LUSTON & SHOBDON
COMMUNITY PRIMARY FEDERATION

What Science Looks Like in the Federation

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Curriculum Intent

What a Science lesson looks like in our school:

- A variety of activities which take place inside and outside of the classroom to engage children about the world around them.
- Investigations/practical exploration with the children being able to plan, record, carry out and conclude their learning.
- Opportunities to work individually, in pairs or groups.
- A range of scientific resources to enable the children to carry out engaging experiments.
- Subject specific vocabulary taught explicitly throughout the unit.
- Different aspects of Science are focused upon such as Biology, Chemistry or Physics and shared with the children.
- To use a range of technology where possible to help the children learn.

This is our philosophy:

- Learning through exploration and investigation.
- Using the children's understanding as a starting point.
- Making links to the world around us.
- High quality modelling of scientific skills and techniques.
- Promoting the use of the scientific method when needed to extend learning.
- Cross-curricular links where possible.

Cultural Capital:

This can be defined as powerful knowledge that a child can draw upon to be successful in society, their career and the world of work. It helps a child to achieve goals, become successful and rise up the social ladder without necessarily having wealth or financial capital.

- The Health Education dimension of the PSHE programme, including strands on drugs, smoking and alcohol

• Design and Technology units related to food preparation and nutrition
• The knowledge of how and why children need to take care of their personal fitness and wellbeing.
• The knowledge of how and why children need to understand the elements of safety relating to science.
• The knowledge of local, national and worldwide scientific events/discoveries and their importance on society.
• The knowledge of famous scientists that have affected the world today.
• Activity-based visits related to specific scientific topics.
• Understanding what opportunities are available to children in the future to allow them to become life-long learners.
• Eliciting, valuing and linking students' prior knowledge and experiences from home, family and social contexts to school science.
• Highlighting the relevance and transferability of science for students' daily and future lives.

This is the knowledge and understanding gained at each stage:

By the end of EYFS, including Luston Nursery, pupils will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter**.**

By the end of Key Stage 1 pupils will:

- Experience and observe phenomena, looking more closely at the natural and humanly constructed world around them.
- Be encouraged to be curious and ask questions about what they notice.
- Be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information.
- Begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.
- Carry out first-hand practical experiences.
- Use appropriate secondary sources, such as books, photographs and videos to support their learning
- Work scientifically
- Read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at Key Stage 1.

By the end of Lower Key Stage 2 pupils will:

- Enable pupils to broaden their scientific view of the world around them.
- Explore, talk about, test and develop ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions.
- Ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information.
- Draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.
- Work scientifically.
- Read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.

When working scientifically Lower Key Stage 2 pupils will:

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.
- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, include thermometers and data loggers.
- Gather, record, classify and present data in a variety of ways to help in answering questions.
- Record findings use simple scientific language, draw, label diagrams, keys, bar charts, and tables.
- Report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions.

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Use straightforward scientific evidence to answer questions or to support their findings.

By the end of Upper Key Stage 2 pupils will:

- Enable pupils to develop a deeper understanding of a wide range of scientific ideas.
- Explore and talk about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions more systematically.
- Encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.
- Recognise that scientific ideas change and develop over time.
- Select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.
- Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.
- Read, spell and pronounce scientific vocabulary correctly.

When working scientifically Upper Key Stage 2 pupils will:

- Plan different types of scientific enquiries to answer questions, include recognise and control variables where necessary.
- Take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Curriculum Implementation

This is how it works:

- Knowledge and understanding taught in blocks of work with a new topic each term/half term.
- Where possible links made with other subjects to enrich learning.
- Opportunities each term for children to develop their investigative skills focusing on a different aspect of enquiry each term.
- Incorporate the use of technology where appropriate.
- At least one aspect of scientific enquiry taught six times a term.
- Each term, to learn about a key scientist.
- Teachers use TAs to help support children when needed.
- Key scientific vocabulary taught in each lesson.
- Provide a range of engaging resources to enable the children to carry out fun and exciting experiments to deepen their learning and develop their understanding of the concept that is being taught.
- Opportunities for paired, group and class discussion/debate to consolidate learning.

This is what adults do:

- Plan a series of differentiated lessons which build on areas previously taught in other year groups that show progression.

- Engage the pupils through the use of engaging resources and use of media to carry out practical sessions.
- Termly book scrutinies, pupil perceptions and long term planning checks.
- Carry out a whole school Science day once a year on a whole school topic/focus.
- Support, encourage, foster and nurture a love of Science
- Research innovative, engaging practice and new techniques.

This is how we support:

- Support with learning the vocabulary for EAL and SEN pupils in order for them to join in with discussion.
- Work may be differentiated so that all children can meet the Learning Objectives.
- Teachers to use AFL to identify which children will need support during different lessons.
- Experiment resources to be checked to ensure they are safe and can be used with the children.

This is how we challenge:

- Work differentiated to give certain children a further challenge.
- Questions can be asked to children to further their individual knowledge and work on the extra information they may know.
- Children to be given leading roles during team activities and experiments.

This is how we ensure all children can access the curriculum:

- Children who have SEN or EAL needs have additional support in learning key vocabulary.
- Seating children alongside good role models to support one another.
- By providing visual/practical prompts such as flash cards
- High quality communication with other staff working with the same pupils
- Teaching lessons using a range of different techniques to appeal to different learning styles e.g. videos, drama, artefacts, texts etc.

Curriculum Impact

This is what you might typically see:

- Engaged learners
- Open and closed questioning
- Children posing their own questions and hypothesis for investigation
- Paired/group work
- Varied activities
- Practical investigations
- Children discussing, reflecting and sharing their learning

This is how we know how well our pupils are doing:

- Marking and feedback which also includes peer assessment.
- Lesson planned based on work done in previous year groups to ensure children are progressing.
- Formative assessment though questioning throughout the lesson.
- Photographic/video evidence.
- Informal observations of children during investigation and exploration.
- Display work within classes and around school.
- Assessment tracked at the end of each term through SIMS.

This is the impact of the teaching:

- Confident children who can talk about their science lessons and discoveries made.
- Children are able to use and explain the meaning of scientific vocabulary.

- Children who can confidently explain what they have learnt.
- Children who are prepared to take risks.
- Children who enjoy science lessons.

Date: September 2025
To be reviewed: September 2026