



Science Policy

INTRODUCTION

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.

AIMS

- To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- To build on pupils' curiosity and sense of awe of the natural world by emphasising the relevance of science to contemporary local and global issues such as climate change, renewable energy, decline in local bird populations. etc
- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- To develop an 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
- To ensure pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future
- To introduce pupils to the language and vocabulary of science
- To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements
- To develop pupils' use of computing in their science studies

PLANNING

- The main aspects of science to be studied will be determined by the Revised National Curriculum (May 2015) which provides a single-year programme of study and objectives for each year from Year 1 to 6. At Foundation Stage, planning is based upon the Early Years Foundation Stage Framework, specifically 'Understanding the World'. Our school curriculum for science on a year-by-year basis is attached to this policy.
- 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.
- By the end of each key stage, pupils are expected to know, apply and understand the knowledge, skills and processes specified in the relevant programme of study.

Foundation Stage

- During the Foundation Stage children begin to explore the world around them, with specific Science work covered through the Early Learning Goal 'Knowledge and Understanding of the World'. A detailed description of Early Learning objectives is included as an appendix.
- Throughout our Science teaching we hope that our children will develop a sense of awe and wonder about the world around them.

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.

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 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
 - finding things out using secondary sources of information.
- Pupils should draw simple conclusions and use scientific language to talk about and write about what they have found out.
- Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

Key Stage 2 – Years 5 and 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, pupils 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
 - finding things out using a 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.

ASSESSMENT

Teachers will assess the progress of each pupil through:

- discussion with pupils
- observation of pupils
- marking work
- pre- and post-learning tasks from Years 1 – 6 [assessments recorded in teachers' mark books to inform staff, pupils, parents and for report writing]
- in Foundation, children are expected to meet the Early Learning Goal 'Understanding the World' and children are assessed through observations, orally and any written records

Achievement is recorded through EAZMAG half-termly. Class teachers record progress and achievement for each pupil in the specific objectives and subject matter taught during each half-term. Teachers are encouraged to use the PLAN documents to help support their judgements. Full details of the science curriculum can be found in the curriculum page of the school's website. The assessment framework for the Early Years Foundation Stage is attached as an appendix.

MONITORING AND EVALUATION

To ensure the consistency of classroom practice and assessment across school, the science subject leader, class teachers and relevant other leaders carry out the following:

- lesson observations
- book 'looks'
- whole school, phase and year group work moderation
- sharing of good practice
- usage of PLAN documentation
- regular attendance to science network meetings

HEALTH & SAFETY

Following COSHH guidance 'Be Safe'.

APPENDIX:

KING EDWIN PRIMARY & NURSERY SCHOOL

Early Years Foundation Stage Framework

| Early learning goal | Description of 'exceeding' |
|----------------------------|---|
| 13. People and communities | <p>Children will:</p> <ul style="list-style-type: none">• know the difference between past and present events in their own lives and some reasons why people's lives were different in the past• know that other children have different likes and dislikes and that they may be good at different things• understand that different people have different beliefs, attitudes, customs and traditions and why it is important to treat them with respect |
| 14. The world | <p>Children will:</p> <ul style="list-style-type: none">• know that the environment and living things are influenced by human activity• be able to describe some actions which people in their own community do that help to maintain the area they live in• know the properties of some materials and can suggest some of the purposes they are used for• be familiar with basic scientific concepts such as floating, sinking, experimentation |
| 15. Technology | <p>Children will:</p> <ul style="list-style-type: none">• find out about and use a range of everyday technology• select appropriate applications that support an identified need - for example, in deciding how best to make a record of a special event in their lives, such as a journey on a steam train |