


# Whitby Heath Primary School



## Science Policy

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## **Intent**

### **1. Aims**

At Whitby Heath Primary School we aim to provide a broad and balanced science curriculum that, as a core subject, fully meets the requirements set out in the National Curriculum, promoting pupils' enjoyment and enthusiasm for enquiry-based learning.

Our broad and balanced curriculum will begin with the Early Years Framework, which will be delivered in the Early Years Foundation Stage (EYFS), through the 'understanding the world' strand. Our aim is to allow our youngest learners to be guided to make sense of the world around them and the community they live in and to have a strong foundation of working scientifically skills such as observing and asking questions, which they can take with them when beginning the National Curriculum in Key Stage One (KS1).

Our intention is to ensure that all pupils, including those from a disadvantaged background and those with special educational needs, are confident in the broad range of areas within science, including both knowledge and skills. We believe that science teaching at our school is good when it secures knowledge and skills by encouraging children to go deeper in their learning.

Through careful planning and monitoring, we aim to allow children to build upon a progression of knowledge and skills, allowing them to revisit what has previously been learnt and develop a deeper understanding of the science curriculum, carefully strengthened with new knowledge and skills, with opportunities to apply these. Where possible, our goal is to also link science across the curriculum, particularly to other strands of STEM (Science, Technology, Engineering and Maths).

The development of language is also key at Whitby Heath, and our Science curriculum aims to support this by giving opportunities for purposeful discussion and promoting the use of accurate, technical vocabulary. Our vocabulary, for each year group and science unit, has been carefully selected to ensure there are opportunities for progression and also revisiting, which will develop children's confidence.

In addition, our curriculum also strives to support the development of British Values by promoting tolerance and understanding of others by working collaboratively, as well as enabling individual liberties in making their own scientific enquiries and understanding the rule of law to ensure when carrying out practical activities, children are able to conduct fair tests and keep safe.

At Whitby Heath, our goal is to promote scientific enquiry within children; to ask questions and follow lines of enquiry to reach answers, proven by their own scientific research or investigations. Pupils achieve this by having many opportunities for practical learning in the classroom, as well as exploring the wider world which includes regular, meaningful use of the school grounds and the local area. We aim to ensure that science teaching and learning links to children's own lives, where possible, to further enhance their learning.

This will all ensure children have experiences in abundance to allow their knowledge, vocabulary and scientific skills to flourish.

## 2. Statutory Requirements

At Whitby Heath, we have ensured that all planning is in line with the National Curriculum objectives and that all are taught and explored. There are also opportunities, in both KS1 and KS2, for STEM units to take place, allowing national curriculum units, particularly stand alone ones, to be revisited and strengthened. The national curriculum objectives are all included on the intent documents on the first page of science plans. Our Early Years team have created documents containing the Early Learning Goals and how they link to each part of the 'Understanding the World' unit; people, culture and communities, the natural world and past and present, and how these fit within science.

### Implementation

## 3. Curriculum content and delivery

Collaboratively with the science subject lead, staff have carefully planned weekly science lessons. Each year, the medium-term plans are revisited and tweaked to ensure they continue to stay relevant in ensuring progress for learners. All planning contains opportunities for practical learning, both in the classroom and also opportunities for children to take their learning outside. We believe this creates links to the wider world and shows children the importance of science learning.

As most learning in science lessons are practical or discussion based, majority of lessons are evidenced through the use of floorbooks. Discussions are encouraged through children's enquiry during practical activities/investigations as well as the use of concept cartoons. There are also opportunities for children to complete their own independent learning in science books through diagrams, written investigations or cross curricular learning such as drawing graphs or pieces of writing linked to both science and English.

Our science curriculum is planned and sequenced so that new knowledge and skills build on what has been taught before. These are regularly revisited in science lessons but also during SODA (Start Of Day Activity) tasks allowing for science knowledge and skills to be part of children's long term memory.

In Key Stage 1 and 2, science is taught weekly with each unit running across a half term or term for units requiring a larger amount of knowledge and vocabulary to be learnt. Our long-term plan (see appendix 1) has been created to ensure all units from the National Curriculum are covered. Where possible, these units are linked to other areas of the curriculum such as English, geography or history. Each year the long-term plan is looked at and tweaked so that, whilst all units are still taught, the order can be changed (only within a year group) to better fit. Beyond the long-term plan, knowledge, skills and vocabulary have been carefully planned to allow for progression in each of these areas, both across a year group and also through key stages (see appendix 2).

Within the curriculum, the key skills for each year group can be evidenced in our progression of skills documents. These skills are highlighted on the medium-term plans created collaboratively between class teachers and the science subject lead, to be covered multiple times throughout the year to ensure children are secure in each of the skill areas. The Working Scientifically skills from the National Curriculum are:

- Ask Questions

- Observe and measure
- Perform tests
- Identify and classify
- Gather and record data
- Answer questions/conclude using evidence

Additional STEM opportunities are planned throughout the year for enrichment, such as after school clubs, science week, trips and visitors such as a mobile planetarium. We also aim to create links with local businesses, such as URENCO and Airbus, who deliver sessions in school, allowing children to connect our science learning to the wider world.

### Transition to KS3 (Key Stage Three)

At Whitby Heath, we work closely with our feeder secondary schools to ensure a quality of provision that gives our pupils firm foundations for year 6. Staff from the high schools regularly visit our school to deliver session to KS2 pupils, allowing them to create a bond. The science coordinator is regularly in talks with staff from the local high schools to create links with Year 5 and 6 pupils such as transition sessions and enrichment activities at the high schools.

## **4. Roles and responsibilities**

### **4.1 The governing body**

The governing body will approve the science policy and hold the headteacher to account for its implementation.

### **4.2 The headteacher**

The headteacher is responsible for ensuring that science is taught consistently across the school.

### **4.3 DT Coordinator and strategic team leader**

The science coordinator at Whitby Heath is Miss E Harland and she is responsible for:

- Planning and coordination of the science curriculum ensuring coverage in-line with that required by the National Curriculum.
- Providing training for staff to ensure consistent and age-appropriate delivery of the curriculum.
- Monitoring and supporting staff in the delivery and assessment of the curriculum.
- Working as part of the strategic STEM team to ensure that all areas within the remit of this policy are implemented and impact monitored.

#### 4.4 Staff

Staff are responsible for:

- Creating effective medium-term plans that contain opportunities for practical activities, learning outside the classroom and written investigations.
- Revisiting medium term plans and tweaking them so they suit the needs of learners.
- Delivering the science curriculum in an engaging and practical way
- Evidencing practical activities and discussions through the use of floorbooks
- Ensuring there are opportunities for written evidence within science
- Modelling positive attitudes to science
- Monitoring progress
- Responding to the needs of individual pupils

#### 4.5 Pupils

Pupils are expected to engage fully in science lessons. When taking part in practical aspects of science, pupils are expected to behave responsibly with their own and others' health and safety in mind. Pupils should bring their natural curiosity for exploration to enable them to work scientifically and take part in our enquiry based curriculum.

#### 4.6. Training

Staff are trained on the delivery of science as part of our continuing professional development calendar. Being part of the local Ogden Trust partnership gives us, as a school, access to a variety of CPD opportunities such as training sessions on specific units.

#### 4.7. SEND and Inclusion

At Whitby Heath we have high expectations of all our pupils. However, we recognise that for some pupils, additional support is needed to ensure they can access tasks and retain key learning. Tasks are adapted or scaffolded to ensure that they provide suitable challenges that focus on the learning in science and remove any barriers for learning. Teachers use their pupil passports and appropriate assessments to help inform their planning. This way, an individual, child-centred approach ensures progress is made and learning is personalised.

We want all learning to support independence wherever possible. Teachers will plan lessons so that pupils with SEND are able to successfully access the key content of the science curriculum and ensure that no ceiling is placed on their learning and what they can achieve. Promoting independence, we allow the children to feel a sense of equality and belonging in their classroom environment.

Where appropriate, the following strategies will be used for pupils with SEND:

##### Task Adaptation

- Opportunities for overlearning key knowledge.
- Technology used for recording information.
- Web based learning for practice and learning of key knowledge.
- Use of concrete resources/practical activities.
- Voice recordings or pictorial representations of step-by-step instructions.

- Voice recordings or pictorial representations of responses.
- Screen shots and photographs.
- Voice recordings.
- Support for mathematical skills.

### Scaffolding

- Modeling specifically for a small group of children.
- Vocab mats highlighting specific vocabulary for a task.
- Broken down instructions for a task.
- STEM sentences.
- Task organiser.
- Use of concrete resources.
- Further questioning.
- Additional focused explanations.
- Precision teaching of key knowledge.
- Additional oracy opportunities.
- Peer support.

Where a child struggles with key aspects of learning, it is crucial that we highlight what is key knowledge for a child to move on with their learning. Progression maps highlight which knowledge is the basis for other knowledge later on within the science curriculum. Staff can therefore provide time for overlearning this key knowledge where it is deemed appropriate for these children. Support and CPD is given to staff to ensure they have a good understanding of what learning is key to moving on. These children are discussed regularly with the SENCo.

### Higher Attainers

Opportunities for higher attainers to take learning deeper are planned throughout the curriculum. Open ended tasks and high quality first teaching ensure that learning is taken deeper. In science, there are many opportunities for children to ask their own questions and find the answer to these. Enrichment opportunities are planned throughout the year. Opportunities for children to explore careers in STEM are planned into the curriculum and accessed where appropriate. Visiting speakers are encouraged to come in and support classes in delivering key areas of science and STEM.

### **Impact**

At Whitby Heath, we ensure that all students are exposed to rich learning experiences that:

- Enable all students to make good progress in their design knowledge, skills and vocabulary from whatever the students starting point may have been. We define good progress as knowing more and remembering more. It is the widening of knowledge, skills, understanding and behaviours.
- Ensure children have self-efficacy and see themselves as scientists. They take an interest in the aspects of science, which enable our children to develop a curiosity about the world around them.
- Inspire our children to become the next generation of scientists, engineers and environmentalists who love, look after and respect themselves, their communities and the world around them.

- Ensure pupils experience a language rich science experience which enables them to apply their knowledge as articulate citizens of the future, discussing research, knowledge and developments.
- Enable pupils to be resilient when exploring concepts and learning new scientific information.
- Ensure pupils leaving us are well prepared for the next stage in their lives, particularly for the further study of Science at KS3.
- Enable pupils to apply their knowledge in their own lives.

## **8. Monitoring arrangements**

The delivery of science is monitored by the science coordinator, Miss E Harland through:

- Learning walks
- Pupil voice
- Book scrutiny
- Planning scrutiny

Pupils' development in science is monitored by class teachers as part of our internal assessment systems.

This policy will be reviewed by Miss E Harland, the science coordinator, every 3 years. At every review, the policy will be approved by the governing body and the headteacher.



Appendix 1 – Science Long Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Ask questions to clarify their understanding, offering their own ideas, using recently introduced vocabulary. Offer explanations for why things might happen. Talk about the lives of the people around them and their roles in society. Know some similarities and differences between things in the past and now, drawing on their experiences. Describe their immediate environment using knowledge from observation. Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. Children investigate and experience things, children have and develop their own ideas, make links between ideas.					
Year 1	Animals inc. Humans - Humans  Seasonal changes- Autumn	Animals inc. Humans - Humans	Materials  Seasonal changes- winter	Animals inc. Humans- animals  Seasonal changes- Spring	Animals inc. Humans- animaks	Plants  Seasonal changes- summer
Year 2	Plants	Living things and habitats- food chains	Materials	STEM	Animals inc. humans	Living things and habitats- habitats
Year 3	Animals inc. humans- skeletons and muscles	Animals inc. humans- Nutrition	Forces	Light	Plants	Rocks and Soils
Year 4	Animals inc. humans	Sound	Electricity	States of Matter	Living things and habitats	STEM
Year 5	Forces	Properties and Changes of Materials	Earth and Space	Earth and Space	Animals inc. Humans  Living things and habitats	Living Things and Habitats
Year 6	Living things and habitats	Animals inc. Humans	Light	Evolution and Inheritance	Electricity	Electricity cont.

## Appendix 2- Working Scientifically Skills and Vocabulary

Working Scientifically Progression of Skills and Vocabulary Progression of Skills found at the bottom of the page on our school website:

<https://www.whitbyheath.cheshire.sch.uk/page/science/128835>