



## LEGACY

## DIVERSITY

## ENQUIRY

### Science

**Intent-** We aim to...

develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry and Physics.

develop the essential scientific enquiry skills to deepen their scientific knowledge.

use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts.

be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

develop an enthusiasm and enjoyment of scientific learning and discovery.

### Implementation- How do we achieve our aim?

#### Key Knowledge

Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group. The key knowledge identified by each year group is informed by the national curriculum and builds towards identified phase 'end points' in accordance with NC expectations. Key skills are also mapped for each year group and are progressive throughout the school. These ensure systematic progression to identified skills and their end points, which are in accordance with the Working Scientifically skills expectations of the national curriculum.

EFYS	KS1
Everyday materials Animals including humans Plants Seasonal changes Living things and habitats States of Matter	<b>Year 1</b> Seasonal Change and daily weather Introduce plants- (trees) Animals, including humans Everyday materials Revisit: Animals, including humans Plants Revisit: Plants, Animals including humans <b>Year 2</b> Living things and their habitats Animals, including humans Uses of everyday materials Revisit: Living things and their habitats/materials Plants Revisit: Living things and their habitats/Animals including humans
LKS2	UKS2
<b>Year 3</b> Rocks Animals, including humans Revisit: Rocks Forces and magnets Plants Light <b>Year 4</b> Living things and their habitats States of matter Animals, including humans Electricity Sounds	<b>Year 5</b> Properties and changes of materials Animals, including humans Forces Earth in space Living things and their habitats <b>Year 6</b> Electricity Animals including humans Light Living things and their habitats Evolution and inheritance



#### Distinct Subject Domains

Science at CREATE is organised into three distinct subject domains: biology, physics and chemistry. Where inter-disciplinary concepts are encountered, such as the particle model, these are taught explicitly and connected across science domains. Our Science curriculum is sequenced using the national curriculum into meaningful and connected 'chunks' of content to reduce the load on the working memory as well as creating coherent and strong long-term memories. The sequence of substantive and disciplinary knowledge enables pupils to become 'more expert' with each study and grow an ever broadening and coherent mental model of the subject.

#### Knowledge Retention

Our Science curriculum is planned so that the retention of knowledge is much more than just 'in the moment knowledge'. The cumulative nature of the curriculum is made memorable by including retrieval practice, word building and deliberate practice tasks. This model supports opportunities for children to associate and connect significant scientific concepts, over time, and with increasing expertise and knowledge.

#### Cross Curricular Links

Science links well with other STEM subjects in particular in D&T, children have opportunities to draw upon their scientific knowledge, thus learning how knowledge in Science is transferable. In addition, presenting data allows children to use tables and graphs, therefore drawing upon skills primarily learnt in Maths.

## Implementation (continued)

### Studying Key Scientists

Our curriculum values the study of scientists from the past as well as promoting diverse present-day role models in the field. These studies help us to learn how they used, at that time, their substantive and disciplinary knowledge to develop a conception.

### Consistent Approach

At CREATE, we recognise that science is underpinned by four key concepts - Physics, Biology, Chemistry and Working Scientifically. Therefore, our Science Curriculum ensures children learn all of the key concepts in age-appropriate ways. Though working scientifically is not a specific area of science, we recognise that enquiry skills are important and children need an understanding of the concept of investigation.

### Strong Foundations

In EYFS, children learn about the world around them as part of the Understanding the World strand. They make observations of nature and the school environment and develop an understanding of seasons and what plants and animals need to grow.

### Weekly Lessons

Science is taught on a weekly basis. At the beginning of a block, knowledge organisers are shared with the children, so that they all understand the expectations of the learning ahead, as well as the desired outcomes; children become extremely familiar with these throughout a block, self-assessing against the new knowledge and skills acquired.

**Impact-** How will we know we have achieved our aim?

**As a Scientist leaving CREATE, every child will:**

have a sense of awe, wonder and curiosity in the science in the world around them and have the skills to investigate, experiment and discover for themselves.

be confident to ask their own questions and use their scientific skills to try to discover the answers.

understand, and be inspired by the fact, that science is ever-changing, and science changes our lives.

have experienced a wide range of inspiring engagement and enrichment activities including educational visits and expert visitors.

have a firm grounding in the disciplines of biology, chemistry and physics and a secure bank of knowledge and scientific skills which they can build on in the next stage of their science education.