Mastery in Science at Charlton Kings Infants' School

'Promoting curiosity and enquiry through scientific investigation'

Beliefs and values:

At Charlton Kings Infants' School we acknowledge that Science is a core subject within the National Curriculum. We aim to inspire children by encouraging them to be inquisitive about their world. We believe science should nurture our children's innate curiosity and should enable them to develop scientific knowledge, skills and understanding, prompted by a desire to ask questions and find possible solutions. We believe that scientific enquiry should be at the heart of our science curriculum and that learning should take place through first hand practical experiences. As an ECO school, we also believe that it is essential to ensure that our children respect our natural world and develop a firm understanding of the need to promote a sustainable future.

Mastery teaching and learning in Science:

At CKIS, we want all children to acquire a wide scientific vocabulary and become confident enquirers. We aim to ensure that all children learn to ask increasingly probing questions and develop as confident communicators when explaining their own thinking and that of others.

In the **EYFS** (Kindergarten and Reception), children are taught to notice similarities, differences and changes within the world around them. They are taught through a wide range of rich adult-led and child-initiated practical learning opportunities based upon children's interests and natural enquiry, with staff sensitively identifying and building upon next steps for learning. Children are taught to ask questions, make comparisons and talk to others about their findings and thoughts.

In **Key stage 1** teaching and learning objectives are linked to the National Curriculum. Pupils are taught to recognise and use appropriate scientific vocabulary when asking questions about what they notice and when communicating their ideas about what they have found out to others. They are taught to use different types of scientific enquiry to gather and record data, using simple equipment where appropriate. Children are supported to observe changes over time, make comparisons and notice patterns. They are also taught to group and classify and carry out simple comparative tests. At all times, children are actively encouraged to find out further information using a wide range of secondary sources.

We also provide rich opportunities to engage with and promote the work of 'real' scientists in our local and wider community through an annual Science Day, opportunities to liaise and work with scientists in our feeder Secondary schools and where appropriate, engagement in the annual Cheltenham Science Festival.

In year 1, children learn about:

- **Plants** – Observing growth and change - focusing on recognising, naming, describing and comparing plants and trees
- **Animals (Including Humans)** – Observing growth and change - focusing on recognising, naming animals and features of the body, taking care of animals and themselves and exploring their senses
- **Everyday materials** – Exploring and asking questions - focusing on naming, discussing and comparing features and properties
- **Seasonal changes** – Observing and talking about changes in the weather and seasons

In year 2, children learn about:

- **Living things and their habitats** – focusing on the essential characteristics for life and health
- **Plants** – focusing on the requirements for germination, reproduction, growth and survival
- **Animals (including humans)** – focusing on the introduction of reproduction, growth and the basic needs for survival
- **Uses of everyday materials** – focusing on identifying, comparing and discussing the use and suitability of different materials and exploring their properties

Jane Morgan and Lisa Fox: Subject leads – Charlton Kings Infants' School

Charlton Kings Infants' School

Monitoring, Evaluation and Improvement:

Assessment criteria are written into our school curriculum and medium term plans. Teachers monitor children's progress and attainment throughout the year against clear expectations set within our CKIS Science progression document in order to inform ongoing teaching and learning.

We complete the EYFS Profile at the end of EYFS (Year R) which includes assessment of children's knowledge, skills and understanding related to 'The World'. At the end of KS1, we assess whether children have met the Expected Standard in Science. Information from our formative assessments are used to inform our Pupil Progress Meetings at the end of terms 1, 3 and 6 in order to identify and prioritise key actions to inform ongoing teaching and learning.

The Science subject leaders are actively engaged in monitoring teaching and learning in Science through:

- Focused learning walks (priorities based on data analysis, discussions from PPMs, book scrutiny etc) and lesson study
- Regular book scrutiny and pupil conferencing
- Monitoring year group planning and the quality of teaching and learning
- Attending regular training and Science subject leader network meetings