**Science Policy**



**Intent:**

*Rationale:*

A high-quality science education provides the foundations for understanding the world…. Science has changed our lives and is vital to the world’s future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. (National Curriculum 2014)

*Excellence statements:*

**Excellence in Science is our goal for all of our pupils.**

**Excellence in science is typified by:**

* Children who enjoy the experience of working scientifically.
* Children who demonstrate excitement and curiosity about natural phenomena.
* Children eager to discover concepts through observing scientific phenomena and conducting experimental investigations for themselves.
* Children able to observe, measure, draw, record and analyse in a scientific manner.
* Children with a healthy skepticism for scientific ‘facts’.
* Children who understand that scientific knowledge is built upon repeatable experimental observations and results.
* Children with the necessary knowledge to work scientifically, asking questions and making predictions.
* Children who understand how their growing scientific knowledge and understanding fit into the ‘big picture’ of real life science.

**Implementation:**

Science is taught from the **Early Years Foundation Stage** (under ‘Understanding the World’). Children are supported in developing the knowledge, skills and understanding that help them to make sense of the world. They are provided with opportunities to use a range of tools safely; encounter creatures, people, plants and objects in their natural environments and in real-life situations; undertake practical experiments and work with a range of materials.

In **Key Stages 1 and 2** we understand the importance of providing adequate time for developing scientific knowledge, skills and understanding. Therefore, science lessons are taught weekly. Lessons can vary in length but will amount to approximately 3 hours over a 2 week period.

The content of science **teaching and learning** is set out in the **2014 National Curriculum** for primary schools in England. Within this, certain topics and areas are repeated across year groups, meaning that children may revisit a particular topic in each year of primary school but with increasing difficulty and with a different focus each time (see curriculum map). Alongside these areas, runs the **Working Scientifically** element. This focuses on the skills the children need to become accurate, careful and confident practical scientists. Children are expected to master certain skills in each year group and this progression forms part of the National Curriculum for Science document.

Year group planning includes knowledge, skills and understanding development for each unit. ‘Working scientifically’ is embedded within each unit of work and not taught as a separate strand.

There are a variety of ways in which the teaching may be effective and our school aims to encourage learning through **investigation**, with an emphasis on **first-hand experience**. Science lessons have no formal structure but typically contain the following elements:

* All lessons are focused around a key question.
* There is an element of working scientifically in each science lesson (where appropriate).
* Opportunities are available for children to work as a whole class, in small groups, in pairs or individually over a unit of work.
* There are pen ended learning tasks during a unit of work.
* Discussion is used regularly – links to prior knowledge/learning, posing questions, sharing ideas, predictions etc.
* Practical tasks and/ or investigative work are present in the majority of lessons.
* Recording – presenting information about what they have found out in a variety of ways.
* Incorporating questions that apply to scientific thinking.
* Differentiated learning where appropriate.

The **safe use of equipment** and consideration of others is promoted at all times. The Association for Science Education publication, ‘Be Safe!’, should be used by staff as a point of reference for issues regarding health and safety.

**Assessment:**

In line with the ‘Assessment in Foundation Subjects’ policy, ‘knowledge harvests’ and ‘exit points’ form the key summative assessment elements of the science curriculum. Teachers use ‘knowledge harvests’ to reactivate key learning from previous units that will be useful in the new unit of work. Exit points allow the teacher to gain a picture of pupils’ overall understanding at the end of a unit of work. As well as this, teachers use ongoing, formative assessment on a lesson by lesson basis to gauge pupil understanding of the key elements of lessons.

**Impact:**

The impact of this policy on outcomes for children is measured against our Excellence Statements for Science.

The Science subject leader monitors the impact of this policy through:

* Book scrutiny
* Pupil interview / survey
* Data analysis
* Teacher interview / survey

Leadership team monitoring is also fed to the Science lead.