SCIENCE

How this subject is taught

Science is approached in a very practical, investigative manner. Children learn the skills of all areas of science before applying their scientific knowledge to a wide variety of practical investigations. Science is approached through a variety of areas set out in the New National Curriculum (2014); biology, chemistry and physics. All of these areas are planned to include working scientifically. At Lammack, we aim to provide our pupils with exciting, interactive and inclusive opportunities that encourage all children to become independent and enthusiastic learners.

A main focus of science at Lammack is speaking and listening. Teachers work hard to explicitly teach the vocabulary associated with all areas of the science curriculum. Children are encouraged to ask lots of questions and plan investigations to help them find the answers to these.

At Lammack, science is taught through a range of exciting cross-curricular topics based upon our 'Cornerstones' framework or as discreet lessons. In every year group there is a focus on working scientifically through planning, carrying out and evaluating experiments.

As a whole school focus, we have been developing the use of the outdoor learning environment to enhance the children's experiences. Within science, the teachers plan experiences that allow the children to develop their scientific knowledge in a real-life setting. Throughout the school children are provided with interesting and exciting out of school visits to further enhance their understanding.

Foundation Stage

In the Foundation Stage, Science is taught through one of the seven areas of learning, Understanding the World. Teachers provide a wealth of opportunities to try out and investigate questions and situations. A language rich environment provides a platform for questioning and discussion around the world, people and communities and technology. Practical activities are planned to encourage the children to use their language to share their observations, notice patterns and discuss changes in a variety of contexts. Continuous provision is used, both inside and outside of the classroom, to provide the children with the chance to explore and develop their knowledge and curiosity with a science focus.

Key Stage 1

Science is taught for a minimum of 1 hour per week
Teachers use 'Cornerstones' to plan cross curricular lessons based on the exciting and innovative topics taught each term. Rigorous monitoring of planning ensures thorough coverage of National Curriculum objectives and allows teachers to discretely teach objectives that do not fit securely within these topics.

Through the focus of biology and chemistry children should learn to:

- use simple scientific language to suggest answers to questions
- ask simple questions and begin to answer them
- use basic equipment to gather data
- perform simple tests and make observations
- talk about the results of their observations

Key Stage 2

Science is taught for 2 hours per week.

In lower key stage 2 Teachers use 'Cornerstones' to plan cross curricular lessons based on the exciting and innovative topics taught each term. Rigorous monitoring of planning ensures thorough coverage of National Curriculum objectives and allows teachers to discretely teach objectives that do not fit securely within these topics. A rolling programme is taught to ensure complete and comprehensive coverage of all National Curriculum 2014 programmes of study. The objectives of study have been divided into two different programmes which are taught over two consecutive years.

Through the focus of biology, chemistry and physics children should learn to:

- use appropriate scientific language to discuss, explain and present ideas
- ask and answer relevant questions
- use standard measurements to support investigations using a range of equipment
- set up, make predictions, carry out and report on a wide variety of scientific enquiries
- gather and present data to enable scientific questions to be answered
- draw simple conclusions and develop improvements to investigations

In upper key stage 2 children are taught in line with the National Curriculum 2014 programmes of study. Teachers use 'Cornerstones' to plan cross curricular lessons based on the exciting and innovative topics taught each term. Rigorous monitoring of planning ensures thorough coverage of National Curriculum objectives and allows teachers to discretely teach objectives that do not fit securely within these topics.

Through the focus of biology, chemistry and physics children should learn to:

- use appropriate scientific language to discuss, explain and present ideas to support and refute ideas
- ask and answer relevant questions controlling variables where necessary

- use accuracy and precision, when supporting investigations, with the use of a range of measurements
- set up, make predictions, carry out and report on a wide variety of scientific enquiries taking into account anomalies and inaccuracies
- gather and present data in a wide variety of ways to enable scientific questions to be answered
- draw simple conclusions and develop improvements to investigations taking into account anomalies and inaccuracies

How this subject is assessed

In science, time is spent assessing the children's existing knowledge before planning and delivering appropriately targeted science lessons. All lessons are differentiated to meet the needs of the particular children within the class. Teachers continually assess children's needs and developments and alter their planning and teaching accordingly. A range of assessment styles are encouraged, such as peer assessment, self-assessment and verbal feedback.

All lessons have clear learning objectives and success criteria to ensure the children understand what they are expected to learn and how they can continue to progress. Teachers use 'Tickled Pink' and 'Green for Growth' to enable children to understand their successes and next steps for learning in science.

Teacher assessment is used to assess progress against the appropriate year group expectations and this in turn is reported to parents in the end of year report.

Priorities for future development

- To monitor the effectiveness of the new curriculum coverage across the school.
- To ensure effective assessment in place for science.
- To further develop the investigational skills of children.
- To raise the profile of the microhabitats for use in learning outside the classroom.