

**In Years 5 and 6, topics are taught on a 2 year rolling cycle. Our Summer term topic is studied across 2 years. Working scientifically through practical investigation is at the forefront of all the work we do in science. Children often apply their knowledge of science in DT projects and other areas of the curriculum.**

**The school is actively involved in The Green Schools Award programme (Woodland Trust) and the Growing Schools programme (RHS)**

### **Electricity**

Pupils are taught to:

- \* use recognised symbols when representing a simple circuit in a diagram.
- \* 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 position of on/off switches

### **Forces**

Pupils are taught to:

- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

### **Light and the Earth in space**

Pupils are taught to:

- recognise that light appears to travel in straight lines
- 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.
- Understand 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.
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

- describe the movement of the Earth relative to the Sun in the solar system.
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.
- describe the movement of the Moon relative to the Earth and describe the Sun, Earth and Moon as approximately spherical bodies

### **The properties of everyday materials and reversible change.**

Children are taught to:

- Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal) and responses 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 evaporation.
- 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 soda.

### **Living things and their habitats, animals including humans and evolution.**

**This topic is taught in the Summer Term. The elements in this unit will be taught across 2 years with revision of those elements covered in the previous year.**

#### **Living things and their habitats**

Pupils are taught to:

- describe the difference in the life cycles of a mammal, an amphibian, an insect and a bird.
- describe the process of reproduction in some plants and animals
- 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.

#### **Animals, including humans**

Pupils are taught to:

- describe the changes as humans develop to old age

- Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
- Identify the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
- describe the way in which nutrients and water are transported within animals including humans.

### **Evolution and inheritance**

Pupils are taught to:

- 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.

### **Working scientifically**

Pupils will:

- plan enquiries including recognising and controlling variables where necessary
- take measurements with accuracy and precision.
- record data and results using diagrams and labels, classification keys, tables, bar and line graphs, and models.
- Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships and conclusions
- Present findings in written form, displays and other presentations
- Use test results to make predictions to set up further comparative and fair tests
- Use simple models to describe scientific ideas
- Identify scientific evidence that has been used to support or refute ideas or arguments.