# Science Curriculum Statement:
# Balshaw Lane Community Primary School

## INTENT

Science at Balshaw Lane aims to give all children a way of making sense of the world, and the universe beyond it, whilst acquiring the specific **skills and knowledge** to help them **think scientifically** and develop an understanding of the uses and implications of Science, today and for the future. At our school, the Science curriculum develops the natural **curiosity** of the children, encourages respect for living things and the physical environment and provides opportunities for **critical evaluation** of evidence. As one of the **core** subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires.

We aim for all children to:

- 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 knowledge** required to understand the uses and implications of Science, today and for the future;
- develop the essential **scientific enquiry skills** to deepen their scientific knowledge;
- Use a range of methods to **communicate** their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts;
- Develop a **respect** for the materials and equipment they handle with regard to their own, and other children's **safety**;
- Develop their understanding and use of scientific **vocabulary** to enable them to **communicate** their ideas accurately;
- Develop an **enthusiasm and enjoyment** of scientific learning and discovery.

At our school, children will develop their skills and knowledge through access to a well-planned curriculum. Our school uses a 'Connected Curriculum' approach and this means not only that links between science and other subjects are created, but also that links are made explicit **within** the scientific disciplines. For example, during a topic on light, children will be taught to make links to previous learning about plants and their requirements for growth. The curriculum is designed to ensure that children are able to acquire key scientific knowledge, through practical experiences; using equipment; reading and research; building arguments; and explaining concepts confidently. The school's approach to science takes account of the **school's own context**, ensuring access to people with specialist knowledge, through the STEM Ambassador scheme and links with Myerscough College, as well as visits beyond the classroom, for example Martin Mere. We are lucky to have school governors, parents and grandparents who have expert scientific knowledge and experience that they can

share with the children. The school's grounds provide a rich resource for learning about the natural environment with a range of plants and trees, a large field and a weather station.

By the time children leave Balshaw Lane, we aim for them to have the skills to be lifelong learners. As such, the **Balshaw Lane Learning Powers** are used to create an awareness of the personal skills that help us to learn. **Resilience** was identified as a particular area for development at our school and the Science curriculum provides a vehicle for embedding this attribute. For example, pupils are taught to repeat readings during investigations to make results more reliable: a skill that requires resilience and perseverance. Most of the opportunities to learn in Science require working together; children are taught to recognise the importance of **co-operation** when working as a team. Developing the right attitudes for co-operation in a team has become particularly relevant following the pandemic, when children spent time isolated from their peers, learning remotely. Science at our school offers the opportunities to work together towards a shared goal.

**Fundamental British Values** are supported through the Science curriculum:

**Democracy**: children are encouraged to work collaboratively and listen to other's opinions and ideas. **Rule of Law**: children are taught the importance of safety rules in science; they understand that some laws are put in place to support a healthy lifestyle. **Individual liberty**: children are encouraged to express views or ideas freely, to express hypotheses and discuss ideas, and to make predictions that might be different to those of other children (as seen when learning about famous scientists). They are encouraged to express personal views when discussing a sensitive or controversial science issue. **Tolerance and respect**: children are encouraged to work together to plan enquiries, decide on roles during shared investigations; listen to feedback and share conclusions; learn from others, including experts; listen to and evaluate the ideas of others.

## IMPLEMENTATION

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following:

- Science is based on the National Curriculum 2014 with 'Working Scientifically' skills following a progression approach using the Lancashire skills grid. The Association for Science Education (ASE) resources (TAPS and PLAN) are used to support both planning and assessment. These provide teachers with age appropriate (National Curriculum) lesson objectives and vocabulary, as well as suggested activities. The mixed age classes 4/5 and 5/6 have a tailored curriculum to ensure children cover the essential elements of the science curriculum with no unnecessary repetition.
- Teachers use these documents to plan challenging science lessons, using a 'key question' as a knowledge- based learning objective, as well as 'key skills' objectives that will be taught or practised within the lesson. Children are made aware of these objectives at the start of the lesson and refer back to them throughout the lesson as part of their self-assessment.

- At the start of each topic, children are given a cover sheet with specific vocabulary and knowledge they will need. Children refer to these during lessons. The teaching of science-specific vocabulary is a vital part of science teaching at Balshaw Lane and teachers spend time ensuring that children understand and are able to use, verbally and in written form, the specific words associated with each topic.
- Time is given at the start of each topic to allow children to share what they already know and what they would like to find out. Teachers take account of this and may adjust their planning based on the responses.
- Children have the opportunity to develop their science capital through extra-curricular activities such as, visitors and trips and special science learning days/weeks. The school takes part in national science events such as Earth Day, Mission X and Space Week. We make full use of our school grounds for outdoor learning where the children have access to a variety of habitats and an electronic weather station.
- Although the majority of the science teaching (y1-6) is taught as a discrete subject, there is an expectation that all class teachers will promote and incorporate science across the wider curriculum. For example, our guided reading texts may include science based non-fiction books or biographies about famous scientists; in computing, teaching spreadsheets may take a science investigation as a context.

## IMPACT

We want children to enjoy and value science and appreciate the range of skills it will provide them with. An essential part of the children becoming scientists is promoting curiosity and encouraging the children to ask questions. By the end of KS2, our expectation is that children will be able to develop their own questions, plan different types of enquiries to answer those questions and communicate their findings in a variety of ways. Children will understand that part of science is failing and that problem solving helps us to overcome these failures. Children will have a clear understanding of how scientists both past and present have contributed to society's understanding of the world around them. They will understand the role that science and other STEM subjects play in solving some of the key problems facing the world, such as climate change.

Pupils are provided with a range of opportunities to showcase and communicate their ideas, research and findings. Teachers use a variety of assessment tools, including: pre and post learning unit tasks (TAPS), mini quizzes, pupil discussions about their learning and scrutiny of books (and digital platforms such as Seesaw and Google Drive) by the subject leader and SLT to check for progress. Progress of our science curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes. The use of TAPS and PLAN assessment materials and attendance at area subject leader meetings, supports teachers to ensure a robust and effective internal moderation process of the children's work, can take place.