Science Policy Silkstone Common J and I School

Introduction

The intent of our Science Curriculum is to deliver a curriculum which is accessible to all and that will maximise the outcomes for every child so that they know more, remember more and understand more. As a result of this they will

- 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 though different types of science enquiries that help them to answer scientific questions about the world around them.
- Be equipped with the scientific knowledge required to understand the uses and implications of Science today and for the future.
- Develop an enthusiasm and enjoyment of scientific learning and discovery.

Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way that they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way in which science will affect the future on a personal, national and global level.

Intent

- To build a science curriculum which develops learning and results in the acquisition of knowledge.
- To build a science curriculum which enables children to become inquiry based learners.
- To develop scientific knowledge
- To deliver a curriculum which is accessible to all.
- To ask and answer scientific questions.

To plan and carry out scientific investigations, with the correct use of equipment.

- To know about life processes and the human body
- To know about materials, electricity, light, sound and natural forces
- To know about the nature of the solar system, including the earth
- To know how to evaluate evidence, and to present conclusions both clearly and accurately
- To learn the correct us of scientific vocabulary

Implement

We have a clear and comprehensive scheme of work in line with the National Curriculum. We reflect on previous learning and show a good use of science equipment. We also encourage Educational visitors/ visits e.g. Mad Science Club

Teaching and learning style

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes, we do this through whole-class teaching, while at other times, we engage the children in an enquiry-based research activity, based on practical experience whenever possible. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They can use computers where appropriate to enhance their learning. They take part in role-play and discussions, and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities eg investigating a local environmental problem, or carrying out a practical experiment and analysing the results.

We recognise that in all classes, children have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

- Setting tasks which are open-ended and can have a variety of responses
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks)
- Grouping children by ability in the room and setting different tasks for each ability group
- Employing 'buddy' system where a higher ability child works with a less able child to the benefit of both
- Using classroom assistants to support the work of individual children or groups of children.

Time Allocation
Science is taught as a block of lessons weekly. Each half term every class has a focus in science.

The Foundation Stage
We teach science for the foundation stage based around topic work covered during the year. We relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water. Every opportunity for the children to explore and observe outdoors is taken so that the children have first-hand experience of the environment and creatures in their natural habitat.

SEND
We recognise the importance of ensuring that children with identified Special Educational needs and/or Disabilities have access to an ambitious Science curriculum. Within the curriculum area of Science, SEND children will be provided with reasonable adjustments through their tasks and level of challenge provided.

The contribution of science to teaching in other curriculum areas

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 (e.g. of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information. They also develop a bank of scientific vocabulary and understand it's correct use.

Mathematics

Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures, they are learning to use and apply number. Through working on investigations, they learn to estimate and predict and use line graphs, bar charts and tally charts. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers.

Personal, social and health education (PSHE/RSE) and citizenship

Science makes a significant contribution to the teaching of PSHE/RSE and citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare (e.g. health, smoking, alcohol and drugs). 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

Science teaching 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. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking, and the moral questions involved in this issue. 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 people.

Science and Computing

Children have the opportunity to use computers in school. Examples of how it may be used include allowing children to investigate processes which it would be impracticable to do directly in the classroom. Also to record, present and interpret data, to review, modify and evaluate their work, and to improve it's presentation. Children learn how to find, select, and analyse information on the Internet and on other media.

Assessment for Learning

Teachers will assess children's work in science by carrying out an assessment for their class in the first week of the following term. In week 2 of that term staff will share their analysis to review and address misconceptions.

Resources

We have sufficient resources for all science teaching units in the school. We keep these in a central store, in labelled boxes of equipment. The library contains a good supply of science topic books to support children's individual research.

Impact

Monitoring and review

The Science Coordinator is responsible for

- Monitoring the teaching and learning of Science and to ensure that children know more, remember more and understand more about Science.
- Overseeing and implementing the policy.
- Writing an annual action plan and evaluating progress throughout the year.
- Attending INSET and any available network meetings to provide staff with appropriate feedback.
- Attending any available courses to keep knowledge up to date and feedback to staff upon return.

Signed:

Date: July 2021