Kingsley Community Primary School

Science Policy

2019-2020

Draft

At Kingsley, we believe that…

Science teaches an understanding of natural phenomena. It can stimulate a child's curiosity in finding out why things happen in the way they do. Science teaches a variety of methods of enquiry and investigation to generate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.

Aims:

- To promote pupil interest and enjoyment of science and learning about the world in which they live and beyond in an **exciting** and **though provoking** way.
- To promote learning through a wide variety of ways and teaching styles and create a **positive, scientific learning environment**.
- To stimulate pupils' **natural curiosity** to ask questions, make observations, explore patterns and explain their reasoning.
- To raise children's **self-esteem** and **confidence** and encourage them to use reflection, reasoning, resourcefulness, resilience and thinking skills.
- To develop investigational skills through relevant practical tasks, considering **pupil interest** and ability levels.
- To **seek answers** to questions through collecting, analysing and presenting data in a variety of ways.
- To encourage the children to plan and carry out scientific investigations choosing the most appropriate equipment for themselves.
- To encourage children to develop **problem solving strategies** and to apply their science skills to other areas of the curriculum.
- To promote the language that pupils hear and speak as they are key factors in developing their **scientific vocabulary** and articulating scientific concepts clearly and precisely.

Objectives:

- Planning should ensure that there is a full coverage of the National Curriculum objectives in Key Stage 1 and 2.
- The planning for the Early Years should ensure that children have a firm foundation on which to build and develop the concepts, skills and knowledge incorporated in the National Curriculum for Science.
- Teachers are to use a range of different teaching strategies and stimuli to motivate, engage and promote children's learning experiences are maximised.
- Lessons are **fun** to encourage all children to participate with their learning.
- The classroom environment should support learning in science through interactive displays, pictures, relevant books and scientific vocabulary.
- Children have first-hand experience of carrying out practical investigations in order to develop a more 'hands on' approach and ownership of learning by the children.
- Opportunities for whole class demonstration, small group work and partner work are essential for children to co-operate and work sensibly together. Children learn how to help each other and gain confidence and they will also be encouraged to think independently.
- Working scientifically skills are embedded within a lesson to ensure pupils are actively involved in their own learning and are clear of their success criteria and the next steps to make further progress and develop their own skills.

Organisation

The role of the science co-ordinator is to:

- Take the lead in policy development and review, including the continuing successful implementation of the science curriculum.
- Keep up to date on local and national initiatives.
- Support colleagues in the development of plans and strategies for classroom management and deployment of science lessons.
- Take the lead and support colleagues with implementing the new assessment framework and uploading of data to the shared drive.
- Take responsibility for the purchase and organisation of science resources.

The role of the teaching assistant assigned to science is to:

- Help with the sorting and organisation of the science resource cupboard.
- To support the science co-ordinator with ordering and checking of science resources.
- To support with whole-school science displays.

The Learning Environment

- In all classrooms throughout Kingsley school, science vocabulary should be on display at all times and changed according to the current topic so that the children are encouraged to understand and use the key vocabulary.
- Children will lead their own learning through investigations and experiments when it is appropriate and safe to do so.
- Our working wall displays should reflect the thought processes and building of scientific skills and knowledge from the National curriculum.

Health and Safety:

- Children will be informed of any risks or hazards but will also be encouraged to assess and identify risks for themselves.
- Children will be shown how to use scientific equipment safely.

Cross Curricular Links:

- Where possible, teachers will be committed to linking the children's learning in science to other curricular areas.
- As we are currently changing our curriculum, where possible, links are being made to keep continuity of learning going.
- Speaking and listening will be actively promoted during scientific investigations.
- The children develop many of their non-fiction reading and writing skills in science.
- Mathematical skills, such as weighing and measuring, are an important part of science lesson.
- Where appropriate, children will record their findings using charts, tables and graphs and use ICT where possible.

Assessment and Recording

- Science is assessed at the end of each topic.
- Assessment in science is continuous throughout the planning, teaching and learning cycle.
- We assess as the learning is happening, through conversations, observing children during lessons, questions, talking and listening to children, and review their written work. 'End of Topic' assessments tasks - which are often problem based – are used to highlight learning from the topic.
- E.g. Electricity – lighting in the local area is poor, local residents are concerned for their safety when they are walking in the

evening. How can the problem be fixed?

Special Educational Needs

- Science should be taught in line with the Special Educational Needs Policy.
- Teachers should regularly check and update children's IEPs to provide activities which match the pupil's needs.
- Vocabulary and visual aids will be used when appropriate.

English as an Additional Language

- In Kingsley school, pupils who have English as an additional language will be taught Science using strategies which suit their ability. Children will be supported by the Teacher or Teaching assistant to develop their knowledge and understanding of scientific vocabulary.
- Pupils will also have the opportunity to work with a 'talking and working partners' for peer support and learning.
- Where possible, children should experience vocabulary in their home language where possible with English alongside and pictures for the visual element.

Programmes of Study at Kingsley (National Curriculum)

From Year 1 to Year 6, science is taught weekly for two hours. Provisions are made for different ages and levels of ability within the classroom where appropriate.

Half-termly assessment is at the end of each topic taught and uploaded to the shared drive and overseen by the Science Co-ordinator.

Key Stage 1

<table>
<tr><td colspan="2">Year 1-2 Working Scientifically
• asking simple questions and recognising that they can be answered in different ways
• observing closely, using simple equipment
• performing simple tests
• identifying and classifying
• using their observations and ideas to suggest answers to questions
• gathering and recording data to help in answering questions</td></tr>
<tr><td colspan="2">Programme of Study</td></tr>
<tr><td>Year 1</td><td>Year 2</td></tr>
<tr><td>1. Plants
2. Animals, include Humans
3. Everyday Materials
4. Seasonal Changes</td><td>1. Living Things and their Habitats
2. Plants
3. Animals, including Humans
4. Uses of Everyday Materials</td></tr>
</table>

Lower Key Stage 2

Year 3-4 Working scientifically
• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.

Programme of Study	
Year 3	**Year 4**
1. Plants 2. Animals, including Humans 3. Rocks 4. Light 5. Forces and Magnets	1. Living Things and Their Habitats 2. Animals, including Humans 3. States of Matter 4. Sound 5. Electricity

Upper Key Stage 2

Year 5-6 Working Scientifically	
• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • using test results to make predictions to set up further comparative and fair tests • reporting and presenting 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 • identifying scientific evidence that has been used to support or refute ideas or arguments	
Programme of Study	
Year 5	**Year 6**
1. Living Things and their Habitats 2. Animals, including Humans 3. Properties and Changing Materials 4. Earth and Space 5. Forces	1. Living Things and their Habitats 2. Animals, including Humans 3. Evolution and Inheritance 4. Light 5. Electricity

This policy was written my Jennifer McArthur on 22nd October 2019