Westgarth Primary School

SCIENCE POLICY

Intent

At Westgarth Primary School, the intention of the science curriculum is to stimulate and excite pupil's curiosity about natural phenomena and events in the world around them, whilst developing and promoting our pupils independence, resilience and respect. Pupils understand how major scientific ideas contribute toward technological change – impacting on industry, medicine, business and improving quality of life. They learn to question and discuss science-based issues that may affect their own lives, the directions of society and the future of the world, encouraging and supporting the development of Science capital.

This knowledge base of Science has a practical application to everyday experiences and is therefore important for pupil's social development. By working scientifically, through tailored investigations involving planning, testing, recording and analysing results, students come to appreciate the nature of the learning process.

All teachers, design and plan activities providing opportunities for students to display and to develop and apply their creative and imaginative capacities in Science. These activities also enable them to experience an ongoing sense of success in their learning which are transferable to other subjects.

Aims:

Our Science Policy follows The National Curriculum 2014 for Science to ensure that all pupils develop:

- 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 use scientific terms.
- the ability to work both independently and in co-operation with others.
- the ability to use and apply science across the curriculum and real life.

Equal Opportunities and Inclusion

All children have equal access to the full Science programme of study that satisfies the National Curriculum 2014 requirements. It is important for all children to experience a range of scientific activities in ways that are appropriate to their needs and abilities. Special provision is made in exceptional cases.

Science in EYFS

Play underpins the delivery of all the EYFS. In playing, children behave in different ways: sometimes within their play, they may describe and discuss what they are doing and sometimes they may be more reflective and quieter as they play. Within a secure and challenging environment with effective support, children can explore, develop and experiment as they play to help them make sense of the world. The EYFS strand 'Understanding the World' leads directly to scientific elements of the curriculum and leads to more formalised Science learning in KS1 and then KS2.

Implementation

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.

Scientific knowledge and conceptual understanding

The programmes of study describe 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. Activities should be planned to meet the needs of all pupils. Differentiation is achieved through careful planning and organisation. Learners should be supported and challenged to progress within Science. Differentiation enables all students to engage in the curriculum by providing learning tasks and activities that are tailored to their needs and abilities.

Westgarth Primary School looks to integrate practical Science in almost every lesson, making learning engaging and fun. Children should be encouraged to predict, hypothesise, collect evidence, analyse and question the results they gather and evaluate what they have learnt. Pupils are encouraged to work in groups or individually where appropriate. In group work, children are given a role to fulfil, in order to give their own work a purpose and a focus. They use a variety of means for communicating and recording their work.

Recording in Science

The way in which Science is recorded will vary across the school depending on age and ability. Teachers should ensure that a range of appropriate methods are used. These may include:

- Written accounts including instructions, reports and explanations
- Diagrams, drawings and pictures
- Annotated diagrams

- Spreadsheets (data collection)
- Charts, graphs and tables
- Model making
- Title pages as introduction of each topic

Impact/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.

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 will be encouraged to be curious and ask questions about what they notice. They will 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 will 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 will 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 will 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 will 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 will 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 will 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 will 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 will 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 will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They will also begin to recognise that scientific ideas change and develop over time. They will 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 will 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 will 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

Assessment

Assessment is embedded across all lessons, teachers assess pupils' understanding of individual learning objectives and identify where there are gaps. This tells the teacher what to focus on in future lessons and prompts them to adapt their teaching approach to improve pupils' understanding. Strategies used will vary according to the unit and learning objective taught – these include:

- Use of rich question and answer sessions to evaluate pupil understanding and identify gaps, misconceptions and prior knowledge

- Observational assessment.
- 1:1 or group discussions/activities with pupils.
- Use of whiteboards, practical activities and specific resources to get instant feedback of understanding.
- Short re-cap quizzes or recall of key "sticky knowledge" for example, Kahoot! and Give Me 5!
- Scanning work for pupil attainment and progress. Self (or peer) assessment at the end of lesson based on individual learning objectives and the 'Success Criteria'.

Tracking

Progress is tracked each lesson, children either meet the individual learning objective or are judged to be working towards the objective. Achievement is recorded on the class/year group assessment sheet. This is a working document to inform the class teachers planning, any gaps in knowledge and next steps.

At the end of each unit a tracker is used to record whether each child has met the objectives. The tracker follows progress through the key stages so that at the end of the key stages there is evidence of the children meeting the descriptors.

Marking

In Science work should be acknowledged with a green tick. A written comment is used to address misconceptions, motivate and denote recognition of effort, application of skill/knowledge and achievement.

Monitoring and Evaluation

The Subject Leader is responsible for:

- taking a lead in policy development.
- monitoring the provision and development of the subject throughout the school.
- supporting staff.
- Managing the Science budget and resources.

Safety

Following COSHH guidance 'Be Safe'.

Lucy King