



# Holy Trinity Church of England (Aided) Primary School

## Curriculum Rationale

### Science

#### *The Best for Every Child - a Unique Child of God*

*See how much the Father has loved us! His love is so great that we are called God's children — and so, in fact, we are*  
(1 John 3:1)

#### **Intent**

Cookridge Holy Trinity Primary School, as an inclusive school, offer all our children a high-quality science education where pupils are encouraged to ask questions, make predictions and analyse causes of natural phenomena. Our children experience excellent teaching where they are taught essential aspects of the knowledge, methods, processes and uses of science, which promotes in them, a curious, questioning attitude that leads to investigation in order to explain what is occurring in the world around them. It is essential to have continuity and progression throughout the science curriculum so that it provides structure, purpose and meaning.

#### **Implementation**

##### **Reception**

Our Reception classes follow the EYFS statutory framework which aims to support children's development in seven areas of learning and development. Children begin their scientific journey in reception by exploring the world around them by exploring the similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They will make observations of animals and plants, explaining why some things occur and talk about changes. In the autumn term they will explore light, dark and space, while in the spring they will find out about dinosaurs and fossils. In the summer term they will find out more about animals with a trip to a farm and learn about floating and sinking. Throughout all of their investigations the children begin to use language to explain what they are seeing and the changes that they see.

##### **Year 1**

By year 1, children will be developing their use of science vocabulary, and the use of questioning to explore the world around them. Throughout the year, they find out about the changes across the four seasons, through careful observations, the use of appropriate measuring equipment and using our outside space. In year 1 children will learn about plants by identifying and describing the basic structure of a variety of common flowering plants, including trees. While learning about animals, including humans, they will describe and compare the structure of a variety of common animals and identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. They will also find out about everyday materials and observe changes across the four seasons.

## **Year Two**

In year 2 the use of practical exploration continues as the children learn about living things and their habitats through exploring and identifying that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants. In the spring term the children will learn about life cycles first hand while observing live chicks in the classroom. They will also find out and observe how plants need water, light and a suitable temperature to grow and stay healthy. When learning about animals, including humans, children will describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. They will also learn about the use of everyday materials. Links are made to Geography when the children compare and study different weather around the world and opportunities are taken to use appropriate measuring equipment.

## **Year Three**

By year 3 children's understanding of working scientifically is widening and they are given many practical opportunities to apply their knowledge of forces to investigate magnetic attraction and use their understanding about magnetism to explain everyday phenomena. They also learn about light and investigate the relationship between light, objects and shadows. When learning about rocks, the children are taught to compare and group together different kinds of rocks on the basis of their appearance and physical properties. Children will identify and describe the functions of different parts of flowering plants and explore the requirements of plants for life and growth, as well as how they vary from plant to plant. While learning about animals, including humans, children will be taught to identify that animals need the right types and amount of nutrition and they get nutrition from what they eat. They will also identify that humans and some other animals have skeletons and muscles for support, protection and movement.

## **Year Four**

In year 4 children will learn about living things and their habitats, recognising that living things can be grouped in a variety of ways and explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. When learning about animals, including humans, the children will describe the simple functions of the digestive system and identify the different types of teeth in humans and their simple functions. Investigations will be conducted into states of matter where children will compare and group materials together, according to whether they are solids, liquids or gases. Children will also explore sound by finding patterns between the pitch of a sound and features of the object that produced it, as well as patterns between the volume of a sound and the strength of the vibrations that produced it. While studying electricity, children will construct simple electrical circuits, identifying and naming the basic parts, including cells, wires, bulbs, switches and buzzers.

## **Year Five**

Building on their scientific knowledge and working scientifically skills in lower KS2, Year 5 focus on developing a deeper understanding of a wide range of scientific ideas, through exploring, talking and asking questions about scientific phenomena; they encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. Cooking is used to help investigate the properties of materials, and writing links are made through the production of instruction texts. Earth and Space is the theme for Spring term, which incorporates and links science, history and English. Writing tasks include: biographies of astronauts and Moon landing reports. The night sky is also brought to life with a mobile planetarium visiting school. While

learning about forces both classes in Year 5 have a catapult competition which culminates in the winning team attending a Science Festival at Ralph Thorseby High School. When studying living things and their habitats, links are made to PSHCE lessons, to understand about changes to our own bodies and sex education (completed alongside parental engagement).

## **Year Six**

In Year 6 the children build on their experiences from Year 5, and previous years, by deepening their understanding of the methods of working scientifically, and use to select the most appropriate ways to answer scientific questions. When exploring animals, including humans they are provided with opportunities to select and use the different types of scientific enquiry – including carrying out comparative and fair tests, observing changes over time and noticing patterns. Further in the autumn term, the children explore evolution, with links made to RE lessons, where they are encouraged to make connections to their own experiences and to ask scientifically valid questions. When investigating living things and their habitats, the children carry out practical tasks, including the use of grouping and classifying things. While exploring the topics of light and electricity, the children have the opportunity to plan and lead their own investigations, using a range of equipment – using skills developed from different year groups – to answer questions and present their findings in appropriate ways.

## **Whole School Science 2021-22**

Cookridge Holy Trinity provides children with a variety of memorable, experiential opportunities to consolidate knowledge, learn new skills and develop a sense of excitement and curiosity in science. This includes regular use of our extensive outside areas, science competitions between local schools and our participation in the Great Science Share, which involves the whole school and parents. We connect with the wider community by inviting those working in science and technology industries to come into school and share their experiences of working in a scientific profession. Additionally, science school trips - such as visits to Hesketh Farm (Reception), Tropical World (Y3), the Science Festival at Ralph Thoresby (Y5) and Peat Rigg (Y6) - are also vital in nourishing our rich, creative curriculum.

## **Impact**

By the time children leave Holy Trinity they will have developed an understanding of scientific knowledge and conceptual understanding through the study of biology, chemistry and physics, and will have developed a way of working scientifically through their practical science lessons. Children will leave with the science skills required to understand the uses and implications of science and so become scientifically literate members of society.