# Science Policy

Science at Lyncrest aims to teach our children the skills, knowledge and understanding they need to question and understand concepts and phenomena that occur in the world around them and equips them with the motivation to seek explanations for these. Children learn the skills required for scientific enquiry and they will begin to appreciate the way science will affect their future on a personal, national and global level. Through the teaching and learning of science, we seek to develop these key characteristics of scientists within the children at our school:

• The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.

• Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.

• Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.

• High levels of originality, imagination or innovation in the application of skills.

• The ability to undertake practical work in a variety of contexts, including fieldwork.

• A passion for science and its application in past, present and future technologies.

## Teaching and learning for Science

Teachers follow the teaching and learning policy when teaching science. The school uses a variety of teaching and learning styles in science lessons. Our principal aim is to develop the children's knowledge, skills and understanding. We do this through a mixture of whole-class teaching and individual / group activities. Teachers encourage the children to ask as well as answer scientific questions. The children have the opportunity to use a variety of secondary sources of information, where it will enhance learning as well as gaining first hand experiences, for example, the use of books, photographs, graphs, diagrams, models and ICT.

We recognise the fact that we have children of differing scientific ability in all our classes and so we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- Setting common tasks that are open-ended and can have a variety of responses.
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks).
- Providing a range of challenges with different resources.
- Using additional adults to support the work of individual children or small groups.
- Incorporating high order questions that apply to scientific thinking to extend the most able children in science.

## Science curriculum planning

The National Curriculum is used as the basis of curriculum planning, with specific guidance provided by Chris Quigley Essentials to plan science lessons that work towards threshold concepts and their relative milestones. These concepts and milestones form the intention for the children's learning and planning is

based around meeting these intentions:

- Working scientifically (in Biology, Chemistry and Physics).
- To understand plants (in Biology).
- To understand animals and humans (in Biology).
- To investigate living things (in Biology).
- To understand evolution and inheritance (in Biology).
- To investigate materials (in Chemistry).
- To understand Movement, Forces and Magnets (in Physics).
- To understand light and seeing (in Physics).
- To investigate sound and hearing (in Physics).
- To understand electrical circuits (in Physics).
- To understand the Earth's movement in space (in Physics).

Teachers have access to lesson resources and materials for Snap Science and Twinkl to aid the planning of lessons to meet these intentions. Science across the school builds upon prior learning and as such intentions are repeated across year groups; however, progression is found within the milestones we wish for the children to achieve across each year group. This progression can be found in the long term Science plan within the Chris Quigley Essentials Scheme.

**Science in EYFS**

We teach science in the Foundation stage as an integral part of the topic work covered during the year. It comes under Understanding the World in the EYFS. Children must be supported in developing the knowledge, skills and understanding that help them to make sense of the world The activities they undertake, link with their topic or theme (for example space) and they will be working towards their first milestones from the learning intentions listed above by learning about similarities and differences in relation to places, objects, materials and living things. They will also talk about the features of their own immediate environment and how environments might vary from one to another. Additionally, they will make observations of animals and plants and explain why some things occur, and talk about changes. Their learning must be supported through offering opportunities for them to use a range of tools safely; encounter creatures, people, plants and objects in their natural environments and in real-life situations; undertake practical 'experiments'; and work with a range of materials.

**Assessment Practice for Science**

We use general assessment practices in this subjects as outlined at the start of Teaching and Learning Policy under the heading 'Meeting children's learning needs through assessment practice'. Children's progress is recorded in their individual Learning Logs
Additionally, for this subject, summative assessment is carried out on a termly basis (or at the end of a science unit) to allow teachers to recognise skills taught and retained independently by children in their class. This can be acquired from a range of sources such as Snap Science, Twinkl and Test Base to give an accurate picture of understanding which can be used to plan next steps accordingly.