

## Science Policy

### Written June 2020

*'It is important to view knowledge as sort of a semantic tree – make sure you understand the fundamental principles, i.e. the trunk and big branches, before you get into the leaves/details or there is nothing for them to hang on to.'* Elon Musk

At Robsack Wood Primary Academy, we believe Science should inspire our pupils by giving them the opportunities to explore their natural curiosity; promoting the experience of enquiry and investigating **scientific phenomena**, in a range of environments, to ensure a continually evolving knowledge and understanding of the world around them.

### Intent

At Robsack Wood Primary Academy our intention is to provide high quality teaching and learning of science. We aim to ensure that:

- Science is fun, practical and child led
- Pupils are encouraged to ask questions and be curious, changing what they think about the world
- Pupils use a variety of resources to investigate topics and take risks
- Science is recorded in a range of ways
- Pupils are making connections to existing knowledge and are able to explain what they are learning, why it is important and how it connects to what they already know
- All pupils use scientific vocabulary to predict, reason and conclude
- Everyone is a scientist and can explain what this means

### Working scientifically

During Years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

During Years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them

- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

During Years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

## Implementation

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school. Our curriculum progression map sets out the key knowledge and understanding for each year group.

We believe in the important of science as a subject and therefore, we do make artificial links between science and other subjects. Where connections can be made, and where they enhance pupil understanding and developing schema, we support pupils to understand that connectivity of learning.

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of 'The National Curriculum' and, 'Understanding of the World' in the Early Years Foundation Stage. Science teaching at Robsack Wood Primary Academy involves adapting and extending the curriculum to match all pupils' needs. Teachers use topic starter sheets which set out learning objectives

and evidence of success for each science unit. This enables the teacher and the pupil to carefully monitor each pupil's developing understanding and knowledge.

The topic starter sheets are stuck into pupil's science books at the beginning of each new unit and teachers tick off the success criteria once they are confident children have achieved it. Topic starter sheets are based on the Association for Science Education planning matrices.

Science is taught consistently, once a week for up to two hours, but is additionally taught in many different contexts across all areas of the curriculum.

## Impact

The impact and measure of our success is that pupils not only acquire the appropriate age related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives.

All pupils will have:

- A wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills.
- A richer vocabulary which will enable to articulate their understanding of taught concepts.
- High aspirations, which will see them through to further study, work and a successful adult life.

By the End of Key Stage 2, pupils will have following skills, attitudes and values.

They will:

- Enjoy science and for them to feel like they could have a future in science careers.
- Pose own questions and carry out investigations to answer them.
- Be able to predict, reason and conclude.
- Know there is always more to find out. Science is never done.
- Be able to use and select equipment correctly.
- Be a responsible citizen of the world, caring for our environment.

We use the Association of Science Education matrices and moderation materials to assess pupil progress and developing understanding in science. Teachers will assess at the start of a unit to determine pupils' prior knowledge and will continue to assess for learning in each lesson throughout the topic. Teachers may use short quizzes throughout. For all pupils, year one to six, term six is used as a revision term to return to prior learning and ensure that knowledge is embedded.

Target Tracker is used to track pupil progress throughout their time at Robsack Wood.

## Meeting the Needs of all Learners

Science is taught to all pupils, whatever their ability and individual needs. Science forms part of the curriculum to provide a broad and balanced education to all pupils. Through our science teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, as well as those who are higher attaining, and those learning English as an additional language. We take all reasonable steps to

achieve this. This includes scaffolding pupils learning and providing a context to learning to enable pupils to understand why they need a particular piece of knowledge or skill.

### Policy Status and Review

<b>Written by:</b>	Science Subject Leader
<b>Status:</b>	Final
<b>Approval date:</b>	June 2020
<b>Review date:</b>	June 2023