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| Year 6 | Science |
|  | Autumn 2 topic: Evolution and inheritance. | Spring 2 Topic: Electricity | Summer 2 topic: Living things and their habitats.  |
| **During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:*** planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
* taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
* recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
* using test results to make predictions to set up further comparative and fair tests
* reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
* identifying scientific evidence that has been used to support or refute ideas or arguments
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| National curriculum statements | * 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
 | * 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
 | * 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
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| Retrieval(to support new learning) |  |  |  |
| Knowledge statement | * Explain the scientific concept of inheritance.
* Demonstrate an understanding of the scientific meaning of adaption.
* Identify the key ideas of the theory of evolution.
* Identify evidence of evolution from fossil records.
* Understand how human beings have evolved.
* Be able to explain how adaptions can result in both advantages and disadvantages.
* I can explain how human intervention affects evolution.
 | * Explain the importance of the major discoveries in electricity.
* Observe and explain the effects of differing volts in a circuit.
* Understand variations in how components function.
* Conduct an investigation.
* Be able to record my data and report my findings.
* To know what will make a bulb brighter or a buzzer louder.
 | * Be able to give reasons for classifying animals based on their similarities and differences.
* Describe how and why living things are classified into groups.
* Be able to identify the characteristics of different types of animals.
* Be able to classify a creature based on its characteristics.
* Describe and investigate helpful and harmful microorganisms.
* Be able to identify the characteristics of different types of microorganisms.
* Be able to classify organisms found in my local habitat.
* Explain the classification of organisms found in my local habitat.
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| Vocabulary | Offspring, inheritance, variations, characteristics, adaption, habitat, environment, evolution, natural selection, fossil, adaptive traits, inherited traits.  | Circuit, symbol, cell/battery, current, voltage, resistance, electrons, amps | Characteristics, classify, taxonomist, key, bacteria, microorganisms, microscope, species.  |
| Cultural capital and local resources |  |  |  |

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| Year 6 | Science |
|  | Autumn 1 topic:Animals including humans.  | Spring 1 Topic: Light | Summer 1 topic: Living things and their habitats. |
| **During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:*** planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
* taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
* recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
* using test results to make predictions to set up further comparative and fair tests
* reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
* identifying scientific evidence that has been used to support or refute ideas or arguments
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| National curriculum statements | * 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
 | * 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
 | * 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
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| Retrieval(to support new learning) |  |  |  |
| Knowledge statements | * To know the three main parts of the circulatory system and describe the job of the heart.
* To describe the important jobs of the blood vessels and blood.
* To be able to describe the importance of exercise and how it affects the heart.
* To be able to plan a scientific enquiry.
* To be able to record, report and present results appropriately.
* To understand that regular exercise is important for a healthy body.
* To be able to explain how diet and exercise affect the body.
* To be able to recognise the impact of drugs and alcohol on the way bodies function.
 | * To be able to explain that light travels in straight lines from light sources to our eyes, and from light sources to objects and then to our eyes.
* Understand how mirrors reflect light, and how they can help us see objects.
* Be able to investigate how refraction changes the direction in which light travels.
* Be able to use a prism to show how it changes a ray of light.
* Understand how light enables us to see colours.
* Be able to explain why shadows have the same shape as the object that casts them.
 | * Be able to give reasons for classifying animals based on their similarities and differences.
* Describe how living things are classified into groups.
* Be able to identify the characteristics of different types of animals.
* Be able to classify a creature based on its characteristics.
* Describe and investigate helpful and harmful microorganisms.
* Be able to identify the characteristics of different types of microorganisms.
* Be able to classify organisms found in my local habitat.
* Explain the classification of organisms found in my local habitat.
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| Vocabulary | Circulatory system, heart, blood vessels, oxygenated blood, deoxygenated blood.  | Light, light source, reflection, incident ray, reflected ray, the law of reflection, refraction.  | Characteristics, classify, taxonomist, key, bacteria, microorganisms, microscope, species.  |
| Cultural capital and local resources |  |  |  |