SCIENCE POLICY

Common Road Infant and Nursery School

Flying High Together

SCIENCE POLICY 2019-20

Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The overarching aim for science in the national curriculum is to ensure that all pupils:

- 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** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Working Scientifically

'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, but instead threaded through all units across each year group. 'Working scientifically' should be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and

researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. 'Working scientifically' will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

Spoken Language

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and to others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Essential Characteristics of Science Students

- Independent thinkers
- Have practical skills
- Ability to ask questions
- Be able to solve problems
- Be imaginative and innovative
- Make observations
- Identify and classify
- Gather and record data
- Perform simple tests
- Explain findings

Teaching & Learning

Topics covered across school were updated in October 2019, moving towards a 'thematic' approach to foundation subjects and science. Each themed unit covers a term in KS1, and half a term in EYFS. The EYFS cycle runs over two years due to staggered start dates in nursery, whereas the KS1 cycle runs over one academic year.

Science is delivered through 'Knowledge and Understanding of the World: The World' in EYFS. Teaching is delivered during carpet time, with provision set-up allowing children to apply and develop their learning independently after the session.

In Year 1, science is delivered through a carousel approach. The cohort is divided into three groups, who each access a dedicated science lesson once a week. This learning is followed up in continuous provision, which links to the previous lesson's objectives.

In Year 2, science is delivered in discrete lessons taught in one or two week blocks across each half term.

KS1 also have a weather station, which operates on a weekly rota system.

Science lessons are planned to deliver 'awe and wonder'. At the start of the lesson, previously knowledge is revisited to ensure the learning becomes 'sticky' and is committed to long-term memory. Age-appropriate vocabulary is introduced to each year group from an agreed school vocabulary list.

Areas of continuous provision are enhanced to further support planned outcomes.

Refer to Teaching & Learning Policy for specific details related to AFL, Behaviour for Learning, Non-Negotiables; which include detailed information about areas of continuous provision – photograph & planning.

Monitoring & Assessment

EYFS – EYFS staff monitor progress and attainment through observations and learning journeys. OTRACK is used on a half-termly basis to record where children are currently working within the development matters ages and stages document. Science is assessed under 'Knowledge and Understanding of the World: The World'.

KS1 – KS1 staff monitor progress and attainment across units of work. At the end of each unit, staff make a judgement as to whether each child is working at or below the expected level. There is no descriptor for exceeding the expected level in science for KS1. Staff use the science exemplification to help support their judgements. Staff also assess the strand 'working scientifically' each half term. These assessments are then passed to the science lead for analysis.

Progress Reporting to Parents

- Two termly consultation meetings
- End of year report, comparing their progress to the national expectations for science; this will be couched in terms of **Working Towards and Expected** learning across YEAR GROUP STATUTORY REQUIREMENTS, where appropriate individual targets will be given to parents/carers.

Whole School Development

The subject leader monitors the subject closely through monitoring planning, progress and attainment, work scrutiny, learning walks and observations.

The Senior Leadership Team, staff and governors will be consulted over any proposals before a plan is implemented.

Equal Opportunities

All children should be entitled to opportunities to develop their understanding of science, regardless of gender, age and faith.

Policy written by Karen Atkinson September 2014
Reviewed and updated spring 2020 by Rachael Pickering