

Science

Pebble Brook's Science curriculum is specifically tailored to develop new ways of thinking and problem-solving. It's focussed on allowing pupils to use simple sensory experiments to enhance memory and scientific thinking skills. The curriculum considers the educational needs and the limited Science background of pupils. Literacy tasks are done weekly to develop listening, speaking, reading, and writing skills as well as to introduce Science vocabulary using word aware, word searches and spelling tasks. Many of our pupils have ASD and have low self-confidence. To build self-esteem and self-confidence, we often engage pupils periodically in research that allows them to discover that many of the well-known Scientists and inventors, may have or have had SEN needs and that there is no limit to their capability, specifically taking up careers in science.

Our lessons have routine and structure which is tailored to reduce anxiety. We deliberately emphasise that making an error or being unsure is part of the Scientific method as it allows for development of deeper understanding through experiments. As such pupils are always asked to predict what they think will happen before engaging in sensory experiments.

Pupils are encouraged to link and transfer learning across the curriculum such as learning of Hormones and body development to PSHE; Nutrients and nutrition to Food technology; and numeracy skills to Mathematics.

There are two stages of the curriculum:

- KS3 which is intended to build the foundational Science knowledge and concepts and
- KS4 which is intended to deepen foundational knowledge and concepts allowing pupils in KS4 to apply their skills and knowledge to natural phenomena.

Knowledge and Skills: Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, science terminology accurately and precisely.

The principal focus of science teaching in key stage 4 is to develop a deeper understanding of a range of scientific ideas in the subject disciplines of Biology, Chemistry, and Physics that they were exposed to in KS3. Pupils should understand that science is about working objectively, modifying explanations to take account of new evidence and ideas as well as subjecting results to peer review.

All pupils across the whole curriculum will work towards developing spoken language. Pupils will be supported and encouraged to develop their language – cognitively, socially and linguistically being supported by the SALT team using word aware strategies. This will enable pupils to have a better grasp of Scientific vocabulary and improved articulation of Science concepts precisely and clearly.

Working scientifically through the content across all three disciplines should develop pupil's ability to:

- Understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review.
- Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge, and experience.
- Make predictions using scientific knowledge and understanding

<ul style="list-style-type: none"> ▪ Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate. ▪ Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety. ▪ Make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements ▪ Apply mathematical concepts and calculate results. ▪ Present observations and data using appropriate methods, including tables and graphs ▪ Interpret observations and data, including identifying patterns and using observations, measurements, and data to draw conclusions. ▪ Present reasoned explanations, including explaining data in relation to predictions and hypotheses. ▪ Evaluate data, showing awareness of potential sources of error. ▪ Identify further questions arising from their results. 	
<p>Assessment strategies including external examinations</p>	<p>Assessment is completed with evidence on EARWIG</p> <p>Specific areas of development such as:</p> <p><i>Communication Skills</i></p> <p><i>Leadership</i></p> <p><i>Creativity</i></p> <p><i>Organisation</i></p> <p><i>Collaboration</i></p>
<p>Any additional notes</p>	