

# Castle Primary School

## Science Policy

REVIEW DATE: JANUARY 2018

### Introduction

This policy will be reviewed on a bi-annual basis to ensure relevance, effectiveness and practicality.

Science contributes to the core subjects of the National Curriculum by developing pupils' abilities to ask questions, develop a sense of excitement and curiosity about natural phenomena and investigate ideas and solve problems. It is therefore our view that pupils at Castle Primary should be taught in a safe, secure and stimulating environment enabling them to all achieve their potential in the areas of science regardless of their ability, gender or ethnic background.

### Aims & Objectives

The teaching of science at Castle Primary 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.

### Teaching and Learning:

#### EYFS

Science in the Early Years Foundation Stage is planned using the Early Years Curriculum 'Understanding of the World'.

#### Key Stage 1

Science teaching in key stage 1 will:

- Enable pupils to experience and observe phenomena, by looking more closely at the natural and humanly-constructed world around them.
- Encourage pupils to be curious and ask questions about what they notice.
- Help children 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.

- Teach children 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.
- 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.
- **Always** include 'Working Scientifically' which will be taught through and be clearly related to the teaching of substantive science content in the programme of study.
- Enable pupils to read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

## Lower Key Stage 2

Science teaching in lower key stage 2 will:

- Enable pupils to broaden their scientific view of the world around them.
- Teach pupils to 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.
- Encourage pupils to 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 comparative and fair tests and finding things out using secondary sources of information.
- Teach children to draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.
- **Always** include 'Working Scientifically' which will be taught through and be clearly related to the teaching of substantive science content in the programme of study.
- Enable pupils to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

## Upper Key Stage 2

Science teaching in upper key stage 2 will:

- Enable pupils to develop a deeper understanding of a wide range of scientific ideas.
- Teach pupils to do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.
- Let the children encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.
- Enable children to recognise that scientific ideas change and develop over time.
- Teach children to 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 comparative and fair tests and finding things out using a wide range of secondary sources of information.
- Teach pupils to 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.
- **Always** include 'Working Scientifically' which will be taught through and be clearly related to the teaching of substantive science content in the programme of study.
- Enable pupils to read, spell and pronounce scientific vocabulary correctly.

## Planning

- Key Stage 1 and 2 teachers plan science lessons using the new National Curriculum (2014).
- 'Working scientifically' is embedded throughout the areas of learning in key stage 1 and 2; this focuses on the key aspects of scientific enquiry which enable pupils to investigate and answer scientific questions.
- Areas of learning within key stage 1 and 2 ensure that statutory requirements are being covered through the specific disciplines of biology, chemistry and physics (teachers may also refer to the non-statutory guidance which provide additional support).
- See Castle's long-term plan for details of the specific areas of learning covered in each year group over the year.

## **Health and Safety**

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class teachers, teaching assistants and the subject leader will check equipment regularly and report any damage, taking defective equipment out of action. Teachers will ensure the school's Health and Safety Policy is integrated into science teaching.

## **Inclusion**

Pupils with diverse learning needs in science are provided for through:

- Teachers planning for the pupils' full participation - quality first teaching.
- Setting high expectations for all pupils.
- Providing opportunities for all pupils to achieve.
- Creating effective learning environments.
- Providing equality of opportunity through teaching approaches.
- Liaison with SENDCOs / Gifted and Talented leaders who monitor the development and delivery of appropriate interventions.
- Liaison with outside agencies, e.g. psychological services.
- Allowing pupils access to specialist equipment and approaches where necessary.
- Continuous consultation with and involvement of parents.

## **Dyslexia Friendly**

Castle Primary is supportive of a Dyslexia Friendly environment having gained the Entry Level Status in 2014.

## **Assessment and Recording**

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.

## **Monitoring and Evaluation**

The Head Teacher, Science Leader and Governors manage a programme of monitoring and evaluation of the teaching and learning in the school through:

- The implementing of a monitoring cycle
- The monitoring of planning
- Lesson observations
- Staff consultation
- Book scrutiny
- Scrutiny of teacher assessments
- Monitoring of standards in science and subsequent setting of target