

Aim of the Science Curriculum:

At Canterbury Cross Primary school, we deliver a high-quality science curriculum, which provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. We deliver a Curriculum which centres around a sense of excitement and curiosity.

The National Curriculum for Science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

How is the Science programme of study implemented?

Science is taught weekly through the lens of fostering children’s curiosity and allowing it to inform the teaching delivered. Children are naturally keen explorers and the curriculum’s intent is to provide a platform for awe and wonder. This is achieved through developing a curriculum which identifies and sequences the knowledge pupils need, especially to work scientifically, by providing all pupils with opportunities to take part in high-quality practical work that has a clear purpose in relation to the curriculum.

The Science curriculum is delivered through a range of engaging topics assigned to each year group, in accordance with the National Curriculum. Here is a breakdown of the programmes of study taught per year group across Key Stage 1 and Key Stage 2:

<p><u>Year 1:</u></p> <ul style="list-style-type: none"> • Plants • Animals, including humans • Everyday materials • Seasonal changes 	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> • Living things and their habitats • Plants • Animals, including humans • Uses of everyday materials
<p><u>Year 3:</u></p> <ul style="list-style-type: none"> • Plants • Animals, including humans • Rocks • Light • Forces and magnets 	<p><u>Year 4:</u></p> <ul style="list-style-type: none"> • Living things and their habitats • Animals, including humans • States of matter • Sound • Electricity
<p><u>Year 5:</u></p> <ul style="list-style-type: none"> • Living things and their habitats • Animals, including humans • Properties and changes of materials • Earth and space • Forces 	<p><u>Year 6:</u></p> <ul style="list-style-type: none"> • Living things and their habitats • Animals, including humans • Evolution and inheritance • Light • Electricity

Science at the Early Years Foundation Stage (EYFS) is covered within ‘Understanding the World’ where Science is indirectly implemented by encouraging independent exploration. The curriculum at EYFS is centred around

exploration, problem solving, observations, predictions and discussions. Children are encouraged to ask questions ownership of what they want to discover next. sets them up for success.

How is Science assessed focusing on prior knowledge and progression?

When creating an effective sequence of new teaching, assessment of prior knowledge is key. Educators across Canterbury Cross Primary School use formative and summative assessment tools to track children's understanding of key skills demonstrated throughout Science. The systems are used to assess the current understanding of children before teaching a sequence of lessons. Additionally, they are used at the end of a topic in order to provide an end-of-topic update on the child's attainment level. To aid with this, summative assessments are used at the end of each programme of study providing teachers with a clear indication of children's understanding. This is in addition to targeted discussions, along with 'gap-tasks' and 'next steps' provided within marking feedback, which simultaneously allow children to review and further their learning and provide teachers with a chance to address misconceptions. Vocabulary and conversation starters are used consistently to begin lessons and teachers often use these as further formative assessment opportunities.

Due to the nature of the programme of studies listed above, teaching is expected to build on prior knowledge where a topic has been taught in previous years. To support this, teachers use a variety of vertical plans that detail the progression of skills shown year-by-year within each topic. This ensures that teaching is not repeated, and allows for children to build on scientific knowledge acquired in previous years thus deepening their understanding.

How do we ensure the Science curriculum is for everyone?

Because our curriculum is designed to develop a sense of excitement and curiosity about natural phenomena for all, inclusivity is a key principle. It is reflected through adapted planning, lesson resources and investigations to ensure that all children, including those with Special Educational Needs and Disabilities (SEND) or an Education and Health Care Plan (EHCP), receive targeted teaching allowing them to reach their full potential. When investigating, explicit modelling of the method itself and of representation of results is provided to ensure that all children are supported when exploring the wonder of Science.

Teaching sequences are thoughtfully crafted to allow for children to build on prior knowledge and make connections between lessons clearer. 'Gap-tasks' are used, according to the school's marking policy, to provide all children with an opportunity to independently review their learning whilst teachers use these to address individual and whole-class misconceptions.

How do we ensure key content is remembered as pupils move through school?

Opportunities to build on prior knowledge is embedded within the structure of each Science lesson taught throughout Key stages 1 and 2. Science lessons are planned using a four-part structure:

1. Vocabulary starter or conversation starter
2. Recap on prior learning and knowledge
3. Today's learning
4. Plenary

To begin with, vocabulary starters are used to revisit the scientific terminology that is specific to each topic. As this can include a range of new key words to the children, it is an essential part of the lesson that allows for the vocabulary, and their associated definitions, to be remembered more readily. This is usually taught through a variety of fun and engaging vocabulary games. Used interchangeably with these, are conversation starters, which can come in the form of a big question, about the current scheme of learning. They are used to actively encourage children to use the new vocabulary attained within lessons; teachers use this as an opportunity for further formative assessment.

After that, a further window for re-capping is provided. Children are reminded of previous learning gained either in the last lesson, earlier in the topic or even as far back as a previous year. Therefore, connections are more easily made between lessons and allows each scheme of learning to become more cohesive. Teachers can use this to actively address any misconceptions and key learning that has not been remembered, ensuring that new learning is built on solid foundations. The new learning in each lesson is consequently intrinsically linked to what came before it. Finally, plenaries are used to evaluate the current learning and potentially develop curiosity providing children with an insight into their next stage of learning.

How will the Science curriculum prepare children for the future and allow children to apply the key skills learnt?

Within Science, we believe it is our responsibility to develop inquisitive, critical and observational children by the end of their time at Canterbury Cross Primary School. They should be competent enough to use technical vocabulary confidently when discussing scientific explanations. Children should be able to evaluate whether a scientific report was fair and accurately tested, based on their own experiences. When providing their own results post-investigation, children should know a variety of ways and be able to choose the clearest format to present their data. We hope that children would have developed a deeper understanding of a range of scientific ideas, would have begun to see the connections between the different subject areas and become aware of some of the big ideas underpinning scientific knowledge and understanding that they will come across both in secondary school and in later life.