

## **Science at Old Park**

Science is led by our Curriculum Lead and our Science support teachers.

### **Why do we teach Science?**

At Old Park, we believe that at the end of their primary education, children should have a good understanding of the world through the disciplines of biology, chemistry and physics. It is essential that children not only have the key foundational knowledge that is needed, but also a solid understanding of the methods, processes and uses of science.

In June 2018, Old Park implemented its Science Principles. These are five key principles that lead our approach to the way science is taught in our school with the intention of increasing the science capital of our children and the wider school community. All teachers ensure that:

- We have fun and engaging lessons.
- We are hands on with our investigations.
- We ask and answer our own questions.
- We have exciting science equipment.
- We work together to learn new facts.

The science curriculum at Old Park is progressive and allows children to consolidate their learning, ensuring they make great progress. Our curriculum is based on milestones and our children learn about all aspects of the Science National Curriculum at an age appropriate level, regardless of their year group. Our milestones can be seen below.

<b>Milestone 1</b>		<b>Milestone 2</b>		<b>Milestone 3</b>	
<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>

In years 1, 3 and 5, children work towards the developing element within the milestones. They complete activities such as naming, matching, labelling, illustrating, describing and so on. In years 2, 4 and 6, the children advance their knowledge and work towards deepening their understanding. They complete activities such as creating, explaining, categorising, suggesting and proving.

The units within our curriculum are evenly distributed and revisited each year, to consolidate the children's understanding. Each strand of working scientifically is visited regularly across the units and year groups to ensure that 'fair testing' does not dominate the experiments or activities completed.

During the academic year 2020-21, teachers were given additional 'catch up' time to teach Science content that may have been 'missed' during the school closure to wider pupils. Specific lessons were directed by Old Park's Science Coordinator, following a review of the units and the accompanying National Curriculum objectives that were due to be taught in the lockdown period.

Since the introduction of our milestone curriculum, teaching staff have worked together with their milestone partner during joint planning sessions, to ensure that the year groups have a good

understanding of the start and end points for their milestones and skills progression is smooth. The Science Coordinator has also worked individually with each year group to adapt the core basics of the curriculum, ensuring appropriate coverage for our children.

The Science curriculum supports children's development in reading in different ways, not limited to the resources given to children, the reading they undertake during research tasks and when reading instructions for their tasks.

### **How do we teach Science?**

Old Park Primary School has invested in Science CPD for all teaching staff in recent years, including but not limited to:

- Science leadership specific training for Subject Coordinator
- External training experts delivering face to face training sessions
- Science Coordinator delivering CPD during directed time
- Staff completing unit specific CPD modules online during directed time
- Cohesive planning opportunities the Science Co-Ordinator and each year group

Any gaps in teachers' knowledge are usually addressed via their own self-awareness, the monitoring cycle (planning/work scrutinies and lesson observations) and staff voice questionnaires.

Children's understanding is assessed via formative and summative assessments. Each science lesson begins with a flashback retrieval question based on the previous lesson's learning. At the end of each unit, the children take a quiz based on their learning and this is then repeated at weeks 6 and 12. Together with each unit being revisited on a yearly basis, teachers can ascertain what information the children have retained both in their short and longer term memory.

Teachers are easily able to develop children's understanding and fluency in the subject rather than simply recalling key facts as a result of the milestones we use, where they progress from basic knowledge to advancing and deepening their knowledge, applying what they have learned in other ways, such as creating, suggesting or improving.

Teachers adopt Old Park's Science Principles when planning and delivering their Science lessons. Where possible, lessons are hands-on. Science equipment at Old Park is well resourced and purchases are made when needed, to ensure that teachers have sufficient equipment for children to work in small groups. Teachers follow the whole school overview, ensuring that the most important knowledge and key concepts are taught with purpose.

During the school closure to wider pupils during the COVID-19 pandemic, teachers continued to plan and deliver science based learning linked to their curriculum objectives and adapted the learning, where needed, in the event of children not having access to specific equipment.

### **Does our Science curriculum influence our children?**

We have good outcomes at Old Park Primary School, evidenced in lessons and the outcomes produced. Children are engaged in their lessons, enjoy learning about Science and the wider world around them, can apply their knowledge in different ways and enhance their science capital in different ways. They retain the knowledge they have learned and proactively make links between

their learning in science and other areas. Lessons are set at an appropriate level, taking in account the children's year group and ability. Learning is scaffolded where needed and children with SEN are given support in many ways.