



## Year 6 Science Knowledge Progression 2026–2027

| Term / unit                                                                  | Builds on                                                                                                                                                                                                                                                                                                 | Knowledge progression                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Working scientifically                                                                                                                                                                                                                                                                                    | Key vocabulary                                                                                                                                                                         | Where this leads next                                                                                                                                                                                                    |
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| <b>Advent 1</b><br><b>Living things:</b><br><b>Classifying big and small</b> | <ul style="list-style-type: none"> <li>• Living things can be grouped according to similarities and differences.</li> <li>• Builds on Year 4 classification keys and changing habitats.</li> <li>• Recalls familiar animal groups and basic plant/animal characteristics.</li> </ul>                      | <ul style="list-style-type: none"> <li>• Recognise an organism as an individual living thing and recall the seven life processes.</li> <li>• Explain why scientists classify organisms and know that Linnaeus developed an influential classification system.</li> <li>• Distinguish vertebrates from invertebrates and classify vertebrates as fish, amphibians, reptiles, birds or mammals.</li> <li>• Compare common invertebrate groups using observable features.</li> <li>• Group plants as flowering plants, ferns, mosses and conifers.</li> <li>• Understand that micro-organisms are living things too small to see clearly without magnification.</li> </ul> | <ul style="list-style-type: none"> <li>• Use observable characteristics as evidence when grouping organisms.</li> <li>• Use and construct branching classification keys.</li> <li>• Select useful yes/no questions and justify classification decisions.</li> </ul>                                       | organism; classification; classification key; vertebrate; invertebrate; micro-organism; mammal; bird; reptile; amphibian; fish; insect; arachnid; flowering plant; fern; moss; conifer | <ul style="list-style-type: none"> <li>• Revisited in the Year 6 Making connections enquiry.</li> <li>• Supports KS3 work on cells, organisms, biodiversity, ecosystems and classification.</li> </ul>                   |
| <b>Advent 2</b><br><b>Energy: Light and reflection</b>                       | <ul style="list-style-type: none"> <li>• Builds on Year 3 learning that light is needed to see and darkness is the absence of light.</li> <li>• Recalls reflection and that opaque objects block light to form shadows.</li> <li>• Uses prior experience of changing shadow size and position.</li> </ul> | <ul style="list-style-type: none"> <li>• Distinguish light sources from objects that reflect light and explain ways the eye is protected from intense light.</li> <li>• Understand that light travels in straight lines and explain how light reaches the eye directly or after reflection.</li> <li>• Explain shadow formation and factors that alter shadow size.</li> <li>• Use ray diagrams to explain light paths and shadow shape.</li> <li>• Understand that smooth mirrors reflect light predictably and compare incoming and reflected rays.</li> <li>• Apply reflection knowledge to explain how a periscope works.</li> </ul>                                | <ul style="list-style-type: none"> <li>• Make careful observations and use them as evidence.</li> <li>• Draw and interpret ray diagrams.</li> <li>• Pose testable questions; measure shadow size systematically.</li> <li>• Record continuous data in line graphs and use patterns to predict.</li> </ul> | light source; luminous; non-luminous; reflection; incoming ray; reflected ray; mirror; ray diagram; opaque; shadow; angle; periscope                                                   | <ul style="list-style-type: none"> <li>• Light and eye-safety knowledge is revisited in the sunglasses enquiry.</li> <li>• Supports KS3 light waves, reflection, refraction and the electromagnetic spectrum.</li> </ul> |

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| <b>Lent 1</b><br><b>Living things: Evolution and inheritance</b> | <ul style="list-style-type: none"> <li>Builds on classification from Advent 1.</li> <li>Recalls that living things reproduce and offspring are similar but not identical to parents.</li> <li>Draws on earlier learning about habitats and suitability to environments.</li> </ul> | <ul style="list-style-type: none"> <li>Define variation and distinguish inherited variation from environmentally influenced variation.</li> <li>Understand that offspring inherit characteristics while some characteristics are influenced by environment or experience.</li> <li>Recognise patterns of inheritance without assuming every characteristic is inherited simply.</li> <li>Define adaptation as an inherited characteristic that can improve survival or reproduction.</li> <li>Understand that variation and selection over generations can lead to natural selection.</li> <li>Define evolution as change in inherited characteristics of populations over many generations.</li> <li>Recognise that fossils and other evidence support explanations of evolution.</li> </ul> | <ul style="list-style-type: none"> <li>Sort variation as inherited, environmental or a combination.</li> <li>Use models to explore natural selection and identify their limitations.</li> <li>Identify control variables and evaluate reliability.</li> <li>Explain how repeated evidence increases confidence in conclusions.</li> </ul>                                                     | variation; inheritance; inherited; environmental; offspring; adaptation; population; natural selection; evolution; ancestor; fossil; evidence; reliability | <ul style="list-style-type: none"> <li>Supports KS3 genetics, inheritance, evolution, natural selection and biodiversity.</li> <li>Deepens understanding of evidence-based scientific explanations.</li> </ul>                 |
| <b>Lent 2</b><br><b>Energy: Circuits, batteries and switches</b> | <ul style="list-style-type: none"> <li>Builds on Year 4 electricity: appliances, complete circuits, power sources and switches.</li> <li>Recalls cells, batteries, bulbs, buzzers, motors and switches.</li> <li>Recalls conductors and insulators.</li> </ul>                     | <ul style="list-style-type: none"> <li>Explain functions of common circuit components.</li> <li>Predict whether a circuit will work by checking the loop, power source and connections.</li> <li>Use standard circuit symbols.</li> <li>Understand that adding components can increase resistance and reduce current/energy transfer.</li> <li>Understand that a battery provides voltage and changing cells/voltage changes component output.</li> <li>Use voltage knowledge to predict bulb brightness, buzzer sound or motor action.</li> <li>Explain how switches control circuits and apply this knowledge to practical problems.</li> </ul>                                                                                                                                             | <ul style="list-style-type: none"> <li>Draw clear circuit diagrams using standard symbols.</li> <li>Plan comparative/fair tests and identify changed, measured and control variables.</li> <li>Design results tables with headings and units.</li> <li>Identify relationships between voltage, resistance and component output.</li> <li>Use evidence to justify design decisions.</li> </ul> | circuit; component; cell; battery; voltage; current; resistance; switch; bulb; buzzer; motor; circuit symbol; variable; conductor; insulator               | <ul style="list-style-type: none"> <li>Supports KS3 electricity, current, potential difference, resistance and series/parallel circuits.</li> <li>Provides enquiry knowledge for the final Making connections unit.</li> </ul> |

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| <b>Pentecost 1</b><br><b>Animals, including humans: Circulation and health</b>          | <ul style="list-style-type: none"> <li>Builds on Year 4 digestion, teeth and food chains and wider learning about nutrition and healthy choices.</li> <li>Recalls that body systems contain specialised organs.</li> <li>Uses prior experience of pulse and exercise.</li> </ul> | <ul style="list-style-type: none"> <li>Identify lifestyle factors that can improve or damage health.</li> <li>Describe the circulatory system as the heart and blood vessels transporting blood; understand the heart as a pump.</li> <li>Describe the pathway of blood and understand that it passes through the heart twice in a complete circulation.</li> <li>Explain that blood transports oxygen, water, nutrients and other materials.</li> <li>Define heart rate and recognise variation between animals and individuals.</li> <li>Identify patterns between animal size and heart rate.</li> <li>Explain why exercise changes heart rate.</li> <li>Compare recovery data and discuss links between heart rate, exercise and fitness cautiously.</li> </ul> | <ul style="list-style-type: none"> <li>Evaluate whether health information from secondary sources is trustworthy.</li> <li>Use and evaluate scientific models.</li> <li>Compare class data and identify anomalies.</li> <li>Use patterns to make predictions.</li> <li>Write a replicable method and plot/interpret line graphs.</li> </ul>                                                                                                      | circulatory system; heart; blood; blood vessel; artery; vein; capillary; oxygen; nutrient; heart rate; pulse; exercise; fitness; anomaly; reliable; evidence        | <ul style="list-style-type: none"> <li>Builds into KS3 nutrition and digestion, gas exchange and health.</li> <li>Develops data handling and source evaluation across secondary science.</li> </ul>                                                                    |
| <b>Pentecost 2</b><br><b>Making connections: Are some sunglasses safer than others?</b> | <ul style="list-style-type: none"> <li>Revisits Year 6 Light and reflection, especially transmission and eye safety.</li> <li>Draws on wider Year 6 knowledge where useful.</li> <li>Uses the full enquiry cycle practised across previous units.</li> </ul>                     | <ul style="list-style-type: none"> <li>Understand that sunglasses differ in visible-light transmission and ultraviolet protection.</li> <li>Recognise that darker-looking lenses are not, by appearance alone, evidence of better UV protection.</li> <li>Apply knowledge of light and eye safety to frame a scientific question.</li> <li>Understand that safety claims should be tested through controlled measurements.</li> <li>Use light-transmission and UV-sensitive tests to compare products.</li> <li>Distinguish what the evidence shows from claims the investigation cannot support.</li> </ul>                                                                                                                                                        | <ul style="list-style-type: none"> <li>Pose a testable question and plan a full comparative enquiry.</li> <li>Identify and control variables.</li> <li>Gather repeated data and organise it in tables.</li> <li>Represent grouped data appropriately and compare results.</li> <li>Draw evidence-based conclusions, identify limitations and suggest improvements.</li> <li>Present the enquiry using scientific vocabulary and data.</li> </ul> | ultraviolet (UV); visible light; transmission; protection; variable; control variable; repeat; reliability; accuracy; data; pattern; conclusion; evaluate; evidence | <ul style="list-style-type: none"> <li>Consolidates end-of-primary expectations for increasingly independent scientific enquiry.</li> <li>Prepares pupils for KS3 practical science: planning, variables, data quality, graphs, conclusions and evaluation.</li> </ul> |