



## **Science at Bridge Primary School.**

At Bridge Junior School we recognise the importance of science in every aspect of daily life. Children begin their time at Bridge with some general knowledge of the world around them taken from their Infant school experience and their life experience outside of the classroom. The Early Years and KS1 the children learn to ask questions and develop ideas, conduct simple experiments and are taught the building blocks of understanding to interpret the world around them. They learn about aspects such as light, the earth, simple biology and materials. Children from an inner city catchment may have limited life experiences from which to develop their curiosity and understanding of the world. Throughout their time with us, they have a wide range of experiences to widen their horizons, allowing them to make links in their learning and better comprehend the world around them. We equip pupils with skills, knowledge and understanding and encourage children to be inquisitive throughout their time at Bridge Junior School. Throughout our curriculum, the children will acquire and develop the key knowledge that has been identified within each unit of work and across each year group. We will ensure that the Working Scientifically skills are built-on progressively and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, planning fair tests, making observations and explaining concepts confidently. We will encourage them to continue asking questions and to be curious about the world around them. As children leave the school, they are prepared for further study in science in KS3 and equally have a grounding in understanding world around them that they can apply to their everyday lives.

### **The organisation.**

The Long Term Plan for science lays out the order in which the units of work are taught across the school. This order is based upon the most effective time of year to teach certain topics (for example "Light" and "Plants") and where science can complement other areas of the curriculum to create meaningful cross curricular links that provide context the children (for example Year 3 learn about Rocks and Soils at the same time as their geography unit "Rivers"). Objectives have been made using the National Curriculum as starting point and broken down to a series of progressive statements that are used in planning. Science teaching is supplemented with the use of adapted and modified plans from several published resources and schemes of work. Teachers dip into these as and when appropriate tailoring the work to the needs of the children. Science is taught in 6 weekly blocks, of which there are 6, over the course of the year. There are weekly lessons that are flexible to ensure that investigations are given appropriate timings for children to develop their use of scientific skills. Each unit of work has investigations that allow children to learn through experiences and observations. Each lesson has dedicated time to reflect and build upon previous learning, with an emphasis on technical vocabulary.

### **The impact.**

As the children progress through the school, they develop the knowledge and skills to interpret, understand and value the world around them. The progressive nature of the Working Scientifically skills will provide a foundation upon which they can develop their learning further in secondary schools. Also, the children will leave having been encourage to ask questions and seek answers regarding the wider world. They will be able to recall and use scientific vocabulary and have a solid grounding in 3 areas of science; biology, chemistry and physics. They will be enthusiastic about their science learning, make links between areas of science and other subjects and develop an inquisitive mind.



## The National Curriculum Expectations.

### Key Stage One Expectations.

#### Prior Learning

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should 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. They should 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. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

#### Working scientifically

- During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:
  - 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
  
- asking simple questions and recognising that they can be answered in different ways

### Key Stage 2 Expectations.

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing 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. They should 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. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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