Science Long Term Plan Cycle A Year 5/6

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Living things and their habitats (micro-organisms) (Y6)	Earth and Space (Y5)	Electricity (Y6)	Living things and their habitats (Y5)	Animals including humans (Y6)	Scientists and Inventors (Y5) *Water resistance*
Knowledge and Understanding describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics	**Knowledge and Understanding** describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth describe the sun, Earth and moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	**Knowledge and Understanding** associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram	**Knowledge and Understanding** describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals	**Knowledge and Understanding** identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans	**Knowledge and Understanding** identify the effects of air resistance, water resistance and friction, that act between moving surfaces

Scientific Enquiry	Scientific Enquiry	Scientific Enquiry	Scientific Enquiry	Scientific Enquiry	
Finding and using information Pupils describe how experimental evidence and creative thinking have been combined to provide a scientific explanation (for example Jenner's work on vaccination at KS2). **Fair test** When the investigation involves a fair test, they identify key factors to be considered. In their own investigative work, they use scientific knowledge and understanding to identify an appropriate approach. **Observations** They make a series of observations appropriate to the task. **Drawing Conclusions** They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding.	**Finding and using information** They select from a range of sources of information. **Prediction** Where appropriate, they make predictions based on their scientific knowledge and understanding.	**Questioning** When they try to answer a scientific question, they identify an appropriate approach. **Observations** They begin to repeat observations and to offer simple explanations for any differences they encounter. They make enough measurements, comparisons and observations for the task. **Using equipment and measuring** They begin to repeat observations and measurements and to offer simple explanations for any differences they encounter. **Evaluating their work** They make practical suggestions about how their working methods could be improved.	**Finding and using information** Pupils describe how experimental evidence and creative thinking have been combined to provide a scientific explanation (for example Jenner's work on vaccination at KS2). **Fair test** When the investigation involves a fair test, they identify key factors to be considered. In their own investigative work, they use scientific knowledge and understanding to identify an appropriate approach. **Observations** They make a series of observations appropriate to the task. **Drawing Conclusions** They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding.	**Use of equipment** They select apparatus for a range of tasks and plan to use it effectively. They make a series of observations, comparisons or measurements with precision appropriate to the task. They measure a variety of quantities with precision using instruments with fine-scale divisions **Communicating findings** They record observations and measurements systematically and, where appropriate, present data as line graphs. They choose scales for graphs and diagrams that enable them to show data features effectively. **Drawing Conclusions** They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding. They identify measurements and observations that that do not fit the main pattern shown.	

Cycle B

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Evolution and Inheritance (Y6)	**Forces (Y5) except water resistance** *Scientists & Inventors: Lumière brothers*	**Properties and changes of materials (Y5)**	**Scientists and Inventors (Y6)**	**Light (Y6) Was Pythagoras right?**	**Animals including humans (Y5)**
Knowledge and Understanding • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	**Knowledge and Understanding** • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	**Knowledge and Understanding** compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of sod		**Knowledge and Understanding** • recognise that light appears to travel in straight lines • use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	**Knowledge and Understanding** • describe the changes as humans develop to old age

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