

Ringway Primary School

Science Policy

The Future starts here

Our aim is to provide the foundations for a positive future for our pupils.

A future where pupils learn to stay safe, to understand the importance of a healthy lifestyle , and to enjoy all they do.

A future where they are money smart & make a positive & respectful contribution to their culturally diverse community - at a local, national & global level.

A future where they aspire to be the best they can be & achieve their full potential

Created January 2015 to be reviewed 2018

Signed C of Gov.....

Headteacher.....

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.

Planning and resources can be found in the Science section of the curriculum folder in Teacher Area Only. Planning should be done on the blank planning form for each unit and saved in the relevant year group folder. Paper copies should also be kept in planning folders. Coverage should be approximately one unit per half term.

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.

EARLY YEARS FOUNDATION STAGE

In the Early Years Foundation Stage, Science is included as aspects of : Technology; People and Communities; The World. The children in Nursery and Reception classes are provided with a broad range of opportunities and experiences through which they may work towards the Early Learning Goals:

- To investigate objects and materials by using all of their senses as appropriate;
- To find out about and identify some features of living things objects and events they observe;
- To look closely at similarities, differences, patterns and change and to ask questions about why things happen and how things work.

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.

THE ROLE OF THE CO-ORDINATOR

The role of the co-ordinator can be summarised as follows:

- To take the lead in policy development and the production of schemes of work.
- To monitor the effectiveness of the teaching of Science, both in the planning stage and in its delivery.
- To be available to support colleagues and to purchase and organise resources.
- To attend local authority network meetings to keep up to date in Science and advise colleagues appropriately.
- To liaise with other teaching staff regarding opportunities for children to participate in activities outside the school, e.g. Science days organized by other schools.

RESOURCES

All science resources are located centrally in the cold room.

A lists of resources is located in the *Teacher Area Only* directory. It is the responsibility of each adult to keep the resources neat and tidy and to tell the co-ordinator if any resources need replacing.

EQUAL OPPORTUNITIES

All children are given access to the Science curriculum. The Schemes of Work are used to provide differentiation by outcome and intervention. Boys and girls have equal access to all resources and this is carefully monitored.

Gifted and talented children are identified in line with the Gifted and Talented Policy and planning will include extension activities for these children.

ASSESSMENT

This is achieved through:

- discussion with pupils;

- observation of pupils;
- marking work;
- Half-termly assessments for Y1-6. Marks to be kept in assessment folder.

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;
- learning walks;
- monitoring of planning

SAFETY

Following COSHH guidance 'Be Safe'.

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 MCC guidelines.

MARKING WORK

Refer to the whole School Marking Policy.

Review date: June 2018