Buckfastleigh Primary School
Science Curriculum Statement

INTENT

Through Science we aim to ignite curiosity in our children; we want them to question why things happen and the way things work. We believe that a high-quality science education provides the foundations for understanding the world through **Biology**, **Chemistry** and **Physics** content. Science has changed our lives and is vital to the world's future prosperity.

A scientist from Buckfastleigh Primary School will be able to:

- Develop their scientific knowledge and conceptual understanding through the disciplines of Biology, Chemistry and Physics.
- Confidently ask questions through learning opportunities in order to develop a sense of interest and enthusiasm for Science.
- Develop an understanding of the nature, processes and methods of Science through different scientific enquiries that help them to answer questions about the world around them.
- Work independently and collaboratively when taking part in purposeful enquiries.
- Use a range scientific enquiry skills and approaches to investigate and communicate the knowledge being explored.

IMPLEMENTATION

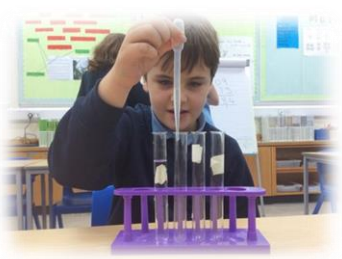
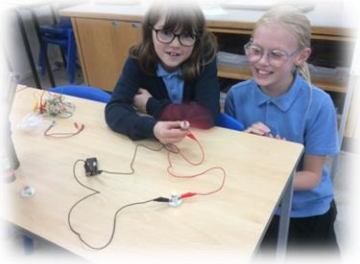
Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

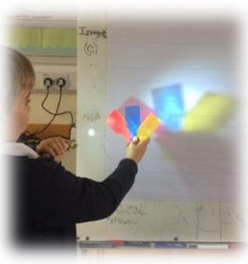
- Teachers distinguish between the specific disciplines of Biology, Chemistry and Physics.
- Through our planning, we involve problem solving opportunities that allow children to find out for themselves.
- Science is taught through purposeful and practical experiences where children gain a greater understanding of the world.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically components in order to embed scientific understanding.
- Oracy is promoted in the classroom to enable children to articulate their thinking clearly using specific, technical scientific vocabulary.
- Children are given opportunities to make links to everyday life through a range of scientific enquires and experiences.
- All children are challenged to apply their knowledge across various concepts, making links across lessons and units.
- Clear models are provided through the use of concrete materials, manipulatives and practical experiences.
- Through AfL, teachers use questions to check for understanding and higher order questioning to deepen understanding.
- Teachers plan to address and challenge common misconceptions.
- Adaptive teaching strategies are used for children with SEND to support them in accessing the curriculum; for example, using Widgit to make the vocabulary and unit content accessible, use of stem sentences and cloze procedures where appropriate.

- Children are provided with verbal feedback to help them move forward in their learning.
- There is a clear progression of knowledge and links across the curriculum.
- Teachers are clear about prior and future learning so children can do more and know more.

We endeavour to ensure that the Science curriculum we provide will give children the confidence and motivation to continue to further develop their knowledge into the next stage of their education and life experiences.
Children should work scientifically using practical scientific methods and processes that have been clear set out in the National Curriculum.

PLAN
Planning for assessment




Types of enquiry

Comparative / fair testing
Changing one variable to see its effect on another, whilst keeping all others the same.

Research
Using secondary sources of information to answer scientific questions.

Observation over time
Observing changes that occur over a period of time ranging from minutes to months.

Pattern-seeking
Identifying patterns and looking for relationships in enquiries where variables are difficult to control.

Identifying, grouping and classifying
Making observations to name, sort and organise items.

Problem-solving
Applying prior scientific knowledge to find answers to problems.

Enquiry skills

Asking questions
Asking questions that can be answered using a scientific enquiry.

Making predictions
Using prior knowledge to suggest what will happen in an enquiry.

Setting up tests
Deciding on the method and equipment to use to carry out an enquiry.

Observing and measuring
Using senses and measuring equipment to make observations about the enquiry.

Recording data
Using tables, drawings and other means to note observations and measurements.

Interpreting and communicating results
Using information from the data to say what you found out.

Evaluating
Reflecting on the success of the enquiry approach and identifying further questions for enquiry.

Pupils will learn to:			
EYFS		**By the end of Key Stage 1, children will be able to:**	**By the end of Key Stage 2, children will be able to:**
In Early Years, Science is taught through the children's learning about the world around them in their education through play. Links to their lives and outdoor learning opportunities support the learning taking place within the setting. Children will be able to describe what they see, hear and feel whilst outside. Recognising some environments that are different from the one in which they live. The children will understand the effect of changing seasons on the natural world around	**Biology**	Name and describe a range of plants and animals; Name parts of the human body; Name the basic structure of a common plants; Describe how plants need water, light and a suitable temperature to grow and stay healthy; Make associations between animals and their habitats; Describe simple food chain; Discuss what plants and animals need to grow;	Explain how water is transported in plants; Explore the part that flowers play in the life cycle of a flowering plant; Identify that humans and some plants have a skeleton; Describe differences in the life cycles and life processes of most living things; Explain how humans maintain their health; Recognise that living things can be grouped in a variety of ways; Use classification keys to group living things in the local and wider environment; Construct food chains; Explain how the digestive system of a human works; Describe differences in the life cycles and life processes of most living things; Describe how humans develop; Describe and explain how organisms (including micro-organisms) are classified; Identify and name the main parts of the circulatory system; Explain how water and nutrients are transported around the body; Recognise how living things have adapted and changed over time, using evidence from fossils;
	Chemistry	Describe the physical properties of some materials; Identify and compare the suitability of some materials; Discuss how changes to the shape of some solids can occur through manipulation;	Compare and group different types of rock; Have a simple understanding of how fossils are formed; Recognise that soils are made from rocks and organic matter; Compare and group materials together, according to whether they are solids, liquids and gases; Observe that some materials can change state; Use evidence to discuss separation techniques for solids, liquids and gases; Demonstrate an understanding of reversible and non-reversible changes;

them. Ambitious scientific vocabulary is used around the environment and in context through adult led discussions.	Physics	Observe changes across the 4 seasons; Observe and describe weather associated with the seasons and how day length varies;	Recognise that light is required to enable living things to see objects; Explain how we see things; Explain how shadows are formed; Compare how things move on different surfaces; Observe and describe how magnets work; Identify how sounds are made; Recognise how some components work in a simple electrical circuit; Construct a simple series electrical circuit; Give reasons for variations in the effectiveness of components in a simple electrical circuit. Describe the movement of the Earth, sun and moon; Identify the effects of gravity, friction and mechanisms that allow a small force to have a greater effect;

IMPACT

- Children are resilient, resourceful and enjoy science learning.
- Children can explain what they have learnt and ask questions.
- Assessment shows that children are equipped with the scientific knowledge required to understand the uses and importance of scientific processes.
- Children and teachers are connecting learning through re-capping, re-visiting and revising. Children are 'going deeper' in their learning and exploring higher order questions.
- Teachers are asking questions to check understanding throughout each lesson and unit.
- Children are provided with feedback to help them move forward in their learning.