



*Emley Dray  
School*

### **Science Progressive Pathway**

Science at Emley Dray School aims to teach children to be inquisitive about the world, acquiring skills and knowledge to gain understanding of scientific processes. We believe that children should acquire scientific skills and knowledge through practical learning: using equipment, explaining concepts and conducting experiments confidently and enthusiastically, gaining a lifelong love of science.

We aim to give the children a strong and relatable understanding of the uses and implications of science today but also in the future. This allows children to build their knowledge, encouraging them to develop their skills and apply them to all aspects of their learning.

We hope this helps them question the world around them, become ambitious and independent learners, exploring all possible answers to questions they have about the world around them.

The curriculum is taught over a two year rolling programme so that students can join in the learning as soon as they start at the Elmey Dray School.

## **Key Stage 2 Science Curriculum Year 1**

### **Living Things and their Habitats**

Differences in the Life Cycles of Mammals, Amphibians, Insects and Birds  
Describe the life process of reproduction in some plants and animals.

### **Forces**

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

### **Animals, Including Humans**

Describe the changes as humans develop to old age

### **Earth and Space**

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

## **Properties and Changes of Materials**

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

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

Demonstrate that dissolving, mixing and changes of state are reversible changes

Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

## **Key Stage 2 Science Curriculum Year 2**

### **Living Things and their Habitats**

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**

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

## **Evolution and Inheritance**

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

## **Light**

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

## **Electricity**

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

Spiritual, Moral ,Social, Cultural and British Values Curriculum	Science influences our British Values and no more than today we are able to consider a range of strategies on how to protect our planet. Students will consider this through learning outside the classroom and consider the scientific evidence of how our behaviours impact on our community
English	Question and Answer Sessions Self and Peer Assessment
Mathematics	Use of graphs, charts and tables to present data as well as application of number.
Information Technology	Using powerpoint and word to develop presentations and reports. Using internet search engines to support online research projects around differing scientific observations
Emotional Intelligence and Wellbeing	Using emotionally intelligent language linked to our commitment to saving our planet and how we can all contribute to this.
Speech, Language and Communication	Discussions on scientific knowledge and understanding within small groups
Occupational Therapy	Fine motor skills within the classroom and also gross motor skills with gardening projects. Deeper understanding of sensory issues and how some sounds are supportive of life, textures that exists in the environment.
Learning Outside the Classroom	Visits to Science focused museums and presentations. Working in the garden and exploring the natural resources of the Isle of Sheppey.