

Science Curriculum



Whole School Overview - Intent:

At Kinraig Primary School, it is our intent to give children a Science curriculum, which enables them to explore and discover the world around them confidently, whilst allowing them to acquire specific skills and knowledge. It involves exciting, practical hands-on experiences that develop the natural curiosity of the child. This encourages respect for living organisms and the physical environment and immerses children in the science topic to give them a greater understanding. To do this effectively, the children will learn to ask relevant questions, set up different types of scientific enquiry, select appropriate equipment, take measurements with accuracy, record their results and report on their findings.

The Early Years Foundation Stage and National Curriculum will provide the structure and skill development for the science curriculum being taught throughout the school. Where possible, it is linked to the theme topics to provide an immersive scheme of work, which reflects a balanced programme of study and enables children to:

EYFS:

- Explore the natural world around them, making observations and drawing pictures of animals and plants (UTW)
- 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. (UTW)
- Understand some important processes and changes in the natural world around them including the seasons and changing states of matter. (UTW)

National Curriculum:

- 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.
- Be equipped with the scientific skills required to understand the uses and implications of science, today and for the future.

We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this; ensuring we provide a science curriculum that gives children the confidence and motivation to continue to further develop their skills into the next stage of their education and life experiences.

Year Group Overviews (Implementation):

Science forms part of our Creative Curriculum here at Kinraig Primary School, and provides a clear progression of skills across the whole school. The units have been arranged across the year groups in line with the National Curriculum to link with the creative theme or topic being taught and can either be taught on a weekly basis or as a block, enabling teachers to spend more time carrying out quality investigations and enable children to achieve a greater depth of knowledge. Existing knowledge is assessed at the start of every unit, to ensure clear starting points are identified and planned effectively for. Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics. Teachers create a positive attitude towards science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science.

Within each age range we will focus on the skills outlined below, to ensure a consistent and embedded approach, that shows a clear progression of skills.

In the **EYFS**, the implementation falls under the strand of **Understanding the World (UTW.)** Both the environment and skilled practitioners foster curiosity and encourage explorative play. Children are motivated to ask questions about why things happen and how things work. Our children are encouraged to use their natural environment around them to explore. Children enjoy spending time outdoors exploring habitats, observing the changing seasons, plants, and animals.

Toddlers/Rising 3s: Children will explore materials and their properties, repeat different actions that have an effect and explore and respond to the different natural phenomena both with indoors and outdoors.

Pre-School: Children will use all their senses in hands-on exploration of materials both man-made and natural; exploring their properties, grouping and sorting and discussing their findings. They will also investigate the changes in materials and what they notice. Pre-School will explore how things work and the different forces they can feel, life cycles of plants and animals and how to respect and care for their natural environment and all living things.

Reception: Children will explore the natural world around them; describing what they can see, hear, feel and smell. Children will also explore the effects and changes in the environment, looking at seasons, weather and climate.

Year 1: Children will be able to ask simple questions, observe closely, identify, classify, and perform simple tests when working scientifically. They will investigate plants and seasonal changes, everyday materials, different types of animals and parts of the body.

Year 2: Children will use their observations and ideas to suggest answers to questions and gather and record data to help answer questions when working scientifically. They will investigate plants, changing materials, habitats and the basic needs of humans and animals.

Year 3: Children will ask relevant questions, set up and carry out different scientific enquiries, record findings and report on findings, drawing simple conclusions and suggesting improvements. They will investigate plants, rocks, light, forces and magnets and the human and animal skeleton.

Year 4: Children will make systematic and careful observations, presenting data in a variety of ways. They will record findings using scientific language, identifying differences, similarities or changes related to simple scientific ideas and processes; using straightforward scientific evidence to answer questions or support their findings. They will investigate the digestive system, teeth, sound, electricity, states of matter and habitats and the impact changes have to living things and their environment.

Year 5: Children will plan different types of scientific enquiries to answer questions, take measurements, use a range of scientific equipment with increasing accuracy and precision, record data and results of increasing complexity, using scientific diagrams and labels, bar and line graphs and report and present findings from enquiries, including conclusions and causal relationships. They will investigate properties of everyday materials, earth and space, forces, life cycles and puberty.

Year 6: Children will plan different types of scientific enquiry, including recognising and controlling variables where necessary, take measurements including taking repeat readings when appropriate, recording data as classification keys, tables and scatter graphs, use test results to make predictions to set up further comparative and fair tests, report and present findings including explanations of and degree of trust in results; identifying scientific evidence that has been used to support or refute ideas or arguments. They will investigate electricity, light, evolution and inheritance, human circulatory system and to look at similarities and differences of animals, plants and microorganisms.

Impact

Through our creative approach to our curriculum and linking the Science units to the themes, the Science curriculum provides children with the foundations and knowledge for understanding the world around them

and making clear links and connections. Offering practical, hands-on opportunities; approaching lessons and units in a fun, engaging and high-quality way, children are immersed in the curriculum and allowed to explore, challenge and question why and how things happen or work. Children enjoy a varied range of experiences both within and out of the classroom environment and this is enhanced through the use of various workshops, trips and interactions with experts and specialists. Children are confident and have an understanding of the crucial role Science plays in our lives and how this has changed over time and continues to do so. We aim to develop our future scientists and their inquisitive nature to explore, challenge and investigate, to solve-problems and find solutions building upon their knowledge and allowing them to flourish.