Abbey Mead Primary Academy - Science Policy

At Abbey Mead, we enable children to develop an inquisitive mind and nurture creative thought through an exciting, exploratory and investigative Science curriculum. We will equip our pupils with an understanding of the natural world, based on facts learned through experiments and observations. Science lessons will involve pupils finding out why things happen in the way they do. Through Science experiments, children will learn to ask scientific questions and begin to appreciate the way in which Science will affect them on a personal, national, and global level.

Science Skills to be taught

The objectives of teaching science are to enable children to:

1. Ask and answer scientific questions to develop children's curiosity
2. To use enriched language to develop pupil's scientific vocabulary and to enable them to articulate scientific concepts clearly and precisely
3. To teach in-depth knowledge of scientific processes, methods and uses of Science
4. Plan and carry out scientific enquiries to develop children's investigative skills
5. Use a range of scientific equipment, to evaluate evidence and present their conclusions clearly and accurately

Principles of Good Science Lessons

1. Children's curiosity is encouraged and valued; they are excited and enthusiastic when participating in their Science lessons.

2. Science is inspiring and practical, allowing children to enjoy learning through exploration and questioning. This will be achieved through the use of use high quality resources.

3. Children have access to a range of enrichment/extra-curricular opportunities e.g., open evenings, eco club, sustained whole school projects, Science Week, school trips and workshops.

4. Progression of Science skills is evident and taught throughout the school.

5. Children can articulate their learning and confidently use accurate scientific vocabulary in context.

6. Through enquiry, pupils will make decisions and answer their own questions.

Science Curriculum Planning

Science is a core subject in the National Curriculum. The school uses the National Curriculum objectives as well as the Curriculum Overview as the basis of its planning.

The Science leads will evaluate the quality of the teaching of Science on a termly basis. This will be achieved through observations, professional discussion and monitoring progress.

As a school, each Key Stage will aim to plan for a minimum of 1 hour of science per week (or an equivalent number of hours in blocks). In the Early Years, science will be taught as a focus as well as through the continuous provision.

Cross-Curricular Links

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The children develop oral skills in science lessons through discussions, learning technical vocabulary and through recounting their observations of scientific experiments. To develop reading skills, children will read a variety of scientific texts and use comprehension skills to find relevant information and answer questions. They develop their writing skills through writing reports, summarising the outcome of experiments and by recording information.

Mathematics

Mathematics is an integral part of the science curriculum. Children will continue to develop number skills during investigations. When working on investigations, the children will use the skills of estimation, data collection and analysis of data to record and summarise their findings. Children will interpret a variety of graphs and diagrams and use this information to inform their learning. Mathematical skills such as weighing and measuring will underpin many of the science units e.g. growing.

Personal, social, health and citizenship education (PSHCE)

Science makes a significant contribution to the teaching of PSHE and citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way in which people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. They can organise campaigns on matters of concern to them, such as helping poor or homeless people. Science thus promotes the concept of positive citizenship.

Spiritual, moral, social and cultural development

The teaching of science offers children many opportunities to examine some of the fundamental questions in life, e.g. the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions and this allows children to have the opportunity to discuss a variety of issues e.g. the effects of smoking and the moral questions involved. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way in which we manage the Earth's resources. Science teaches children about the reasons why people are different and by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other communities, cultures and beliefs.

ICT

Children use ICT to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Data loggers may be used to assist in the collection of data and in producing tables and graphs. Children learn how to find, select, and analyse information on the internet and on other media. Pupils will have the opportunity to use animations, videos and real-life images to enhance their understanding. This will be achieved by using a range of technological equipment e.g. microscopes, light boxes, view finders etc...

<u>Teaching and Learning Science in the Foundation Stage</u>

1. Developing the crucial knowledge, skills and understanding that helps them make sense of the world

2. Exposure to practical activities that are based on first-hand experiences. These will encourage exploration, observation, problem solving, prediction, critical thinking and decision-making and discussion
3. Developing high quality, purposeful talk for science using key vocabulary
4. Experiencing a wide range of activities, indoors and outdoors, including adult-focused, child-initiated and independent play
5. Provide children opportunities that encourage interest and curiosity

Teaching and Learning Science in Key Stage One and Two

1. Developing the crucial knowledge, skills and understanding through a skill-based approach
2. Through practical enquiries, pupils will make decisions and answer their own questions
3. Working both collaboratively and independently to answer key scientific questions
4. Developing high quality, purposeful talk for science using technical vocabulary
5. Building upon prior Science learning, both skill and knowledge based
6. Beginning to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts
7. Using ICT and scientific equipment to support and extend their learning
8. Beginning to make links across subjects
9. Experiencing a variety of teaching styles and strategies that promote positive Science learning
10. To raise social and moral questions and to understand the differences between people
11. Follow key principles laid out in the Science Policy

Inclusion

Our inclusive approach allows all children to learn regardless of race, gender, faith, culture or disability. We select and use resources that positively reflect all the above. Inclusion for Science is carried out in line with the schools corresponding policies.

Assessment for Learning

Assessment for Science is carried out in line with the school policy, using both summative and formative assessment procedures. Written or verbal feedback is given to the child in line with school marking policy, to help guide the children's progress.

Monitoring

Monitoring for Science is carried out in line with the School Improvement Plan, by the Science leads. Best practice for Science is identified and shared amongst practitioners. Samples of children's work will also be collected to help moderate between year groups and to identify best practice. This will allow us to plan effectively for progression.

Health and Safety

Health and safety is in line with the school's policy. Safe use of equipment is to be promoted at all times.