, consistent	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
24	1. Infer the effect of forces acting in the same or opposite directions 2. Explain speeding up, slowing down or direction change 3. Interpret a force-effect diagram without requiring vector calculation 4. Revise an explanation when motion evidence changes	Recent: P6-W22 to W23; Spaced: P6-W16; Prerequisite: P3-W31-KP1; P3-W36-KP3	Explains combined effects of forces accurately using relevant evidence	forces, combined, effects, infer, effect, acting, same, opposite, directions, explain	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required
25	1. Identify temperature, light and water as physical survival factors 2. Identify food availability as a survival factor 3. Identify other organisms as survival factors 4. Use evidence to explain an organism's distribution	Recent: P6-W23 to W24; Spaced: P6-W17; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains environmental factors and survival accurately using relevant evidence	environment, environmental, factors, survival, identify, temperature, light, water, physical, food	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
26	1. Identify producers, consumers and decomposers 2. State each role in an environment 3. Classify an organism from information given 4. Explain why all three roles matter	Recent: P6-W24 to W25; Spaced: P6-W18; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains producers, consumers and decomposers accurately using relevant evidence	environment, producers, consumers, decomposers, identify, state, each, role, classify, organism	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
27	1. Construct a food chain with arrows showing energy pathway 2. Identify producer, consumer, predator and prey 3. Trace energy from the Sun through living things 4. Correct reversed or missing food-chain arrows	Recent: P6-W25 to W26; Spaced: P6-W19; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains food chains accurately using relevant evidence	environment, food, chains, construct, chain, arrows, showing, energy, pathway, identify	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
28	1. Combine connected food chains into a food web 2. Identify organisms with more than one food source 3. Predict a direct effect of a population change 4. Justify the prediction using linked feeding relationships	Recent: P6-W26 to W27; Spaced: P6-W20; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains food webs accurately using relevant evidence	environment, food, webs, combine, connected, chains, web, identify, organisms, more	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
29	1. Recognise that organisms may adapt and survive, move, or die 2. Relate an environmental change to survival factors 3. Compare possible organism responses 4. Avoid claiming every individual adapts immediately	Recent: P6-W27 to W28; Spaced: P6-W21; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains unfavourable environments accurately using relevant evidence	environment, unfavourable, environments, recognise, organisms, may, adapt, survive, move, die	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
30	1. Relate a structural or behavioural feature to survival 2. Use environment evidence to explain usefulness of a feature 3. Compare adaptations in two environments 4. Evaluate an unsupported adaptation claim	Recent: P6-W28 to W29; Spaced: P6-W22; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains adaptations and survival accurately using relevant evidence	environment, adaptations, survival, relate, structural, behavioural, feature, use, evidence, explain	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
31	1. Plan observations of environmental factors 2. Collect and record information consistently 3. Identify relationships without assuming causation 4. Evaluate limitations of field observations	Recent: P6-W29 to W30; Spaced: P6-W23; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains observing interacting factors accurately using relevant evidence	environment, observing, interacting, factors, plan, observations, environmental, collect, record, information	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
32	1. Explain effects of resource depletion and deforestation 2. Explain land, water and air pollution impacts 3. Explain global warming as a negative impact at syllabus level 4. Trace an impact through a food web or survival factor	Recent: P6-W30 to W31; Spaced: P6-W24; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains human negative impacts accurately using relevant evidence	environment, human, negative, impacts, explain, effects, resource, depletion, deforestation, land	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology

Week	Atomic KP Summary	Named Spiral Retrieval	Observable Behaviour	Vocabulary	Scope Boundary
33	1. Explain conservation as a positive impact 2. Explain reforestation as a positive impact 3. Compare environmental actions using evidence 4. Propose a responsible action and justify it	Recent: P6-W31 to W32; Spaced: P6-W25; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains human positive impacts accurately using relevant evidence	environment, human, positive, impacts, explain, conservation, impact, reforestation, compare, environmental	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
34	1. Predict consequences of increasing or decreasing one population 2. Trace direct and indirect effects in a food web 3. Distinguish evidence-based prediction from certainty 4. Revise a prediction when new information appears	Recent: P6-W32 to W33; Spaced: P6-W26; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Explains population-change reasoning accurately using relevant evidence	environment, population, change, reasoning, predict, consequences, increasing, decreasing, one, trace	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology
35	1. Retrieve magnets, light, heat, forces and environments 2. Identify interacting causes in a novel context 3. Use diagrams and data to explain an effect 4. Revise a causal explanation	Recent: P6-W33 to W34; Spaced: P6-W27; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Explains interactions retrieval accurately using relevant evidence	synthesis, interactions, retrieval, retrieve, magnets, light, heat, forces, environments, identify	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts
36	1. Retrieve light, heat, electricity, photosynthesis and conversions 2. Trace energy across topics 3. Interpret an energy-rich multi-part diagram 4. Evaluate an energy claim within syllabus scope	Recent: P6-W34 to W35; Spaced: P6-W28; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Explains energy retrieval accurately using relevant evidence	synthesis, energy, retrieval, retrieve, light, heat, electricity, photosynthesis, conversions, trace	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts
37	1. Formulate a testable question and hypothesis 2. Identify changed, measured and controlled variables 3. Choose suitable apparatus and measurement 4. Evaluate fairness, reliability and safety	Recent: P6-W35 to W36; Spaced: P6-W29; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Explains experimental design accurately using relevant evidence	synthesis, experimental, design, formulate, testable, question, hypothesis, identify, changed, measured	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts
38	1. Read tables, bar graphs and line graphs accurately 2. Describe patterns without overclaiming 3. Use data as evidence for a conclusion 4. Identify anomalous or insufficient evidence	Recent: P6-W36 to W37; Spaced: P6-W30; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Explains data and graph interpretation accurately using relevant evidence	synthesis, data, graph, interpretation, read, tables, bar, graphs, line, accurately	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts
39	1. Write a claim supported by relevant evidence 2. Connect evidence to a scientific principle 3. Compare an alternative explanation 4. Revise the claim when evidence conflicts	Recent: P6-W37 to W38; Spaced: P6-W31; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Explains evidence-based explanation accurately using relevant evidence	synthesis, evidence, based, explanation, write, claim, supported, relevant, connect, scientific	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts
40	1. Select relevant knowledge across themes 2. Apply knowledge to an unfamiliar multi-step situation 3. Communicate using words, diagrams, tables or graphs 4. Evaluate and improve a solution or model	Recent: P6-W38 to W39; Spaced: P6-W32; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Explains cumulative mastery and transfer accurately using relevant evidence	synthesis, cumulative, mastery, transfer, select, relevant, knowledge, across, themes, apply	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts

3. P6 Atomic KP Register - Atomic KP Content View

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P6-W01-KP1	1	Energy	Photosynthesis	Energy for life processes	1	Recognise that living things need energy to carry out life processes	Introduce	MOE Explicit Core	Know / Understand
P6-W01-KP2	1	Energy	Photosynthesis	Energy for life processes	2	State that respiration releases energy from food at the required level	Introduce	MOE Explicit Core	Explain / Interpret
P6-W01-KP3	1	Energy	Photosynthesis	Energy for life processes	3	Distinguish obtaining energy from obtaining food	Introduce	MOE Practice / Application	Apply / Analyse
P6-W01-KP4	1	Energy	Photosynthesis	Energy for life processes	4	Interpret a simple energy-for-life-process model	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P6-W02-KP1	2	Energy	Photosynthesis	Sun and ways organisms obtain energy	1	Recognise the Sun as the primary source of light and heat energy	Develop	MOE Explicit Core	Know / Understand
P6-W02-KP2	2	Energy	Photosynthesis	Sun and ways organisms obtain energy	2	Differentiate how plants and animals obtain energy	Develop	MOE Explicit Core	Explain / Interpret
P6-W02-KP3	2	Energy	Photosynthesis	Sun and ways organisms obtain energy	3	Trace a simple Sun-to-plant-to-animal energy pathway	Develop	MOE Practice / Application	Apply / Analyse
P6-W02-KP4	2	Energy	Photosynthesis	Sun and ways organisms obtain energy	4	Correct the claim that plants obtain food directly from soil	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W03-KP1	3	Energy	Photosynthesis	Photosynthesis overview	1	State that photosynthesis produces sugar and oxygen	Develop	MOE Explicit Core	Know / Understand
P6-W03-KP2	3	Energy	Photosynthesis	Photosynthesis overview	2	Identify water, light energy and carbon dioxide as requirements	Develop	MOE Explicit Core	Explain / Interpret
P6-W03-KP3	3	Energy	Photosynthesis	Photosynthesis overview	3	Represent requirements and products in an input-output model	Develop	MOE Practice / Application	Apply / Analyse
P6-W03-KP4	3	Energy	Photosynthesis	Photosynthesis overview	4	Communicate photosynthesis accurately using a word or input-output model	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W04-KP1	4	Energy	Photosynthesis	Requirement: light energy	1	Predict the effect of removing light from a photosynthesis investigation	Develop	MOE Explicit Core	Know / Understand
P6-W04-KP2	4	Energy	Photosynthesis	Requirement: light energy	2	Identify the changed and measured variables in a light investigation	Develop	MOE Explicit Core	Explain / Interpret
P6-W04-KP3	4	Energy	Photosynthesis	Requirement: light energy	3	Interpret evidence comparing a light and no-light setup	Develop	MOE Practice / Application	Apply / Analyse
P6-W04-KP4	4	Energy	Photosynthesis	Requirement: light energy	4	Evaluate whether the comparison is fair	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W05-KP1	5	Energy	Photosynthesis	Requirement: water	1	Predict the effect of insufficient water on photosynthesis evidence	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W05-KP2	5	Energy	Photosynthesis	Requirement: water	2	Control other variables when investigating water requirement	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W05-KP3	5	Energy	Photosynthesis	Requirement: water	3	Interpret observations without confusing wilting with direct proof of photosynthesis	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W05-KP4	5	Energy	Photosynthesis	Requirement: water	4	Improve a water-requirement investigation	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W06-KP1	6	Energy	Photosynthesis	Requirement: carbon dioxide	1	Predict the effect of limiting carbon dioxide in a photosynthesis investigation	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W06-KP2	6	Energy	Photosynthesis	Requirement: carbon dioxide	2	Identify a suitable comparison for carbon-dioxide availability	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W06-KP3	6	Energy	Photosynthesis	Requirement: carbon dioxide	3	Interpret provided data as evidence for a requirement	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W06-KP4	6	Energy	Photosynthesis	Requirement: carbon dioxide	4	State a conclusion limited to the evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W07-KP1	7	Energy	Photosynthesis	Products and evidence	1	Relate sugar production to stored or transported food	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W07-KP2	7	Energy	Photosynthesis	Products and evidence	2	Recognise oxygen as a product of photosynthesis	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W07-KP3	7	Energy	Photosynthesis	Products and evidence	3	Distinguish a product from a requirement	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W07-KP4	7	Energy	Photosynthesis	Products and evidence	4	Evaluate whether observations support a product claim	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W08-KP1	8	Energy	Photosynthesis	Photosynthesis mastery	1	Integrate requirements, products and energy in one model	Master / Transfer	MOE Explicit Core	Know / Understand
P6-W08-KP2	8	Energy	Photosynthesis	Photosynthesis mastery	2	Compare plant energy acquisition with animal energy acquisition	Master / Transfer	MOE Explicit Core	Explain / Interpret
P6-W08-KP3	8	Energy	Photosynthesis	Photosynthesis mastery	3	Evaluate an unfamiliar photosynthesis investigation	Master / Transfer	MOE Practice / Application	Apply / Analyse
P6-W08-KP4	8	Energy	Photosynthesis	Photosynthesis mastery	4	Construct a complete evidence-based explanation within P6 boundaries	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P6-W09-KP1	9	Energy	Energy forms and conversion	Energy forms	1	Recognise kinetic energy, potential energy, light energy, electrical energy, sound energy and heat energy	Introduce	MOE Explicit Core	Know / Understand
P6-W09-KP2	9	Energy	Energy forms and conversion	Energy forms	2	Identify energy forms in familiar objects	Introduce	MOE Explicit Core	Explain / Interpret
P6-W09-KP3	9	Energy	Energy forms and conversion	Energy forms	3	Distinguish an energy form from an energy source	Introduce	MOE Practice / Application	Apply / Analyse
P6-W09-KP4	9	Energy	Energy forms and conversion	Energy forms	4	Justify an identified energy form using observable evidence	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P6-W10-KP1	10	Energy	Energy forms and conversion	Energy resources and the Sun	1	Recognise that energy from most resources is derived in some way from the Sun	Develop	MOE Explicit Core	Know / Understand
P6-W10-KP2	10	Energy	Energy forms and conversion	Energy resources and the Sun	2	Trace solar energy into food, fuels or moving air at an appropriate level	Develop	MOE Explicit Core	Explain / Interpret
P6-W10-KP3	10	Energy	Energy forms and conversion	Energy resources and the Sun	3	Identify exceptions without overgeneralising	Develop	MOE Practice / Application	Apply / Analyse
P6-W10-KP4	10	Energy	Energy forms and conversion	Energy resources and the Sun	4	Evaluate a claim about the origin of energy in a context	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W11-KP1	11	Energy	Energy forms and conversion	Single-step conversions	1	State that energy can change from one form to another	Develop	MOE Explicit Core	Know / Understand
P6-W11-KP2	11	Energy	Energy forms and conversion	Single-step conversions	2	Identify input and output energy forms in a device	Develop	MOE Explicit Core	Explain / Interpret
P6-W11-KP3	11	Energy	Energy forms and conversion	Single-step conversions	3	Represent one conversion with arrows	Develop	MOE Practice / Application	Apply / Analyse
P6-W11-KP4	11	Energy	Energy forms and conversion	Single-step conversions	4	Distinguish useful output from the device itself	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W12-KP1	12	Energy	Energy forms and conversion	Multi-step conversions	1	Trace two or more energy conversions	Develop	MOE Explicit Core	Know / Understand
P6-W12-KP2	12	Energy	Energy forms and conversion	Multi-step conversions	2	Order conversion stages correctly	Develop	MOE Explicit Core	Explain / Interpret
P6-W12-KP3	12	Energy	Energy forms and conversion	Multi-step conversions	3	Interpret an energy-flow diagram	Develop	MOE Practice / Application	Apply / Analyse
P6-W12-KP4	12	Energy	Energy forms and conversion	Multi-step conversions	4	Correct a missing or wrongly labelled conversion	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W13-KP1	13	Energy	Energy forms and conversion	Responsible energy use	1	Identify intended and unintended energy outputs in a device	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W13-KP2	13	Energy	Energy forms and conversion	Responsible energy use	2	Explain why reducing unnecessary outputs supports responsible energy use	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W13-KP3	13	Energy	Energy forms and conversion	Responsible energy use	3	Compare two devices using provided qualitative evidence	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W13-KP4	13	Energy	Energy forms and conversion	Responsible energy use	4	Recommend an energy-responsible action using qualitative observations and provided evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W14-KP1	14	Energy	Energy forms and conversion	Energy conversion applications	1	Trace electrical energy to light, sound, heat or kinetic outputs	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W14-KP2	14	Energy	Energy forms and conversion	Energy conversion applications	2	Trace light energy from the Sun into an appropriate everyday context	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W14-KP3	14	Energy	Energy forms and conversion	Energy conversion applications	3	Interpret a multi-step conversion chain without relying on photosynthesis or food webs	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W14-KP4	14	Energy	Energy forms and conversion	Energy conversion applications	4	Correct an incomplete energy-conversion model using given evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W15-KP1	15	Energy	Energy forms and conversion	Investigating energy conversion	1	Plan an investigation of an energy conversion	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W15-KP2	15	Energy	Energy forms and conversion	Investigating energy conversion	2	Identify suitable observations or measurements	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W15-KP3	15	Energy	Energy forms and conversion	Investigating energy conversion	3	Record inputs and outputs clearly	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W15-KP4	15	Energy	Energy forms and conversion	Investigating energy conversion	4	Evaluate whether evidence shows the claimed conversion	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W16-KP1	16	Energy	Energy forms and conversion	Energy diagrams and data	1	Interpret energy-flow arrow diagrams without calculating efficiency	Master / Transfer	MOE Explicit Core	Know / Understand
P6-W16-KP2	16	Energy	Energy forms and conversion	Energy diagrams and data	2	Interpret tables or graphs of energy-related observations	Master / Transfer	MOE Explicit Core	Explain / Interpret
P6-W16-KP3	16	Energy	Energy forms and conversion	Energy diagrams and data	3	Compare two systems using given evidence	Master / Transfer	MOE Practice / Application	Apply / Analyse
P6-W16-KP4	16	Energy	Energy forms and conversion	Energy diagrams and data	4	Communicate a complete conversion chain	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P6-W17-KP1	17	Interactions	Forces	Pushes, pulls and effects	1	Identify a force as a push or pull	Introduce	MOE Explicit Core	Know / Understand
P6-W17-KP2	17	Interactions	Forces	Pushes, pulls and effects	2	State that a force can move a stationary object	Introduce	MOE Explicit Core	Explain / Interpret

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P6-W17-KP3	17	Interactions	Forces	Pushes, pulls and effects	3	State that a force can stop or change motion	Introduce	MOE Practice / Application	Apply / Analyse
P6-W17-KP4	17	Interactions	Forces	Pushes, pulls and effects	4	State that a force can change an object's shape	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P6-W18-KP1	18	Interactions	Forces	Types of forces	1	Recognise magnetic, gravitational, elastic spring and frictional forces	Develop	MOE Explicit Core	Know / Understand
P6-W18-KP2	18	Interactions	Forces	Types of forces	2	Match each force to a familiar example	Develop	MOE Explicit Core	Explain / Interpret
P6-W18-KP3	18	Interactions	Forces	Types of forces	3	Distinguish contact and non-contact examples without requiring those labels	Develop	MOE Practice / Application	Apply / Analyse
P6-W18-KP4	18	Interactions	Forces	Types of forces	4	Identify more than one force acting in a context	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W19-KP1	19	Interactions	Forces	Gravitational force	1	State that gravitational force pulls objects towards Earth	Develop	MOE Explicit Core	Know / Understand
P6-W19-KP2	19	Interactions	Forces	Gravitational force	2	Use gravitational force to explain falling	Develop	MOE Explicit Core	Explain / Interpret
P6-W19-KP3	19	Interactions	Forces	Gravitational force	3	Distinguish gravitational force from a push by a person	Develop	MOE Practice / Application	Apply / Analyse
P6-W19-KP4	19	Interactions	Forces	Gravitational force	4	Apply gravity to an unfamiliar situation	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W20-KP1	20	Interactions	Forces	Frictional force	1	State that friction acts against movement when surfaces move against each other	Develop	MOE Explicit Core	Know / Understand
P6-W20-KP2	20	Interactions	Forces	Frictional force	2	Identify useful and unwanted effects of friction	Develop	MOE Explicit Core	Explain / Interpret
P6-W20-KP3	20	Interactions	Forces	Frictional force	3	Predict how changing surfaces affects motion	Develop	MOE Practice / Application	Apply / Analyse
P6-W20-KP4	20	Interactions	Forces	Frictional force	4	Explain a motion change using friction	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W21-KP1	21	Interactions	Forces	Investigating friction	1	Formulate a testable question about friction	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W21-KP2	21	Interactions	Forces	Investigating friction	2	Design a fair test of surface or load	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W21-KP3	21	Interactions	Forces	Investigating friction	3	Measure motion outcome consistently	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W21-KP4	21	Interactions	Forces	Investigating friction	4	Interpret friction data and evaluate the method	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W22-KP1	22	Interactions	Forces	Elastic spring force	1	Recognise elastic spring force when a spring is stretched or compressed	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W22-KP2	22	Interactions	Forces	Elastic spring force	2	Relate added load to spring extension within tested conditions	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W22-KP3	22	Interactions	Forces	Elastic spring force	3	Interpret a load-extension table or graph	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W22-KP4	22	Interactions	Forces	Elastic spring force	4	Avoid predicting beyond the evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W23-KP1	23	Interactions	Forces	Investigating springs	1	Design a fair spring investigation	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W23-KP2	23	Interactions	Forces	Investigating springs	2	Measure extension from a consistent reference point	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W23-KP3	23	Interactions	Forces	Investigating springs	3	Record repeated measurements	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W23-KP4	23	Interactions	Forces	Investigating springs	4	Evaluate reliability and safety	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W24-KP1	24	Interactions	Forces	Combined effects of forces	1	Infer the effect of forces acting in the same or opposite directions	Master / Transfer	MOE Explicit Core	Know / Understand
P6-W24-KP2	24	Interactions	Forces	Combined effects of forces	2	Explain speeding up, slowing down or direction change	Master / Transfer	MOE Explicit Core	Explain / Interpret
P6-W24-KP3	24	Interactions	Forces	Combined effects of forces	3	Interpret a force-effect diagram without requiring vector calculation	Master / Transfer	MOE Practice / Application	Apply / Analyse
P6-W24-KP4	24	Interactions	Forces	Combined effects of forces	4	Revise an explanation when motion evidence changes	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve
P6-W25-KP1	25	Interactions	Environment	Environmental factors and survival	1	Identify temperature, light and water as physical survival factors	Introduce	MOE Explicit Core	Know / Understand
P6-W25-KP2	25	Interactions	Environment	Environmental factors and survival	2	Identify food availability as a survival factor	Introduce	MOE Explicit Core	Explain / Interpret
P6-W25-KP3	25	Interactions	Environment	Environmental factors and survival	3	Identify other organisms as survival factors	Introduce	MOE Practice / Application	Apply / Analyse
P6-W25-KP4	25	Interactions	Environment	Environmental factors and survival	4	Use evidence to explain an organism's distribution	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P6-W26-KP1	26	Interactions	Environment	Producers, consumers and decomposers	1	Identify producers, consumers and decomposers	Develop	MOE Explicit Core	Know / Understand
P6-W26-KP2	26	Interactions	Environment	Producers, consumers and decomposers	2	State each role in an environment	Develop	MOE Explicit Core	Explain / Interpret
P6-W26-KP3	26	Interactions	Environment	Producers, consumers and decomposers	3	Classify an organism from information given	Develop	MOE Practice / Application	Apply / Analyse
P6-W26-KP4	26	Interactions	Environment	Producers, consumers and decomposers	4	Explain why all three roles matter	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W27-KP1	27	Interactions	Environment	Food chains	1	Construct a food chain with arrows showing energy pathway	Develop	MOE Explicit Core	Know / Understand
P6-W27-KP2	27	Interactions	Environment	Food chains	2	Identify producer, consumer, predator and prey	Develop	MOE Explicit Core	Explain / Interpret
P6-W27-KP3	27	Interactions	Environment	Food chains	3	Trace energy from the Sun through living things	Develop	MOE Practice / Application	Apply / Analyse
P6-W27-KP4	27	Interactions	Environment	Food chains	4	Correct reversed or missing food-chain arrows	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W28-KP1	28	Interactions	Environment	Food webs	1	Combine connected food chains into a food web	Develop	MOE Explicit Core	Know / Understand
P6-W28-KP2	28	Interactions	Environment	Food webs	2	Identify organisms with more than one food source	Develop	MOE Explicit Core	Explain / Interpret
P6-W28-KP3	28	Interactions	Environment	Food webs	3	Predict a direct effect of a population change	Develop	MOE Practice / Application	Apply / Analyse
P6-W28-KP4	28	Interactions	Environment	Food webs	4	Justify the prediction using linked feeding relationships	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W29-KP1	29	Interactions	Environment	Unfavourable environments	1	Recognise that organisms may adapt and survive, move, or die	Develop	MOE Explicit Core	Know / Understand
P6-W29-KP2	29	Interactions	Environment	Unfavourable environments	2	Relate an environmental change to survival factors	Develop	MOE Explicit Core	Explain / Interpret
P6-W29-KP3	29	Interactions	Environment	Unfavourable environments	3	Compare possible organism responses	Develop	MOE Practice / Application	Apply / Analyse
P6-W29-KP4	29	Interactions	Environment	Unfavourable environments	4	Avoid claiming every individual adapts immediately	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W30-KP1	30	Interactions	Environment	Adaptations and survival	1	Relate a structural or behavioural feature to survival	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W30-KP2	30	Interactions	Environment	Adaptations and survival	2	Use environment evidence to explain usefulness of a feature	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W30-KP3	30	Interactions	Environment	Adaptations and survival	3	Compare adaptations in two environments	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W30-KP4	30	Interactions	Environment	Adaptations and survival	4	Evaluate an unsupported adaptation claim	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W31-KP1	31	Interactions	Environment	Observing interacting factors	1	Plan observations of environmental factors	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W31-KP2	31	Interactions	Environment	Observing interacting factors	2	Collect and record information consistently	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W31-KP3	31	Interactions	Environment	Observing interacting factors	3	Identify relationships without assuming causation	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W31-KP4	31	Interactions	Environment	Observing interacting factors	4	Evaluate limitations of field observations	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W32-KP1	32	Interactions	Environment	Human negative impacts	1	Explain effects of resource depletion and deforestation	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W32-KP2	32	Interactions	Environment	Human negative impacts	2	Explain land, water and air pollution impacts	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W32-KP3	32	Interactions	Environment	Human negative impacts	3	Explain global warming as a negative impact at syllabus level	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W32-KP4	32	Interactions	Environment	Human negative impacts	4	Trace an impact through a food web or survival factor	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W33-KP1	33	Interactions	Environment	Human positive impacts	1	Explain conservation as a positive impact	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W33-KP2	33	Interactions	Environment	Human positive impacts	2	Explain reforestation as a positive impact	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W33-KP3	33	Interactions	Environment	Human positive impacts	3	Compare environmental actions using evidence	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W33-KP4	33	Interactions	Environment	Human positive impacts	4	Propose a responsible action and justify it	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W34-KP1	34	Interactions	Environment	Population-change reasoning	1	Predict consequences of increasing or decreasing one population	Master / Transfer	MOE Explicit Core	Know / Understand
P6-W34-KP2	34	Interactions	Environment	Population-change reasoning	2	Trace direct and indirect effects in a food web	Master / Transfer	MOE Explicit Core	Explain / Interpret
P6-W34-KP3	34	Interactions	Environment	Population-change reasoning	3	Distinguish evidence-based prediction from certainty	Master / Transfer	MOE Practice / Application	Apply / Analyse
P6-W34-KP4	34	Interactions	Environment	Population-change reasoning	4	Revise a prediction when new information appears	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve

KP ID	Week	Theme	Topic	Weekly Focus	No.	Atomic Knowledge Point	Stage	Status	Cognitive Demand
P6-W35-KP1	35	Integration	P3-P6 synthesis	Interactions retrieval	1	Retrieve magnets, light, heat, forces and environments	Introduce	MOE Explicit Core	Know / Understand
P6-W35-KP2	35	Integration	P3-P6 synthesis	Interactions retrieval	2	Identify interacting causes in a novel context	Introduce	MOE Explicit Core	Explain / Interpret
P6-W35-KP3	35	Integration	P3-P6 synthesis	Interactions retrieval	3	Use diagrams and data to explain an effect	Introduce	MOE Practice / Application	Apply / Analyse
P6-W35-KP4	35	Integration	P3-P6 synthesis	Interactions retrieval	4	Revise a causal explanation	Introduce	MOE Transfer / Evaluation	Evaluate / Improve
P6-W36-KP1	36	Integration	P3-P6 synthesis	Energy retrieval	1	Retrieve light, heat, electricity, photosynthesis and conversions	Develop	MOE Explicit Core	Know / Understand
P6-W36-KP2	36	Integration	P3-P6 synthesis	Energy retrieval	2	Trace energy across topics	Develop	MOE Explicit Core	Explain / Interpret
P6-W36-KP3	36	Integration	P3-P6 synthesis	Energy retrieval	3	Interpret an energy-rich multi-part diagram	Develop	MOE Practice / Application	Apply / Analyse
P6-W36-KP4	36	Integration	P3-P6 synthesis	Energy retrieval	4	Evaluate an energy claim within syllabus scope	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W37-KP1	37	Integration	P3-P6 synthesis	Experimental design	1	Formulate a testable question and hypothesis	Develop	MOE Explicit Core	Know / Understand
P6-W37-KP2	37	Integration	P3-P6 synthesis	Experimental design	2	Identify changed, measured and controlled variables	Develop	MOE Explicit Core	Explain / Interpret
P6-W37-KP3	37	Integration	P3-P6 synthesis	Experimental design	3	Choose suitable apparatus and measurement	Develop	MOE Practice / Application	Apply / Analyse
P6-W37-KP4	37	Integration	P3-P6 synthesis	Experimental design	4	Evaluate fairness, reliability and safety	Develop	MOE Transfer / Evaluation	Evaluate / Improve
P6-W38-KP1	38	Integration	P3-P6 synthesis	Data and graph interpretation	1	Read tables, bar graphs and line graphs accurately	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W38-KP2	38	Integration	P3-P6 synthesis	Data and graph interpretation	2	Describe patterns without overclaiming	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W38-KP3	38	Integration	P3-P6 synthesis	Data and graph interpretation	3	Use data as evidence for a conclusion	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W38-KP4	38	Integration	P3-P6 synthesis	Data and graph interpretation	4	Identify anomalous or insufficient evidence	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W39-KP1	39	Integration	P3-P6 synthesis	Evidence-based explanation	1	Write a claim supported by relevant evidence	Apply / Consolidate	MOE Explicit Core	Know / Understand
P6-W39-KP2	39	Integration	P3-P6 synthesis	Evidence-based explanation	2	Connect evidence to a scientific principle	Apply / Consolidate	MOE Explicit Core	Explain / Interpret
P6-W39-KP3	39	Integration	P3-P6 synthesis	Evidence-based explanation	3	Compare an alternative explanation	Apply / Consolidate	MOE Practice / Application	Apply / Analyse
P6-W39-KP4	39	Integration	P3-P6 synthesis	Evidence-based explanation	4	Revise the claim when evidence conflicts	Apply / Consolidate	MOE Transfer / Evaluation	Evaluate / Improve
P6-W40-KP1	40	Integration	P3-P6 synthesis	Cumulative mastery and transfer	1	Select relevant knowledge across themes	Master / Transfer	MOE Explicit Core	Know / Understand
P6-W40-KP2	40	Integration	P3-P6 synthesis	Cumulative mastery and transfer	2	Apply knowledge to an unfamiliar multi-step situation	Master / Transfer	MOE Explicit Core	Explain / Interpret
P6-W40-KP3	40	Integration	P3-P6 synthesis	Cumulative mastery and transfer	3	Communicate using words, diagrams, tables or graphs	Master / Transfer	MOE Practice / Application	Apply / Analyse
P6-W40-KP4	40	Integration	P3-P6 synthesis	Cumulative mastery and transfer	4	Evaluate and improve a solution or model	Master / Transfer	MOE Transfer / Evaluation	Evaluate / Improve

3. P6 Atomic KP Register - Assessment, Retrieval and Scope View

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P6-W01-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: none; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately recognise that living things need energy to carry out life processes, using relevant observation, data or model evidence	photosynthesis, energy, life, processes, recognise, living, things, need, carry, out	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W01-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: none; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately state that respiration releases energy from food at the required level, using relevant observation, data or model evidence	photosynthesis, energy, life, processes, state, respiration, releases, food, required, level	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W01-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: none; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately distinguish obtaining energy from obtaining food, using relevant observation, data or model evidence	photosynthesis, energy, life, processes, distinguish, obtaining, food	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W01-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: none; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately interpret a simple energy-for-life-process model, using relevant observation, data or model evidence	photosynthesis, energy, life, processes, interpret, simple, process, model	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W02-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W01 to W01; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately recognise the Sun as the primary source of light and heat energy, using relevant observation, data or model evidence	photosynthesis, sun, ways, organisms, obtain, energy, recognise, primary, source, light	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W02-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W01 to W01; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately differentiate how plants and animals obtain energy, using relevant observation, data or model evidence	photosynthesis, sun, ways, organisms, obtain, energy, differentiate, how, plants, animals	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W02-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W01 to W01; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately trace a simple Sun-to-plant-to-animal energy pathway, using relevant observation, data or model evidence	photosynthesis, sun, ways, organisms, obtain, energy, trace, simple, plant, animal	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W02-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W01 to W01; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately correct the claim that plants obtain food directly from soil, using relevant observation, data or model evidence	photosynthesis, sun, ways, organisms, obtain, energy, correct, claim, plants, food	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W03-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W01 to W02; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately state that photosynthesis produces sugar and oxygen, using relevant observation, data or model evidence	photosynthesis, overview, state, produces, sugar, oxygen	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W03-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W01 to W02; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately identify water, light energy and carbon dioxide as requirements, using relevant observation, data or model evidence	photosynthesis, overview, identify, water, light, energy, carbon, dioxide, requirements	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W03-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W01 to W02; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately represent requirements and products in an input-output model, using relevant observation, data or model evidence	photosynthesis, overview, represent, requirements, products, input, output, model	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W03-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W01 to W02; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately communicate photosynthesis accurately using a word or input-output model, using relevant observation, data or model evidence	photosynthesis, overview, communicate, accurately, word, input, output, model	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W04-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W02 to W03; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately predict the effect of removing light from a photosynthesis investigation, using relevant observation, data or model evidence	photosynthesis, requirement, light, energy, predict, effect, removing, investigation	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W04-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W02 to W03; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately identify the changed and measured variables in a light investigation, using relevant observation, data or model evidence	photosynthesis, requirement, light, energy, identify, changed, measured, variables, investigation	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W04-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W02 to W03; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately interpret evidence comparing a light and no-light setup, using relevant observation, data or model evidence	photosynthesis, requirement, light, energy, interpret, evidence, comparing, setup	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W04-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W02 to W03; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately evaluate whether the comparison is fair, using relevant observation, data or model evidence	photosynthesis, requirement, light, energy, evaluate, whether, comparison, fair	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W05-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W03 to W04; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately predict the effect of insufficient water on photosynthesis evidence, using relevant observation, data or model evidence	photosynthesis, requirement, water, predict, effect, insufficient, evidence	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W05-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W03 to W04; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately control other variables when investigating water requirement, using relevant observation, data or model evidence	photosynthesis, requirement, water, control, other, variables, when, investigating	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W05-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W03 to W04; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately interpret observations without confusing willing with direct proof of photosynthesis, using relevant observation, data or model evidence	photosynthesis, requirement, water, interpret, observations, without, confusing, willing, direct, proof	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W05-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W03 to W04; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately improve a water-requirement investigation, using relevant observation, data or model evidence	photosynthesis, requirement, water, improve, investigation	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W06-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W04 to W05; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately predict the effect of limiting carbon dioxide in a photosynthesis investigation, using relevant observation, data or model evidence	photosynthesis, requirement, carbon, dioxide, predict, effect, limiting, investigation	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W06-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W04 to W05; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately identify a suitable comparison for carbon-dioxide availability, using relevant observation, data or model evidence	photosynthesis, requirement, carbon, dioxide, identify, suitable, comparison, availability	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W06-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W04 to W05; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately interpret provided data as evidence for a requirement, using relevant observation, data or model evidence	photosynthesis, requirement, carbon, dioxide, interpret, provided, data, evidence	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W06-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W04 to W05; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately state a conclusion limited to the evidence, using relevant observation, data or model evidence	photosynthesis, requirement, carbon, dioxide, state, conclusion, limited, evidence	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P6-W07-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W05 to W06; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately relate sugar production to stored or transported food, using relevant observation, data or model evidence	photosynthesis, products, evidence, relate, sugar, production, stored, transported, food	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W07-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W05 to W06; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately recognise oxygen as a product of photosynthesis, using relevant observation, data or model evidence	photosynthesis, products, evidence, recognise, oxygen, product	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W07-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W05 to W06; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately distinguish a product from a requirement, using relevant observation, data or model evidence	photosynthesis, products, evidence, distinguish, product, requirement	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W07-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W05 to W06; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately evaluate whether observations support a product claim, using relevant observation, data or model evidence	photosynthesis, products, evidence, evaluate, whether, observations, support, product, claim	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W08-KP1	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W06 to W07; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately integrate requirements, products and energy in one model, using relevant observation, data or model evidence	photosynthesis, mastery, integrate, requirements, products, energy, one, model	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W08-KP2	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W06 to W07; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately compare plant energy acquisition with animal energy acquisition, using relevant observation, data or model evidence	photosynthesis, mastery, compare, plant, energy, acquisition, animal	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W08-KP3	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W06 to W07; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately evaluate an unfamiliar photosynthesis investigation, using relevant observation, data or model evidence	photosynthesis, mastery, evaluate, unfamiliar, investigation	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W08-KP4	Observe; interpret; investigate; model; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W06 to W07; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Accurately construct a complete evidence-based explanation within P6 boundaries, using relevant observation, data or model evidence	photosynthesis, mastery, construct, complete, evidence, based, explanation, within, boundaries	P6 boundary: chemical equations, chloroplast details and cellular-respiration mechanisms are not required	Verified against V7 compliance register
P6-W09-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W07 to W08; Spaced: P6-W01; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately recognise kinetic energy, potential energy, light energy, electrical energy, sound energy and heat energy, using relevant observation, data or model evidence	energy, forms, conversion, recognise, kinetic, potential, light, electrical, sound, heat	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W09-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W07 to W08; Spaced: P6-W01; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately identify energy forms in familiar objects, using relevant observation, data or model evidence	energy, forms, conversion, identify, familiar, objects	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W09-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W07 to W08; Spaced: P6-W01; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately distinguish an energy form from an energy source, using relevant observation, data or model evidence	energy, forms, conversion, distinguish, form, source	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W09-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W07 to W08; Spaced: P6-W01; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately justify an identified energy form using observable evidence, using relevant observation, data or model evidence	energy, forms, conversion, justify, identified, form, observable, evidence	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W10-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W08 to W09; Spaced: P6-W02; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately recognise that energy from most resources is derived in some way from the Sun, using relevant observation, data or model evidence	energy, forms, conversion, resources, sun, recognise, most, derived, some, way	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W10-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W08 to W09; Spaced: P6-W02; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately trace solar energy into food, fuels or moving air at an appropriate level, using relevant observation, data or model evidence	energy, forms, conversion, resources, sun, trace, solar, food, fuels, moving	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W10-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W08 to W09; Spaced: P6-W02; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately identify exceptions without overgeneralising, using relevant observation, data or model evidence	energy, forms, conversion, resources, sun, identify, exceptions, without, overgeneralising	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W10-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W08 to W09; Spaced: P6-W02; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately evaluate a claim about the origin of energy in a context, using relevant observation, data or model evidence	energy, forms, conversion, resources, sun, evaluate, claim, about, origin, context	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W11-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W09 to W10; Spaced: P6-W03; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately state that energy can change from one form to another, using relevant observation, data or model evidence	energy, forms, conversion, single, step, conversions, state, can, change, one	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W11-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W09 to W10; Spaced: P6-W03; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately identify input and output energy forms in a device, using relevant observation, data or model evidence	energy, forms, conversion, single, step, conversions, identify, input, output, device	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W11-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W09 to W10; Spaced: P6-W03; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately represent one conversion with arrows, using relevant observation, data or model evidence	energy, forms, conversion, single, step, conversions, represent, one, arrows	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W11-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W09 to W10; Spaced: P6-W03; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately distinguish useful output from the device itself, using relevant observation, data or model evidence	energy, forms, conversion, single, step, conversions, distinguish, useful, output, device	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W12-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W10 to W11; Spaced: P6-W04; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately trace two or more energy conversions, using relevant observation, data or model evidence	energy, forms, conversion, multi, step, conversions, trace, two, more	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W12-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W10 to W11; Spaced: P6-W04; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately order conversion stages correctly, using relevant observation, data or model evidence	energy, forms, conversion, multi, step, conversions, order, stages, correctly	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W12-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W10 to W11; Spaced: P6-W04; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately interpret an energy-flow diagram, using relevant observation, data or model evidence	energy, forms, conversion, multi, step, conversions, interpret, flow, diagram	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W12-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W10 to W11; Spaced: P6-W04; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately correct a missing or wrongly labelled conversion, using relevant observation, data or model evidence	energy, forms, conversion, multi, step, conversions, correct, missing, wrongly, labelled	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W13-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Short response	Recent: P6-W11 to W12; Spaced: P6-W05; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately identify intended and unintended energy outputs in a device, using relevant observation, data or model evidence	energy, forms, conversion, responsible, use, identify, intended, unintended, outputs, device	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W13-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Diagram / table / graph response	Recent: P6-W11 to W12; Spaced: P6-W05; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately explain why reducing unnecessary outputs supports responsible energy use, using relevant observation, data or model evidence	energy, forms, conversion, responsible, use, explain, why, reducing, unnecessary, outputs	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W13-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Constructed explanation	Recent: P6-W11 to W12; Spaced: P6-W05; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately compare two devices using provided qualitative evidence, using relevant observation, data or model evidence	energy, forms, conversion, responsible, use, compare, two, devices, provided, qualitative	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W13-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Method / model critique	Recent: P6-W11 to W12; Spaced: P6-W05; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately recommend an energy-responsible action using qualitative observations and provided evidence, using relevant observation, data or model evidence	energy, forms, conversion, responsible, use, recommend, action, qualitative, observations, provided	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W14-KP1	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Short response	Recent: P6-W12 to W13; Spaced: P6-W06; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately trace electrical energy to light, sound, heat or kinetic outputs, using relevant observation, data or model evidence	energy, forms, conversion, applications, trace, electrical, light, sound, heat, kinetic	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P6-W14-KP2	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Diagram / table / graph response	Recent: P6-W12 to W13; Spaced: P6-W06; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately trace light energy from the Sun into an appropriate everyday context, using relevant observation, data or model evidence	energy, forms, conversion, applications, trace, light, sun, appropriate, everyday, context	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W14-KP3	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Constructed explanation	Recent: P6-W12 to W13; Spaced: P6-W06; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately interpret a multi-step conversion chain without relying on photosynthesis or food webs, using relevant observation, data or model evidence	energy, forms, conversion, applications, interpret, multi, step, chain, without, relying	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W14-KP4	Interpret; investigate; evaluate; communicate	Objectivity; responsibility	Method / model critique	Recent: P6-W12 to W13; Spaced: P6-W06; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately correct an incomplete energy-conversion model using given evidence, using relevant observation, data or model evidence	energy, forms, conversion, applications, correct, incomplete, model, given, evidence	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W15-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W13 to W14; Spaced: P6-W07; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately plan an investigation of an energy conversion, using relevant observation, data or model evidence	energy, forms, conversion, investigating, plan, investigation	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W15-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W13 to W14; Spaced: P6-W07; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately identify suitable observations or measurements, using relevant observation, data or model evidence	energy, forms, conversion, investigating, identify, suitable, observations, measurements	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W15-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W13 to W14; Spaced: P6-W07; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately record inputs and outputs clearly, using relevant observation, data or model evidence	energy, forms, conversion, investigating, record, inputs, outputs, clearly	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W15-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W13 to W14; Spaced: P6-W07; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately evaluate whether evidence shows the claimed conversion, using relevant observation, data or model evidence	energy, forms, conversion, investigating, evaluate, whether, evidence, shows, claimed evidence	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W16-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W14 to W15; Spaced: P6-W08; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately interpret energy-flow arrow diagrams without calculating efficiency, using relevant observation, data or model evidence	energy, forms, conversion, diagrams, data, interpret, flow, arrow, without, calculating	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W16-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W14 to W15; Spaced: P6-W08; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately interpret tables or graphs of energy-related observations, using relevant observation, data or model evidence	energy, forms, conversion, diagrams, data, interpret, tables, graphs, related, observations	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W16-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W14 to W15; Spaced: P6-W08; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately compare two systems using given evidence, using relevant observation, data or model evidence	energy, forms, conversion, diagrams, data, compare, two, systems, given, evidence	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W16-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W14 to W15; Spaced: P6-W08; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Accurately communicate a complete conversion chain, using relevant observation, data or model evidence	energy, forms, conversion, diagrams, data, communicate, complete, chain	P6 boundary: chemical/gravitational/elastic potential terms and efficiency calculations are not required	Verified against V7 compliance register
P6-W17-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W15 to W16; Spaced: P6-W09; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately identify a force as a push or pull, using relevant observation, data or model evidence	forces, pushes, pulls, effects, identify, force, push, pull	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W17-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W15 to W16; Spaced: P6-W09; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately state that a force can move a stationary object, using relevant observation, data or model evidence	forces, pushes, pulls, effects, state, force, can, move, stationary, object	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W17-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W15 to W16; Spaced: P6-W09; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately state that a force can stop or change motion, using relevant observation, data or model evidence	forces, pushes, pulls, effects, state, force, can, stop, change, motion	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W17-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W15 to W16; Spaced: P6-W09; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately state that a force can change an object's shape, using relevant observation, data or model evidence	forces, pushes, pulls, effects, state, force, can, change, object, shape	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W18-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W16 to W17; Spaced: P6-W10; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately recognise magnetic, gravitational, elastic spring and frictional forces, using relevant observation, data or model evidence	forces, types, recognise, magnetic, gravitational, elastic, spring, frictional	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W18-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W16 to W17; Spaced: P6-W10; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately match each force to a familiar example, using relevant observation, data or model evidence	forces, types, match, each, force, familiar, example	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W18-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W16 to W17; Spaced: P6-W10; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately distinguish contact and non-contact examples without requiring those labels, using relevant observation, data or model evidence	forces, types, distinguish, contact, non, examples, without, requiring, those, labels	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W18-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W16 to W17; Spaced: P6-W10; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately identify more than one force acting in a context, using relevant observation, data or model evidence	forces, types, identify, more, than, one, force, acting, context	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W19-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W17 to W18; Spaced: P6-W11; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately state that gravitational force pulls objects towards Earth, using relevant observation, data or model evidence	forces, gravitational, force, state, pulls, objects, towards, earth	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W19-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W17 to W18; Spaced: P6-W11; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately use gravitational force to explain falling, using relevant observation, data or model evidence	forces, gravitational, force, use, explain, falling	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W19-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W17 to W18; Spaced: P6-W11; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately distinguish gravitational force from a push by a person, using relevant observation, data or model evidence	forces, gravitational, force, distinguish, push, person	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W19-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W17 to W18; Spaced: P6-W11; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately apply gravity to an unfamiliar situation, using relevant observation, data or model evidence	forces, gravitational, force, apply, gravity, unfamiliar, situation	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W20-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W18 to W19; Spaced: P6-W12; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately state that friction acts against movement when surfaces move against each other, using relevant observation, data or model evidence	forces, frictional, force, state, friction, acts, against, movement, when, surfaces	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W20-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W18 to W19; Spaced: P6-W12; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately identify useful and unwanted effects of friction, using relevant observation, data or model evidence	forces, frictional, force, identify, useful, unwanted, effects, friction	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W20-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W18 to W19; Spaced: P6-W12; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately predict how changing surfaces affects motion, using relevant observation, data or model evidence	forces, frictional, force, predict, how, changing, surfaces, affects, motion	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W20-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W18 to W19; Spaced: P6-W12; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately explain a motion change using friction, using relevant observation, data or model evidence	forces, frictional, force, explain, motion, change, friction	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W21-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W19 to W20; Spaced: P6-W13; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately formulate a testable question about friction, using relevant observation, data or model evidence	forces, investigating, friction, formulate, testable, question, about	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W21-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W19 to W20; Spaced: P6-W13; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately design a fair test of surface or load, using relevant observation, data or model evidence	forces, investigating, friction, design, fair, test, surface, load	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W21-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W19 to W20; Spaced: P6-W13; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately measure motion outcome consistently, using relevant observation, data or model evidence	forces, investigating, friction, measure, motion, outcome, consistently	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W21-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W19 to W20; Spaced: P6-W13; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately interpret friction data and evaluate the method, using relevant observation, data or model evidence	forces, investigating, friction, interpret, data, evaluate, method	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P6-W22-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W20 to W21; Spaced: P6-W14; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately recognise elastic spring force when a spring is stretched or compressed, using relevant observation, data or model evidence	forces, elastic, spring, force, recognise, when, stretched, compressed	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W22-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W20 to W21; Spaced: P6-W14; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately relate added load to spring extension within tested conditions, using relevant observation, data or model evidence	forces, elastic, spring, force, relate, added, load, extension, within, tested	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W22-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W20 to W21; Spaced: P6-W14; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately interpret a load-extension table or graph, using relevant observation, data or model evidence	forces, elastic, spring, force, interpret, load, extension, table, graph	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W22-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W20 to W21; Spaced: P6-W14; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately avoid predicting beyond the evidence, using relevant observation, data or model evidence	forces, elastic, spring, force, avoid, predicting, beyond, evidence	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W23-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W21 to W22; Spaced: P6-W15; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately design a fair spring investigation, using relevant observation, data or model evidence	forces, investigating, springs, design, fair, spring, investigation	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W23-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W21 to W22; Spaced: P6-W15; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately measure extension from a consistent reference point, using relevant observation, data or model evidence	forces, investigating, springs, measure, extension, consistent, reference, point	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W23-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W21 to W22; Spaced: P6-W15; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately record repeated measurements, using relevant observation, data or model evidence	forces, investigating, springs, record, repeated, measurements	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W23-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W21 to W22; Spaced: P6-W15; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately evaluate reliability and safety, using relevant observation, data or model evidence	forces, investigating, springs, evaluate, reliability, safety	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W24-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W22 to W23; Spaced: P6-W16; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately infer the effect of forces acting in the same or opposite directions, using relevant observation, data or model evidence	forces, combined, effects, infer, effect, acting, same, opposite, directions	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W24-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W22 to W23; Spaced: P6-W16; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately explain speeding up, slowing down or direction change, using relevant observation, data or model evidence	forces, combined, effects, explain, speeding, slowing, down, direction, change	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W24-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W22 to W23; Spaced: P6-W16; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately interpret a force-effect diagram without requiring vector calculation, using relevant observation, data or model evidence	forces, combined, effects, interpret, force, effect, diagram, without, requiring, vector	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W24-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W22 to W23; Spaced: P6-W16; Prerequisite: P3-W31-KP1; P3-W36-KP3	Accurately revise an explanation when motion evidence changes, using relevant observation, data or model evidence	forces, combined, effects, revise, explanation, when, motion, evidence, changes	P6 boundary: rolling-object friction direction and required air-/water-resistance terminology are not required	Verified against V7 compliance register
P6-W25-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P6-W23 to W24; Spaced: P6-W17; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify temperature, light and water as physical survival factors, using relevant observation, data or model evidence	environment, environmental, factors, survival, identify, temperature, light, water, physical	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W25-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W23 to W24; Spaced: P6-W17; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify food availability as a survival factor, using relevant observation, data or model evidence	environment, environmental, factors, survival, identify, food, availability, factor	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W25-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W23 to W24; Spaced: P6-W17; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify other organisms as survival factors, using relevant observation, data or model evidence	environment, environmental, factors, survival, identify, other, organisms	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W25-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W23 to W24; Spaced: P6-W17; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately use evidence to explain an organism's distribution, using relevant observation, data or model evidence	environment, environmental, factors, survival, use, evidence, explain, organism, distribution	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W26-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P6-W24 to W25; Spaced: P6-W18; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify producers, consumers and decomposers, using relevant observation, data or model evidence	environment, producers, consumers, decomposers, identify	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W26-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W24 to W25; Spaced: P6-W18; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately state each role in an environment, using relevant observation, data or model evidence	environment, producers, consumers, decomposers, state, each, role	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W26-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W24 to W25; Spaced: P6-W18; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately classify an organism from information given, using relevant observation, data or model evidence	environment, producers, consumers, decomposers, classify, organism, information, given	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W26-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W24 to W25; Spaced: P6-W18; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately explain why all three roles matter, using relevant observation, data or model evidence	environment, producers, consumers, decomposers, explain, why, all, three, roles, matter	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W27-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P6-W25 to W26; Spaced: P6-W19; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately construct a food chain with arrows showing energy pathway, using relevant observation, data or model evidence	environment, food, chains, construct, chain, arrows, showing, energy, pathway	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W27-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W25 to W26; Spaced: P6-W19; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify producer, consumer, predator and prey, using relevant observation, data or model evidence	environment, food, chains, identify, producer, consumer, predator, prey	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W27-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W25 to W26; Spaced: P6-W19; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately trace energy from the Sun through living things, using relevant observation, data or model evidence	environment, food, chains, trace, energy, sun, through, living, things	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W27-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W25 to W26; Spaced: P6-W19; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately correct reversed or missing food-chain arrows, using relevant observation, data or model evidence	environment, food, chains, correct, reversed, missing, chain, arrows	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W28-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P6-W26 to W27; Spaced: P6-W20; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately combine connected food chains into a food web, using relevant observation, data or model evidence	environment, food, webs, combine, connected, chains, web	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W28-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W26 to W27; Spaced: P6-W20; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify organisms with more than one food source, using relevant observation, data or model evidence	environment, food, webs, identify, organisms, more, than, one, source	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W28-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W26 to W27; Spaced: P6-W20; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately predict a direct effect of a population change, using relevant observation, data or model evidence	environment, food, webs, predict, direct, effect, population, change	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W28-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W26 to W27; Spaced: P6-W20; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately justify the prediction using linked feeding relationships, using relevant observation, data or model evidence	environment, food, webs, justify, prediction, linked, feeding, relationships	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W29-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P6-W27 to W28; Spaced: P6-W21; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately recognise that organisms may adapt and survive, move, or die, using relevant observation, data or model evidence	environment, unfavourable, environments, recognise, organisms, may, adapt, survive, move, die	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W29-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W27 to W28; Spaced: P6-W21; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately relate an environmental change to survival factors, using relevant observation, data or model evidence	environment, unfavourable, environments, relate, environmental, change, survival, factors	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W29-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W27 to W28; Spaced: P6-W21; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately compare possible organism responses, using relevant observation, data or model evidence	environment, unfavourable, environments, compare, possible, organism, responses	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P6-W29-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W27 to W28; Spaced: P6-W21; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately avoid claiming every individual adapts immediately, using relevant observation, data or model evidence	environment, unfavourable, environments, avoid, claiming, every, individual, adapts, immediately	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W30-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P6-W28 to W29; Spaced: P6-W22; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately relate a structural or behavioural feature to survival, using relevant observation, data or model evidence	environment, adaptations, survival, relate, structural, behavioural, feature	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W30-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W28 to W29; Spaced: P6-W22; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately use environment evidence to explain usefulness of a feature, using relevant observation, data or model evidence	environment, adaptations, survival, use, evidence, explain, usefulness, feature	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W30-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W28 to W29; Spaced: P6-W22; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately compare adaptations in two environments, using relevant observation, data or model evidence	environment, adaptations, survival, compare, two, environments	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W30-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W28 to W29; Spaced: P6-W22; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately evaluate an unsupported adaptation claim, using relevant observation, data or model evidence	environment, adaptations, survival, evaluate, unsupported, adaptation, claim	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W31-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P6-W29 to W30; Spaced: P6-W23; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately plan observations of environmental factors, using relevant observation, data or model evidence	environment, observing, interacting, factors, plan, observations, environmental	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W31-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W29 to W30; Spaced: P6-W23; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately collect and record information consistently, using relevant observation, data or model evidence	environment, observing, interacting, factors, collect, record, information, consistently	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W31-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W29 to W30; Spaced: P6-W23; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately identify relationships without assuming causation, using relevant observation, data or model evidence	environment, observing, interacting, factors, identify, relationships, without, assuming, causation	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W31-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W29 to W30; Spaced: P6-W23; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately evaluate limitations of field observations, using relevant observation, data or model evidence	environment, observing, interacting, factors, evaluate, limitations, field, observations	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W32-KP1	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Short response	Recent: P6-W30 to W31; Spaced: P6-W24; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately explain effects of resource depletion and deforestation, using relevant observation, data or model evidence	environment, human, negative, impacts, explain, effects, resource, depletion, deforestation	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W32-KP2	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W30 to W31; Spaced: P6-W24; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately explain land, water and air pollution impacts, using relevant observation, data or model evidence	environment, human, negative, impacts, explain, land, water, air, pollution	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W32-KP3	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W30 to W31; Spaced: P6-W24; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately explain global warming as a negative impact at syllabus level, using relevant observation, data or model evidence	environment, human, negative, impacts, explain, global, warming, impact, syllabus, level	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W32-KP4	Observe; infer; explain; apply	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W30 to W31; Spaced: P6-W24; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately trace an impact through a food web or survival factor, using relevant observation, data or model evidence	environment, human, negative, impacts, trace, impact, through, food, web, survival	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W33-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P6-W31 to W32; Spaced: P6-W25; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately explain conservation as a positive impact, using relevant observation, data or model evidence	environment, human, positive, impacts, explain, conservation, impact	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W33-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W31 to W32; Spaced: P6-W25; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately explain reforestation as a positive impact, using relevant observation, data or model evidence	environment, human, positive, impacts, explain, reforestation, impact	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W33-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W31 to W32; Spaced: P6-W25; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately compare environmental actions using evidence, using relevant observation, data or model evidence	environment, human, positive, impacts, compare, environmental, actions, evidence	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W33-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W31 to W32; Spaced: P6-W25; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately propose a responsible action and justify it, using relevant observation, data or model evidence	environment, human, positive, impacts, propose, responsible, action, justify	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W34-KP1	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Short response	Recent: P6-W32 to W33; Spaced: P6-W26; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately predict consequences of increasing or decreasing one population, using relevant observation, data or model evidence	environment, population, change, reasoning, predict, consequences, increasing, decreasing, one	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W34-KP2	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Diagram / table / graph response	Recent: P6-W32 to W33; Spaced: P6-W26; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately trace direct and indirect effects in a food web, using relevant observation, data or model evidence	environment, population, change, reasoning, trace, direct, indirect, effects, food, web	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W34-KP3	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Constructed explanation	Recent: P6-W32 to W33; Spaced: P6-W26; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately distinguish evidence-based prediction from certainty, using relevant observation, data or model evidence	environment, population, change, reasoning, distinguish, evidence, based, prediction, certainty	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W34-KP4	Interpret; analyse; communicate	Curiosity; responsibility; care and concern	Method / model critique	Recent: P6-W32 to W33; Spaced: P6-W26; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Accurately revise a prediction when new information appears, using relevant observation, data or model evidence	environment, population, change, reasoning, revise, prediction, when, new, information, appears	P6 boundary: avoid detailed biogeochemical cycles and secondary-level ecology terminology	Verified against V7 compliance register
P6-W35-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W33 to W34; Spaced: P6-W27; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately retrieve magnets, light, heat, forces and environments, using relevant observation, data or model evidence	synthesis, interactions, retrieval, retrieve, magnets, light, heat, forces, environments	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W35-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W33 to W34; Spaced: P6-W27; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately identify interacting causes in a novel context, using relevant observation, data or model evidence	synthesis, interactions, retrieval, identify, interacting, causes, novel, context	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W35-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W33 to W34; Spaced: P6-W27; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately use diagrams and data to explain an effect, using relevant observation, data or model evidence	synthesis, interactions, retrieval, use, diagrams, data, explain, effect	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W35-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W33 to W34; Spaced: P6-W27; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately revise a causal explanation, using relevant observation, data or model evidence	synthesis, interactions, retrieval, revise, causal, explanation	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W36-KP1	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Short response	Recent: P6-W34 to W35; Spaced: P6-W28; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately retrieve light, heat, electricity, photosynthesis and conversions, using relevant observation, data or model evidence	synthesis, energy, retrieval, retrieve, light, heat, electricity, photosynthesis, conversions	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W36-KP2	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W34 to W35; Spaced: P6-W28; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately trace energy across topics, using relevant observation, data or model evidence	synthesis, energy, retrieval, trace, across, topics	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W36-KP3	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W34 to W35; Spaced: P6-W28; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately interpret an energy-rich multi-part diagram, using relevant observation, data or model evidence	synthesis, energy, retrieval, interpret, rich, multi, part, diagram	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W36-KP4	Observe; infer; explain; apply	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W34 to W35; Spaced: P6-W28; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately evaluate an energy claim within syllabus scope, using relevant observation, data or model evidence	synthesis, energy, retrieval, evaluate, claim, within, syllabus, scope	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register

KP ID	Scientific Practice	Values / Attitudes	Suggested Evidence	Retrieval	Success Criteria	Vocabulary	Scope Boundary	Review
P6-W37-KP1	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Short response	Recent: P6-W35 to W36; Spaced: P6-W29; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately formulate a testable question and hypothesis, using relevant observation, data or model evidence	synthesis, experimental, design, formulate, testable, question, hypothesis	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W37-KP2	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W35 to W36; Spaced: P6-W29; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately identify changed, measured and controlled variables, using relevant observation, data or model evidence	synthesis, experimental, design, identify, changed, measured, controlled, variables	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W37-KP3	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W35 to W36; Spaced: P6-W29; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately choose suitable apparatus and measurement, using relevant observation, data or model evidence	synthesis, experimental, design, choose, suitable, apparatus, measurement	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W37-KP4	Question; hypothesise; investigate; evaluate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W35 to W36; Spaced: P6-W29; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately evaluate fairness, reliability and safety, using relevant observation, data or model evidence	synthesis, experimental, design, evaluate, fairness, reliability, safety	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W38-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W36 to W37; Spaced: P6-W30; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately read tables, bar graphs and line graphs accurately, using relevant observation, data or model evidence	synthesis, data, graph, interpretation, read, tables, bar, graphs, line, accurately	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W38-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W36 to W37; Spaced: P6-W30; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately describe patterns without overclaiming, using relevant observation, data or model evidence	synthesis, data, graph, interpretation, describe, patterns, without, overclaiming	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W38-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W36 to W37; Spaced: P6-W30; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately use data as evidence for a conclusion, using relevant observation, data or model evidence	synthesis, data, graph, interpretation, use, evidence, conclusion	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W38-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W36 to W37; Spaced: P6-W30; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately identify anomalous or insufficient evidence, using relevant observation, data or model evidence	synthesis, data, graph, interpretation, identify, anomalous, insufficient, evidence	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W39-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W37 to W38; Spaced: P6-W31; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately write a claim supported by relevant evidence, using relevant observation, data or model evidence	synthesis, evidence, based, explanation, write, claim, supported, relevant	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W39-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W37 to W38; Spaced: P6-W31; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately connect evidence to a scientific principle, using relevant observation, data or model evidence	synthesis, evidence, based, explanation, connect, scientific, principle	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W39-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W37 to W38; Spaced: P6-W31; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately compare an alternative explanation, using relevant observation, data or model evidence	synthesis, evidence, based, explanation, compare, alternative	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W39-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W37 to W38; Spaced: P6-W31; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately revise the claim when evidence conflicts, using relevant observation, data or model evidence	synthesis, evidence, based, explanation, revise, claim, when, conflicts	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W40-KP1	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Short response	Recent: P6-W38 to W39; Spaced: P6-W32; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately select relevant knowledge across themes, using relevant observation, data or model evidence	synthesis, cumulative, mastery, transfer, select, relevant, knowledge, across, themes	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W40-KP2	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Diagram / table / graph response	Recent: P6-W38 to W39; Spaced: P6-W32; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately apply knowledge to an unfamiliar multi-step situation, using relevant observation, data or model evidence	synthesis, cumulative, mastery, transfer, apply, knowledge, unfamiliar, multi, step, situation	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W40-KP3	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Constructed explanation	Recent: P6-W38 to W39; Spaced: P6-W32; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately communicate using words, diagrams, tables or graphs, using relevant observation, data or model evidence	synthesis, cumulative, mastery, transfer, communicate, words, diagrams, tables, graphs	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register
P6-W40-KP4	Interpret; analyse; communicate	Curiosity; objectivity; integrity	Method / model critique	Recent: P6-W38 to W39; Spaced: P6-W32; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Accurately evaluate and improve a solution or model, using relevant observation, data or model evidence	synthesis, cumulative, mastery, transfer, evaluate, improve, solution, model	Transfer boundary: integrate only P3-P6 MOE content; do not introduce secondary concepts	Verified against V7 compliance register

4. P3-P6 Vertical Progression

Theme / Dimension	P3 Foundation	P4 Development	P5 Deepening	P6 Integration	Progression Logic
Diversity	Living/non-living; classification; materials	Retrieve characteristics and evidence rules	Apply diversity evidence in systems and reproduction	Apply roles and variation in environments	Observable classification -> functional and ecological reasoning
Cycles	Life cycles	Retrieve life cycles only	Reproduction and water cycles	Integrate cycles with energy and environments	Sequence -> mechanism -> system consequence
Cycles	Life cycles of plants and animals	Matter: mass, volume and three states	Reproduction and water cycle	Cross-theme synthesis	Observable cycles and states -> continuity and water cycling -> transfer
Interactions	Magnets	Light and heat phenomena	Compare exchanges and system interactions	Forces and environment	Direct effects -> interacting factors and causal chains
Energy	Informal effects only	Light and heat	Electrical systems and energy-use responsibility	Photosynthesis; energy forms and conversion	Observable effects -> functional systems -> energy acquisition and conversion
Practices	Observe, classify, infer	Fair tests, diagrams, tables, simple graphs	Controlled investigations and system models	Evaluate evidence, methods and multi-source data	Increasing independence and evidence quality

5. Spiral Retrieval and Mastery Map

Level	Level Week	Continuum Week	Theme	Current Topic	Current Focus	Named Retrieval	Practice Link	Learning Stage	Checkpoint Form	Follow-up
P3	1	1	Science as Inquiry	Foundation	Starting Science: observing and asking questions	Recent: none; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	2	2	Diversity	Living and non-living things	Characteristics of living things: survival needs	Recent: P3-W01 to W01; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P3	3	3	Diversity	Living and non-living things	Characteristics of living things: life processes	Recent: P3-W01 to W02; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	4	4	Diversity	Living and non-living things	Living, non-living and once-living evidence	Recent: P3-W02 to W03; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	5	5	Diversity	Classification	Why and how scientists classify	Recent: P3-W03 to W04; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Master / Transfer	Transfer checkpoint	Record weak KP ID and schedule retrieval
P3	6	6	Diversity	Classification of plants	Flowering and non-flowering plants	Recent: P3-W04 to W05; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	7	7	Diversity	Classification of animals	Mammals, birds and fish	Recent: P3-W05 to W06; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P3	8	8	Diversity	Classification of animals	Reptiles, amphibians and insects	Recent: P3-W06 to W07; Spaced: first-term build; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	9	9	Diversity	Other living groups	Fungi and bacteria	Recent: P3-W07 to W08; Spaced: P3-W01; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	10	10	Diversity	Term 1 Mastery	Diversity integration and scientific explanation	Recent: P3-W08 to W09; Spaced: P3-W02; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P3	11	11	Diversity	Materials	Materials and objects	Recent: P3-W09 to W10; Spaced: P3-W03; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P3	12	12	Diversity	Materials	Strength	Recent: P3-W10 to W11; Spaced: P3-W04; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	13	13	Diversity	Materials	Flexibility	Recent: P3-W11 to W12; Spaced: P3-W05; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	14	14	Diversity	Materials	Waterproof property	Recent: P3-W12 to W13; Spaced: P3-W06; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	15	15	Diversity	Materials	Transparency	Recent: P3-W13 to W14; Spaced: P3-W07; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Develop	Transfer checkpoint	Record weak KP ID and schedule retrieval
P3	16	16	Diversity	Materials	Ability to float or sink	Recent: P3-W14 to W15; Spaced: P3-W08; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P3	17	17	Diversity	Materials	Selecting materials for a purpose	Recent: P3-W15 to W16; Spaced: P3-W09; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P3	18	18	Diversity	Materials	Multi-property design challenge	Recent: P3-W16 to W17; Spaced: P3-W10; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P3	19	19	Diversity	Materials	Planning and evaluating a fair material test	Recent: P3-W17 to W18; Spaced: P3-W11; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	20	20	Diversity	Term 2 Mastery	Materials integration and transfer	Recent: P3-W18 to W19; Spaced: P3-W12; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P3	21	21	Cycles	Life cycles	What makes a life cycle	Recent: P3-W19 to W20; Spaced: P3-W13; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	22	22	Cycles	Plant life cycle	Seed, young plant and adult plant	Recent: P3-W20 to W21; Spaced: P3-W14; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P3	23	23	Cycles	Plant life cycle	Observing plant change over time	Recent: P3-W21 to W22; Spaced: P3-W15; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	24	24	Cycles	Plant life cycle	Comparing plant life cycles	Recent: P3-W22 to W23; Spaced: P3-W16; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	25	25	Cycles	Animal life cycles	Life cycles of chicken and frog	Recent: P3-W23 to W24; Spaced: P3-W17; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P3	26	26	Cycles	Animal life cycles	Incomplete metamorphosis examples	Recent: P3-W24 to W25; Spaced: P3-W18; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	27	27	Cycles	Animal life cycles	Complete metamorphosis: butterfly and beetle	Recent: P3-W25 to W26; Spaced: P3-W19; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P3	28	28	Cycles	Animal life cycles	Complete metamorphosis: mosquito	Recent: P3-W26 to W27; Spaced: P3-W20; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	29	29	Cycles	Life-cycle comparison	Comparing across plants and animals	Recent: P3-W27 to W28; Spaced: P3-W21; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	30	30	Cycles	Term 3 Mastery	Life-cycle inquiry and boundaries	Recent: P3-W28 to W29; Spaced: P3-W22; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P3	31	31	Interactions	Magnets	Magnetic push and pull	Recent: P3-W29 to W30; Spaced: P3-W23; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P3	32	32	Interactions	Magnets	Magnetic and non-magnetic materials	Recent: P3-W30 to W31; Spaced: P3-W24; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	33	33	Interactions	Magnets	Poles and attraction	Recent: P3-W31 to W32; Spaced: P3-W25; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	34	34	Interactions	Magnets	Repulsion and identifying poles	Recent: P3-W32 to W33; Spaced: P3-W26; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P3	35	35	Interactions	Magnets	Freely suspended magnet	Recent: P3-W33 to W34; Spaced: P3-W27; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Develop	Transfer checkpoint	Record weak KP ID and schedule retrieval
P3	36	36	Interactions	Magnets	Comparing magnetic strength	Recent: P3-W34 to W35; Spaced: P3-W28; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P3	37	37	Interactions	Magnets	Making a magnet by stroking	Recent: P3-W35 to W36; Spaced: P3-W29; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval

Level	Level Week	Continuum Week	Theme	Current Topic	Current Focus	Named Retrieval	Practice Link	Learning Stage	Checkpoint Form	Follow-up
P3	38	38	Interactions	Magnets	Making a magnet by the electrical method	Recent: P3-W36 to W37; Spaced: P3-W30; Prerequisite: P2 inquiry readiness	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P3	39	39	Interactions	Magnets	Uses of magnets and design	Recent: P3-W37 to W38; Spaced: P3-W31; Prerequisite: P2 inquiry readiness	Question; hypothesise; investigate; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P3	40	40	P3 Mastery	Cumulative transfer	Year-end mastery, inquiry and communication	Recent: P3-W38 to W39; Spaced: P3-W32; Prerequisite: P2 inquiry readiness	Interpret; analyse; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P4	1	41	Systems	Plant parts and functions	Plant-system overview	Recent: none; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P4	2	42	Systems	Plant parts and functions	Roots	Recent: P4-W01 to W01; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	3	43	Systems	Plant parts and functions	Stems	Recent: P4-W01 to W02; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	4	44	Systems	Plant parts and functions	Leaves	Recent: P4-W02 to W03; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	5	45	Systems	Plant parts and functions	Plant-part comparison	Recent: P4-W03 to W04; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Interpret; analyse; communicate	Apply / Consolidate	Transfer checkpoint	Record weak KP ID and schedule retrieval
P4	6	46	Systems	Plant parts and functions	Whole-plant application	Recent: P4-W04 to W05; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	7	47	Systems	Plant parts and functions	Plant observation investigation	Recent: P4-W05 to W06; Spaced: first-term build; Prerequisite: P3-W02-KP1; P3-W06-KP1	Question; hypothesise; investigate; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P4	8	48	Systems	Human digestive system	Overview of human body systems	Recent: P4-W06 to W07; Spaced: first-term build; Prerequisite: P3-W02-KP2; P3-W03-KP2	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P4	9	49	Systems	Human digestive system	Digestive-system pathway	Recent: P4-W07 to W08; Spaced: P4-W01; Prerequisite: P3-W02-KP2; P3-W03-KP2	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	10	50	Systems	Human digestive system	Mouth and gullet	Recent: P4-W08 to W09; Spaced: P4-W02; Prerequisite: P3-W02-KP2; P3-W03-KP2	Observe; infer; explain; apply	Develop	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P4	11	51	Systems	Human digestive system	Stomach	Recent: P4-W09 to W10; Spaced: P4-W03; Prerequisite: P3-W02-KP2; P3-W03-KP2	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	12	52	Systems	Human digestive system	Small intestine	Recent: P4-W10 to W11; Spaced: P4-W04; Prerequisite: P3-W02-KP2; P3-W03-KP2	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	13	53	Systems	Human digestive system	Large intestine	Recent: P4-W11 to W12; Spaced: P4-W05; Prerequisite: P3-W02-KP2; P3-W03-KP2	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	14	54	Systems	Human digestive system	Integrated digestion	Recent: P4-W12 to W13; Spaced: P4-W06; Prerequisite: P3-W02-KP2; P3-W03-KP2	Observe; infer; explain; apply	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P4	15	55	Cycles	Matter	What is matter	Recent: P4-W13 to W14; Spaced: P4-W07; Prerequisite: P3-W11-KP1; P3-W16-KP1	Observe; measure; compare; interpret; evaluate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P4	16	56	Cycles	Matter	Solids, liquids and gases	Recent: P4-W14 to W15; Spaced: P4-W08; Prerequisite: P3-W11-KP1; P3-W16-KP1	Observe; measure; compare; interpret; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	17	57	Cycles	Matter	Measuring mass	Recent: P4-W15 to W16; Spaced: P4-W09; Prerequisite: P3-W11-KP1; P3-W16-KP1	Observe; measure; compare; interpret; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	18	58	Cycles	Matter	Measuring volume	Recent: P4-W16 to W17; Spaced: P4-W10; Prerequisite: P3-W11-KP1; P3-W16-KP1	Observe; measure; compare; interpret; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	19	59	Cycles	Matter	Matter mastery	Recent: P4-W17 to W18; Spaced: P4-W11; Prerequisite: P3-W11-KP1; P3-W16-KP1	Observe; measure; compare; interpret; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P4	20	60	Energy	Light	Sources of light and seeing objects	Recent: P4-W18 to W19; Spaced: P4-W12; Prerequisite: P3-W11-KP1; P3-W15-KP1	Observe; infer; explain; apply	Introduce	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P4	21	61	Energy	Light	Light travels in straight lines	Recent: P4-W19 to W20; Spaced: P4-W13; Prerequisite: P3-W11-KP1; P3-W15-KP1	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	22	62	Energy	Light	Shadow formation	Recent: P4-W20 to W21; Spaced: P4-W14; Prerequisite: P3-W11-KP1; P3-W15-KP1	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	23	63	Energy	Light	Shadow shape and object position	Recent: P4-W21 to W22; Spaced: P4-W15; Prerequisite: P3-W11-KP1; P3-W15-KP1	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	24	64	Energy	Light	Shadow size variables	Recent: P4-W22 to W23; Spaced: P4-W16; Prerequisite: P3-W11-KP1; P3-W15-KP1	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	25	65	Energy	Light	Complete and partial blocking	Recent: P4-W23 to W24; Spaced: P4-W17; Prerequisite: P3-W11-KP1; P3-W15-KP1	Interpret; analyse; communicate	Apply / Consolidate	Transfer checkpoint	Record weak KP ID and schedule retrieval
P4	26	66	Energy	Light	Light investigation	Recent: P4-W24 to W25; Spaced: P4-W18; Prerequisite: P3-W11-KP1; P3-W15-KP1	Question; hypothesise; investigate; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P4	27	67	Energy	Heat	Heat sources and heat as energy	Recent: P4-W25 to W26; Spaced: P4-W19; Prerequisite: P3-W11-KP1; P3-W12-KP1	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P4	28	68	Energy	Heat	Temperature and measurement	Recent: P4-W26 to W27; Spaced: P4-W20; Prerequisite: P3-W11-KP1; P3-W12-KP1	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	29	69	Energy	Heat	Direction of heat flow	Recent: P4-W27 to W28; Spaced: P4-W21; Prerequisite: P3-W11-KP1; P3-W12-KP1	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	30	70	Energy	Heat	Heat gain, heat loss and temperature	Recent: P4-W28 to W29; Spaced: P4-W22; Prerequisite: P3-W11-KP1; P3-W12-KP1	Interpret; analyse; communicate	Develop	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P4	31	71	Energy	Heat	Expansion and contraction	Recent: P4-W29 to W30; Spaced: P4-W23; Prerequisite: P3-W11-KP1; P3-W12-KP1	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	32	72	Energy	Heat	Changes of state from heat gain or loss	Recent: P4-W30 to W31; Spaced: P4-W24; Prerequisite: P3-W11-KP1; P3-W12-KP1	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval

Level	Level Week	Continuum Week	Theme	Current Topic	Current Focus	Named Retrieval	Practice Link	Learning Stage	Checkpoint Form	Follow-up
P4	33	73	Energy	Heat	Conductors of heat	Recent: P4-W31 to W32; Spaced: P4-W25; Prerequisite: P3-W11-KP1; P3-W12-KP1	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	34	74	Energy	Heat	Heat mastery and P4 transfer	Recent: P4-W32 to W33; Spaced: P4-W26; Prerequisite: P3-W11-KP1; P3-W12-KP1	Question; hypothesise; investigate; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P4	35	75	Integration	P4 inquiry and mastery	Fair-test design	Recent: P4-W33 to W34; Spaced: P4-W27; Prerequisite: P3-W10-KP4; P3-W20-KP4	Question; hypothesise; investigate; evaluate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P4	36	76	Integration	P4 inquiry and mastery	Tables and graphs	Recent: P4-W34 to W35; Spaced: P4-W28; Prerequisite: P3-W10-KP4; P3-W20-KP4	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	37	77	Integration	P4 inquiry and mastery	Diagram and model reasoning	Recent: P4-W35 to W36; Spaced: P4-W29; Prerequisite: P3-W10-KP4; P3-W20-KP4	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P4	38	78	Integration	P4 inquiry and mastery	Cross-topic application	Recent: P4-W36 to W37; Spaced: P4-W30; Prerequisite: P3-W10-KP4; P3-W20-KP4	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	39	79	Integration	P4 inquiry and mastery	Misconception repair	Recent: P4-W37 to W38; Spaced: P4-W31; Prerequisite: P3-W10-KP4; P3-W20-KP4	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P4	40	80	Integration	P4 inquiry and mastery	P4 cumulative mastery	Recent: P4-W38 to W39; Spaced: P4-W32; Prerequisite: P3-W10-KP4; P3-W20-KP4	Interpret; analyse; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P5	1	81	Cycles	Reproduction	Cells, continuity and inherited characteristics	Recent: none; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P5	2	82	Cycles	Reproduction	Flower parts and their roles	Recent: P5-W01 to W01; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	3	83	Cycles	Reproduction	Pollination	Recent: P5-W01 to W02; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	4	84	Cycles	Reproduction	Fertilisation and seed production	Recent: P5-W02 to W03; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	5	85	Cycles	Reproduction	Seed dispersal	Recent: P5-W03 to W04; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Interpret; analyse; communicate	Apply / Consolidate	Transfer checkpoint	Record weak KP ID and schedule retrieval
P5	6	86	Cycles	Reproduction	Germination and reproduction by spores or seeds	Recent: P5-W04 to W05; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	7	87	Cycles	Reproduction	Reproduction mastery	Recent: P5-W05 to W06; Spaced: first-term build; Prerequisite: P3-W21-KP1; P3-W29-KP3	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P5	8	88	Cycles	Water	Three states of water	Recent: P5-W06 to W07; Spaced: first-term build; Prerequisite: P4-W27-KP1; P4-W34-KP4	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P5	9	89	Cycles	Water	Melting and freezing at 0°C	Recent: P5-W07 to W08; Spaced: P5-W01; Prerequisite: P4-W27-KP1; P4-W34-KP4	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	10	90	Cycles	Water	Boiling and condensation	Recent: P5-W08 to W09; Spaced: P5-W02; Prerequisite: P4-W27-KP1; P4-W34-KP4	Observe; infer; explain; apply	Develop	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P5	11	91	Cycles	Water	Evaporation	Recent: P5-W09 to W10; Spaced: P5-W03; Prerequisite: P4-W27-KP1; P4-W34-KP4	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	12	92	Cycles	Water	Rate of evaporation	Recent: P5-W10 to W11; Spaced: P5-W04; Prerequisite: P4-W27-KP1; P4-W34-KP4	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	13	93	Cycles	Water	Water cycle	Recent: P5-W11 to W12; Spaced: P5-W05; Prerequisite: P4-W27-KP1; P4-W34-KP4	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	14	94	Cycles	Water	Water, life and resource responsibility	Recent: P5-W12 to W13; Spaced: P5-W06; Prerequisite: P4-W27-KP1; P4-W34-KP4	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P5	15	95	Systems	Plant transport system	Water uptake and transport	Recent: P5-W13 to W14; Spaced: P5-W07; Prerequisite: P4-W01-KP2; P4-W07-KP4	Interpret; analyse; communicate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P5	16	96	Systems	Plant transport system	Food production and transport	Recent: P5-W14 to W15; Spaced: P5-W08; Prerequisite: P4-W01-KP2; P4-W07-KP4	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	17	97	Systems	Plant transport system	Plant gas exchange	Recent: P5-W15 to W16; Spaced: P5-W09; Prerequisite: P4-W01-KP2; P4-W07-KP4	Interpret; analyse; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	18	98	Systems	Plant transport system	Transport investigations	Recent: P5-W16 to W17; Spaced: P5-W10; Prerequisite: P4-W01-KP2; P4-W07-KP4	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	19	99	Systems	Plant transport system	Effects of blocked transport	Recent: P5-W17 to W18; Spaced: P5-W11; Prerequisite: P4-W01-KP2; P4-W07-KP4	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	20	100	Systems	Plant transport system	Plant transport model	Recent: P5-W18 to W19; Spaced: P5-W12; Prerequisite: P4-W01-KP2; P4-W07-KP4	Interpret; analyse; communicate	Apply / Consolidate	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P5	21	101	Systems	Plant transport system	Plant-system mastery	Recent: P5-W19 to W20; Spaced: P5-W13; Prerequisite: P4-W01-KP2; P4-W07-KP4	Observe; infer; explain; apply	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P5	22	102	Systems	Human respiratory and circulatory systems	Composition of air	Recent: P5-W20 to W21; Spaced: P5-W14; Prerequisite: P4-W08-KP1; P4-W14-KP4	Interpret; analyse; communicate	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P5	23	103	Systems	Human respiratory and circulatory systems	Respiratory-system parts	Recent: P5-W21 to W22; Spaced: P5-W15; Prerequisite: P4-W08-KP1; P4-W14-KP4	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	24	104	Systems	Human respiratory and circulatory systems	Circulatory-system parts	Recent: P5-W22 to W23; Spaced: P5-W16; Prerequisite: P4-W08-KP1; P4-W14-KP4	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	25	105	Systems	Human respiratory and circulatory systems	Transported substances	Recent: P5-W23 to W24; Spaced: P5-W17; Prerequisite: P4-W08-KP1; P4-W14-KP4	Observe; infer; explain; apply	Develop	Transfer checkpoint	Record weak KP ID and schedule retrieval
P5	26	106	Systems	Human respiratory and circulatory systems	Integrated human systems	Recent: P5-W24 to W25; Spaced: P5-W18; Prerequisite: P4-W08-KP1; P4-W14-KP4	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	27	107	Systems	Human respiratory and circulatory systems	Comparing gas exchange and transport	Recent: P5-W25 to W26; Spaced: P5-W19; Prerequisite: P4-W08-KP1; P4-W14-KP4	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval

Level	Level Week	Continuum Week	Theme	Current Topic	Current Focus	Named Retrieval	Practice Link	Learning Stage	Checkpoint Form	Follow-up
P5	28	108	Systems	Human respiratory and circulatory systems	Human-system mastery	Recent: P5-W26 to W27; Spaced: P5-W20; Prerequisite: P4-W08-KP1; P4-W14-KP4	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P5	29	109	Systems	Electrical system	Circuit components and system	Recent: P5-W27 to W28; Spaced: P5-W21; Prerequisite: P3-W11-KP2; P4-W26-KP4	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P5	30	110	Systems	Electrical system	Closed and open circuits	Recent: P5-W28 to W29; Spaced: P5-W22; Prerequisite: P3-W11-KP2; P4-W26-KP4	Observe; infer; explain; apply	Develop	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P5	31	111	Systems	Electrical system	Conductors and insulators	Recent: P5-W29 to W30; Spaced: P5-W23; Prerequisite: P3-W11-KP2; P4-W26-KP4	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	32	112	Systems	Electrical system	Batteries in series	Recent: P5-W30 to W31; Spaced: P5-W24; Prerequisite: P3-W11-KP2; P4-W26-KP4	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	33	113	Systems	Electrical system	Bulbs in series and parallel	Recent: P5-W31 to W32; Spaced: P5-W25; Prerequisite: P3-W11-KP2; P4-W26-KP4	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	34	114	Systems	Electrical system	Electrical mastery and responsibility	Recent: P5-W32 to W33; Spaced: P5-W26; Prerequisite: P3-W11-KP2; P4-W26-KP4	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P5	35	115	Integration	P5 cross-topic mastery	Reproduction × evidence: Evaluate a flowering-plant reproduction claim	Recent: P5-W33 to W34; Spaced: P5-W27; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Interpret; investigate; evaluate; communicate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P5	36	116	Integration	P5 cross-topic mastery	Water × investigation: Water change and evaporation investigation mastery	Recent: P5-W34 to W35; Spaced: P5-W28; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Interpret; investigate; evaluate; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	37	117	Integration	P5 cross-topic mastery	Plant × human systems: Compare transport systems	Recent: P5-W35 to W36; Spaced: P5-W29; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Interpret; investigate; evaluate; communicate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P5	38	118	Integration	P5 cross-topic mastery	Electricity × fair test: Circuit construction and variable control	Recent: P5-W36 to W37; Spaced: P5-W30; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Interpret; investigate; evaluate; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	39	119	Integration	P5 cross-topic mastery	Cross-topic data: Interpret unfamiliar P5 science evidence	Recent: P5-W37 to W38; Spaced: P5-W31; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Interpret; investigate; evaluate; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P5	40	120	Integration	P5 cross-topic mastery	P5 cumulative mastery: P5 cumulative transfer and misconception correction	Recent: P5-W38 to W39; Spaced: P5-W32; Prerequisite: P5-W07-KP4; P5-W14-KP4; P5-W21-KP4; P5-W28-KP4; P5-W34-KP4	Interpret; investigate; evaluate; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P6	1	121	Energy	Photosynthesis	Energy for life processes	Recent: none; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P6	2	122	Energy	Photosynthesis	Sun and ways organisms obtain energy	Recent: P6-W01 to W01; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	3	123	Energy	Photosynthesis	Photosynthesis overview	Recent: P6-W01 to W02; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	4	124	Energy	Photosynthesis	Requirement: light energy	Recent: P6-W02 to W03; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	5	125	Energy	Photosynthesis	Requirement: water	Recent: P6-W03 to W04; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Apply / Consolidate	Transfer checkpoint	Record weak KP ID and schedule retrieval
P6	6	126	Energy	Photosynthesis	Requirement: carbon dioxide	Recent: P6-W04 to W05; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	7	127	Energy	Photosynthesis	Products and evidence	Recent: P6-W05 to W06; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	8	128	Energy	Photosynthesis	Photosynthesis mastery	Recent: P6-W06 to W07; Spaced: first-term build; Prerequisite: P4-W04-KP2; P5-W15-KP1; P5-W17-KP3	Observe; interpret; investigate; model; evaluate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P6	9	129	Energy	Energy forms and conversion	Energy forms	Recent: P6-W07 to W08; Spaced: P6-W01; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Interpret; analyse; communicate	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P6	10	130	Energy	Energy forms and conversion	Energy resources and the Sun	Recent: P6-W08 to W09; Spaced: P6-W02; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Observe; infer; explain; apply	Develop	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P6	11	131	Energy	Energy forms and conversion	Single-step conversions	Recent: P6-W09 to W10; Spaced: P6-W03; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	12	132	Energy	Energy forms and conversion	Multi-step conversions	Recent: P6-W10 to W11; Spaced: P6-W04; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	13	133	Energy	Energy forms and conversion	Responsible energy use	Recent: P6-W11 to W12; Spaced: P6-W05; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Interpret; investigate; evaluate; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	14	134	Energy	Energy forms and conversion	Energy conversion applications	Recent: P6-W12 to W13; Spaced: P6-W06; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Interpret; investigate; evaluate; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	15	135	Energy	Energy forms and conversion	Investigating energy conversion	Recent: P6-W13 to W14; Spaced: P6-W07; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Transfer checkpoint	Record weak KP ID and schedule retrieval
P6	16	136	Energy	Energy forms and conversion	Energy diagrams and data	Recent: P6-W14 to W15; Spaced: P6-W08; Prerequisite: P4-W20-KP1; P4-W27-KP1; P5-W29-KP1	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval

Level	Level Week	Continuum Week	Theme	Current Topic	Current Focus	Named Retrieval	Practice Link	Learning Stage	Checkpoint Form	Follow-up
P6	17	137	Interactions	Forces	Pushes, pulls and effects	Recent: P6-W15 to W16; Spaced: P6-W09; Prerequisite: P3-W31-KP1; P3-W36-KP3	Observe; infer; explain; apply	Introduce	Short retrieval	Record weak KP ID and schedule retrieval
P6	18	138	Interactions	Forces	Types of forces	Recent: P6-W16 to W17; Spaced: P6-W10; Prerequisite: P3-W31-KP1; P3-W36-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	19	139	Interactions	Forces	Gravitational force	Recent: P6-W17 to W18; Spaced: P6-W11; Prerequisite: P3-W31-KP1; P3-W36-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	20	140	Interactions	Forces	Frictional force	Recent: P6-W18 to W19; Spaced: P6-W12; Prerequisite: P3-W31-KP1; P3-W36-KP3	Observe; infer; explain; apply	Develop	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P6	21	141	Interactions	Forces	Investigating friction	Recent: P6-W19 to W20; Spaced: P6-W13; Prerequisite: P3-W31-KP1; P3-W36-KP3	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	22	142	Interactions	Forces	Elastic spring force	Recent: P6-W20 to W21; Spaced: P6-W14; Prerequisite: P3-W31-KP1; P3-W36-KP3	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	23	143	Interactions	Forces	Investigating springs	Recent: P6-W21 to W22; Spaced: P6-W15; Prerequisite: P3-W31-KP1; P3-W36-KP3	Question; hypothesise; investigate; evaluate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	24	144	Interactions	Forces	Combined effects of forces	Recent: P6-W22 to W23; Spaced: P6-W16; Prerequisite: P3-W31-KP1; P3-W36-KP3	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P6	25	145	Interactions	Environment	Environmental factors and survival	Recent: P6-W23 to W24; Spaced: P6-W17; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Interpret; analyse; communicate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P6	26	146	Interactions	Environment	Producers, consumers and decomposers	Recent: P6-W24 to W25; Spaced: P6-W18; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	27	147	Interactions	Environment	Food chains	Recent: P6-W25 to W26; Spaced: P6-W19; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	28	148	Interactions	Environment	Food webs	Recent: P6-W26 to W27; Spaced: P6-W20; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	29	149	Interactions	Environment	Unfavourable environments	Recent: P6-W27 to W28; Spaced: P6-W21; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	30	150	Interactions	Environment	Adaptations and survival	Recent: P6-W28 to W29; Spaced: P6-W22; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Interpret; analyse; communicate	Apply / Consolidate	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks
P6	31	151	Interactions	Environment	Observing interacting factors	Recent: P6-W29 to W30; Spaced: P6-W23; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	32	152	Interactions	Environment	Human negative impacts	Recent: P6-W30 to W31; Spaced: P6-W24; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Observe; infer; explain; apply	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	33	153	Interactions	Environment	Human positive impacts	Recent: P6-W31 to W32; Spaced: P6-W25; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	34	154	Interactions	Environment	Population-change reasoning	Recent: P6-W32 to W33; Spaced: P6-W26; Prerequisite: P3-W04-KP1; P3-W21-KP1; P5-W14-KP3	Interpret; analyse; communicate	Master / Transfer	Short retrieval	Record weak KP ID and schedule retrieval
P6	35	155	Integration	P3-P6 synthesis	Interactions retrieval	Recent: P6-W33 to W34; Spaced: P6-W27; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Interpret; analyse; communicate	Introduce	Transfer checkpoint	Record weak KP ID and schedule retrieval
P6	36	156	Integration	P3-P6 synthesis	Energy retrieval	Recent: P6-W34 to W35; Spaced: P6-W28; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Observe; infer; explain; apply	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	37	157	Integration	P3-P6 synthesis	Experimental design	Recent: P6-W35 to W36; Spaced: P6-W29; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Question; hypothesise; investigate; evaluate	Develop	Short retrieval	Record weak KP ID and schedule retrieval
P6	38	158	Integration	P3-P6 synthesis	Data and graph interpretation	Recent: P6-W36 to W37; Spaced: P6-W30; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	39	159	Integration	P3-P6 synthesis	Evidence-based explanation	Recent: P6-W37 to W38; Spaced: P6-W31; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Interpret; analyse; communicate	Apply / Consolidate	Short retrieval	Record weak KP ID and schedule retrieval
P6	40	160	Integration	P3-P6 synthesis	Cumulative mastery and transfer	Recent: P6-W38 to W39; Spaced: P6-W32; Prerequisite: P5-W28-KP4; P5-W34-KP4; P6-W16-KP4; P6-W24-KP4; P6-W34-KP4	Interpret; analyse; communicate	Master / Transfer	Cumulative mastery and error analysis	Reassess named KP IDs within 2-4 weeks

6. MOE Outcome Coverage Audit

Level	Theme	MOE Topic / Outcome Block	First KP	Last KP	Status	Scope / Evidence Note
P3	Diversity	Living things need air, food and water; respond, grow and reproduce	P3-W02-KP1	P3-W03-KP4	Covered	Outcome-level mapping; observable evidence
P3	Diversity	Classify living things and materials using observable characteristics	P3-W04-KP1	P3-W20-KP4	Covered	Includes plants, animals, fungi, bacteria and material properties
P3	Cycles	Plant and animal life cycles; similarities, differences and repeating stages	P3-W21-KP1	P3-W30-KP4	Covered	Diagrams, observations and comparison
P3	Interactions	Magnet push/pull, poles, attraction/repulsion, materials and uses	P3-W31-KP1	P3-W38-KP4	Covered	Nickel/cobalt recall, shielding and induction protected
P3	Interactions	Compare materials and make magnets by stroke/electrical methods	P3-W35-KP1	P3-W40-KP4	Covered	Practice and application mapped
P4	Systems	Plant parts and functions	P4-W01-KP1	P4-W07-KP4	Covered	Transport tubes and photosynthesis requirements deferred
P4	Systems	Human digestive system parts, functions and digestion	P4-W08-KP1	P4-W14-KP4	Covered	Detailed enzymes/villi excluded
P4	Cycles	Matter has mass and occupies space; solids, liquids and gases	P4-W15-KP1	P4-W16-KP4	Covered	Density and particle theory excluded
P4	Cycles	Measure mass and volume using appropriate apparatus	P4-W17-KP1	P4-W19-KP4	Covered	Scale reading, apparatus and evidence
P4	Energy	Light travels in straight lines; shadows; reflection and uses	P4-W20-KP1	P4-W26-KP4	Covered	Evidence and model work included
P4	Energy	Heat sources; heat vs temperature; hotter-to-colder flow	P4-W27-KP1	P4-W31-KP4	Covered	Measurement practice included
P4	Energy	Expansion/contraction, state change and conductors of heat	P4-W31-KP1	P4-W34-KP4	Covered	Specific material transfer rates excluded
P4	Integration	P4 scientific inquiry, models, data and cumulative mastery	P4-W35-KP1	P4-W40-KP4	Covered	Cross-topic transfer within P4 boundaries
P5	Cycles	Cell, reproduction, continuity and parent-offspring characteristics	P5-W01-KP1	P5-W01-KP4	Covered	Genetics terminology excluded
P5	Cycles	Pollination, fertilisation, seeds, dispersal and germination	P5-W02-KP1	P5-W07-KP4	Covered	Vegetative propagation not required
P5	Cycles	Water states and changes; 0°C and 100°C fixed points	P5-W08-KP1	P5-W10-KP4	Covered	Particle theory excluded
P5	Cycles	Evaporation factors, water cycle, importance, pollution and conservation	P5-W11-KP1	P5-W14-KP4	Covered	Wind, temperature, exposed surface area
P5	Systems	Plant food/water transport and investigation	P5-W15-KP1	P5-W21-KP4	Covered	Xylem/phloem/stomata excluded
P5	Systems	Air composition; human respiratory/circulatory parts and functions	P5-W22-KP1	P5-W25-KP4	Covered	Detailed anatomy excluded
P5	Systems	System integration; gas exchange and transport comparisons	P5-W26-KP1	P5-W28-KP4	Covered	Functional comparison at P5 level
P5	Systems	Electrical circuits, closed path, conductors and insulators	P5-W29-KP1	P5-W31-KP4	Covered	No voltage/resistance calculations
P5	Systems	Construct circuits; investigate series batteries and series/parallel bulbs	P5-W32-KP1	P5-W34-KP4	Covered	Safety and conservation included
P5	Integration	P5 cumulative application without P6 photosynthesis	P5-W35-KP1	P5-W40-KP4	Covered	New V6 boundary protection
P6	Energy	Respiration releases energy; Sun; plants and animals obtain energy differently	P6-W01-KP1	P6-W02-KP4	Covered	Photosynthesis foundations taught first
P6	Energy	Photosynthesis requirements: water, light energy and carbon dioxide	P6-W03-KP1	P6-W06-KP4	Covered	Controlled investigations
P6	Energy	Photosynthesis products: sugar and oxygen; evidence and integration	P6-W07-KP1	P6-W08-KP4	Covered	No chemical equation/chloroplast detail
P6	Energy	Energy from the Sun; kinetic, potential, light, electrical, sound and heat	P6-W09-KP1	P6-W12-KP4	Covered	Specific potential-energy labels excluded
P6	Energy	Investigate energy conversion and practise responsible energy use	P6-W13-KP1	P6-W16-KP4	Covered	No conservation-law or efficiency-calculation requirement
P6	Interactions	Force as push/pull; effects; magnetic, gravitational, spring and friction	P6-W17-KP1	P6-W21-KP4	Covered	Required force outcomes
P6	Interactions	Investigate friction and elastic spring force; weight due to gravity	P6-W22-KP1	P6-W24-KP4	Covered	Rolling friction direction and resistance terms excluded
P6	Interactions	Organism, population, community, habitat and survival factors	P6-W25-KP1	P6-W28-KP4	Covered	Required ecological hierarchy
P6	Interactions	Producer, consumer, decomposer, predator, prey; chains and webs	P6-W29-KP1	P6-W31-KP4	Covered	Energy relationships without advanced ecology
P6	Interactions	Responses to unfavourable conditions and human environmental impact	P6-W32-KP1	P6-W34-KP4	Covered	Responsibility and evidence
P6	Integration	P3-P6 synthesis and PSLE scientific inquiry transfer	P6-W35-KP1	P6-W40-KP4	Covered	Only primary syllabus content

7. Assessment Architecture

Rule	Requirement	Audit Check
Knowledge mix	65% current / 20% recent / 15% spaced	Name every source KP ID
Visual/data	At least 30% of marks	Use answer-relevant diagrams, tables, graphs, models or setups
Constructed response	At least 40% of marks	Require explaining, predicting, justifying, critiquing or improving
Scientific inquiry	At least two practices per paper	Include variables, fair test, data or method evaluation
Advanced demand	Depth without premature content	Use unfamiliar contexts, competing evidence and model revision
Mastery	Internal guide: 80%+ secure; 60-79% developing; below 60% reteach	Judge relevant core KPs, not total score only
Follow-up	Retrieve weak KP in 2-4 weeks	Use matched but non-identical evidence
Scope	Later-level content is not required early	Extensions must be labelled and never replace core mastery

8. Sources and Governance

Type	Source / Rule	URL / Basis	Use	Status
Primary official source	MOE Science Teaching & Learning Syllabus, Primary (2023)	https://www.moe.gov.sg/-/media/files/primary/syllabus/2023-primary-science.pdf	P3-P6 topics, learning outcomes, practices, values and notes	Reviewed for V5
Assessment reference	SEAB 2026 PSLE Science Syllabus	https://www.seab.gov.sg/files/PSLE%20Syllabus%20documents/2026%20PSLE/0009_y26_sy.pdf	Assessment objectives and visual/data representations	Reviewed
Governance	Master matrix precedes level KP lists	Internal PSLE Checkpoint rule	P3/P4/P5/P6 KP lists must be filtered from this master	Authoritative
V4 foundation	P4/P5 boundaries rebuilt	Deep review finding	Moved Reproduction and Water to P5; removed P4 human reproduction	Retained
V5 correction	P5 Water completeness	Final review finding	Added importance to life processes and water-pollution impact	Completed
V7 correction	Compliance-first rebuild and prerequisite correction	MOE Primary Science Syllabus 2023	P4 Matter restored; P6 sequence corrected; topic-based stages applied	Verified against compliance register