

**SS Peter and Paul RC Primary School**  
**SCIENCE POLICY**  
**July 2015**

**MISSION STATEMENT**

We would like everyone involved in the life of our school to explore and promote God's values so that everything that happens in our school demonstrates God's love for everyone.

*Together with the Spirit we will create an oasis where every child matters.*

**AIMS OF SCIENCE POLICY**

Our Science Policy follows The National Curriculum 2014 for Science Guidelines and aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of Biology, Chemistry and Physics;
- develop understanding of the **nature, processes and methods of Science** through different types of science enquiries that help them to answer scientific questions about the world around them;
- are equipped with the scientific knowledge required to understand the **uses and implications** of Science, today and for the future.

**PURPOSE OF STUDY-WHY TEACH SCIENCE?**

A high-quality Science education provides foundations for understanding the world. Science has changed our lives and is vital to the world's future prosperity. Through building 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 key knowledge and concepts can be used to explain what is occurring, predict how things will behave, and analyse causes. This understanding should be consolidated through their appreciation of applications of Science in society and the economy.

In teaching Science we are developing in our children:

- a positive attitude towards Science and an awareness of its fascination;
- an understanding of Science through a process of enquiry and investigation;
- confidence and competence in scientific knowledge, concepts and skills;
- an ability to reason, predict, think logically and to work systematically and accurately;
- an ability to communicate scientifically;
- the initiative to work both independently and in co-operation with others;
- the ability and meaning to use and apply science across the curriculum and real life.

**PLANNING**

**School curriculum**

The programmes of study for Science are set out year-by-year for Key Stages 1 and 2. We are however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, School has the flexibility to introduce content earlier or later than set out in the programme of study and may introduce key stage content during an earlier key stage if appropriate.

Teachers will base their planning on the programmes of study for their relevant year groups.

### **Scientific knowledge and conceptual understanding**

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of Science, including collecting, presenting and analysing data.

### **The nature, processes and methods of science**

'Working scientifically' specifies the understanding of the nature, processes and methods of Science for each year group. It should not be taught as a separate strand.

### **Attainment targets**

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

## **Key Stage 1**

The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about Science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Pupils should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1.

## **Lower Key Stage 2 – Years 3 and 4**

The main focus of Science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair tests and finding things out using secondary sources of information. They

should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

'Working scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

### **Upper Key Stage 2 – Years 5-6**

The main focus of Science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At Upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer Science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly.

'Working and thinking scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

**See Appendix 2 for year group specific topics.**

### **ASSESSMENT**

**This is achieved through:**

• **discussion with pupils;**

- observation of pupils;
- marking work;
- half termly assessment tests from Years 1 – 6 [assessments recorded in teachers' mark books to inform staff, pupils, parents and for report writing.]

### **MONITORING AND EVALUATION**

The Subject Leader follows the School Self Evaluation for Subject Leaders' Guidelines and is achieved through;

- monitoring and evaluation of pupils' work;
- lesson observations;
- monitoring of planning

## **SAFETY**

**Follow schools Health and Safety policy**

### **Section(s):**

Control of Substances Hazardous to Health (COSHH)

Work Equipment – Design Technology and Food Technology

Guidance for risk assessments can be found on CLEAPPS

## **PARENTAL INVOLVEMENT**

Following the guidelines in the whole School Policy on Parental Involvement in their Children's Education, parents may be involved in class based work if they can offer a particular skill or extend and compliment the class teacher's skills and knowledge.

## **REPORTING TO PARENTS**

Following whole School Policy based on National requirements and guidelines.

## **MARKING WORK**

Refer to the whole School Marking Policy.

## **CROSS CURRICULAR LINKS**

**We aim to promote writing and math through all areas of the curriculum. See Appendix 1 for year group specific links.**

## Appendix 2

Year Group	Science Topics
EYFS	Scientific knowledge is developed through all areas of EYFS curriculum and 'Understanding the world' in particular.
Year 1	Plants Animals and Humans Everyday Materials and their properties Seasonal Changes
Year 2	Animals and Humans Plants Living Things and their Habitats Materials and their uses
Year 3	Rocks, Fossils & Soils Forces & Magnets Health and Movement How Plants Grow Light & Shadow
Year 4	Living things and their Habitats Animals including Humans States of Matter Sound Electricity
Year 5	Earth and Space Forces Properties of materials: reversible and irreversible changes Animals including Humans. Plant life cycles.
Year 6	Animals including Humans Evolution and Inheritance Health and Lifestyles Light and Shadow Forces Electricity

## Appendix 1

### Y1

**Plants:** information booklet - What is a plant?

**Animals and Humans:** Senses poems

**Everyday Materials and their properties:** Narrative - 3 little pigs.

**Seasonal Changes:** Explanations - How do we get seasons?

### Y2

**Animals and Humans:** Information booklets

**Plants:** Explanation - How do plants grow?

**Living Things and their Habitats:** Information - life cycles

**Materials and their uses:** persuasion - to use the best/right material.

### Y3

**Rocks, Fossils & Soils:** Information - different rock types

**Forces & Magnets:** Recount on magnets investigation.

**Health and Movement:** persuasion - balanced diets.

**How Plants Grow:** Narrative- The story of germination.

**Light & Shadow:** Comic strips

### Y4

**Living things and their habitats:** Information - habitat booklets

**Animals inc Humans:** Explanations -how does digestive system work?

**States of Matter:** Non-chronological report on temperature in class each day.

**Sound:** Poetry - sound poems

**Electricity:** Biography of scientist eg Thomas Edison.

### Y5

**Earth and Space:** Information - facts about earth and space?

**Forces:** Persuasion - which surface is best for friction?

**Properties of materials: reversible and irreversible changes:** Explanations- how can changes be reversed?

**Animals including Humans:** Narrative - link to Anne Fine story flour babies.

**Plant life cycles:** Biographies of well-known scientist (animal behaviourist/naturalist)

### Y6

**Animals including Humans:** Information - a guide to staying healthy

**Evolution and Inheritance:** Biography of Mary Anning (paleontologist)

**Health and Lifestyles:** Poetry write poem about self

**Light and Shadow:** Explanation -how do we see?

**Forces:** Narrative - story of gravity?

**Electricity:** Recount of electricity investigation.

**Review date: July 2016**