

# Science Curriculum



**'Inspiring and achieving success for all!'**

Upton Cross Academy

## Intent

Our aim at Upton Cross is to instill in our children a life-long passion for science and for our children to see science as a viable career. Children will be immersed in activities that encourage creative thinking, teamwork and foster curiosity. We aim to give children the skills they will need to be successful in all walks of life, not just in science, developing knowledge, scientific enquiry, observation, problem solving and increase their cultural capital. Science at Upton Cross seeks to equip children with a strong understanding of the world around them whilst acquiring skills to help them think like a scientist and to gain an understanding of scientific processes. Each topic in science has enquiry skills embedded throughout and gives children an opportunity to take risks in safe environment and to learn from their mistakes, thinking critically about how they can improve their methods.

## Implementation



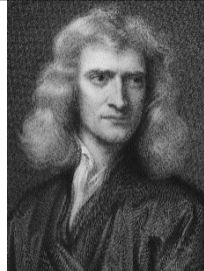



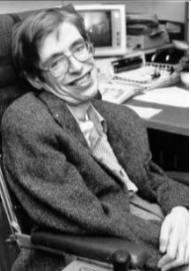

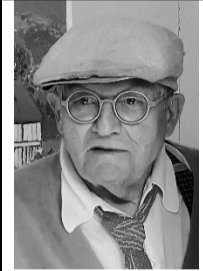
Our curriculum is developed from the National Curriculum 2014 programmes of study for Key Stage 1, 2 and the EYFS Framework in the Foundation Stage.

Children in the Foundation Stage work towards achieving the Early Learning Goals in 'understanding the world'. Teachers plan specific topics and build upon and develop children's own interests and curiosity about the world they live in. Science in Early Years is taught alongside other areas of learning.

In years 1 to 6 teachers plan their lessons using our 2-year rolling programme and progression of knowledge and skills. Each topic begins with a science quiz to ascertain the children's knowledge and is followed with engaging activities to inspire learning. Each unit includes opportunities for working scientifically and builds on the progression of skills up through the school. At the end of each unit a quiz is repeated to show knowledge progression. We ensure that science is supported through teaching in our Outdoor Learning.

At Upton Cross Academy, science is taught through the reflective characteristics of learning outlined below, this embraces learning from EYFS through to Y6. We have selected a British ambassador for each characteristic as shown below.

## Characteristics of Learning

								
<b>Ernest Shackleton</b> I can find out and explore.	<b>William Shakespeare</b> I play with what I know.	<b>Sir Isaac Newton</b> I am willing to have a go.	<b>Beatrix Potter</b> I am involved and can concentrate.	<b>Emmeline Pankhurst</b> I keep on trying.	<b>Kelly Holmes</b> I enjoy achieving what I set out to do.	<b>Steven Hawking</b> I have my own ideas.	<b>Isambard Brunel</b> I make links in my learning.	<b>David Hockney</b> I choose ways to do things.

## Impact

The successful approach to the teaching of science at Upton Cross results in fun, engaging, high-quality science education, that provides children with the foundations for understanding the world that they can take with them once they complete their primary education. So much experience lends itself to outdoor learning, and so we provide children with opportunities to experience this. Children learn the possibilities for careers in science as a result of our community links and enrichment activities such as 'Science Week'.

## 2 Year Rolling Programme

	KS1		LKS2		UKS2	
	Year A	Year B	Year A	Year B	Year A	Year B
<b>Autumn Term</b>	Humans Animals	Animals Living Things	Light Sound	Rocks States of Matter	Forces Properties and changes of materials	Living things and their habitats Light
<b>Skills</b>						
<b>Spring Term</b>	Living Things Everyday Materials	Uses of Everyday Materials Plants	Forces and Magnets Animals including humans – muscles and skeleton	Electricity Living things and their habitats	Earth and Space Working Scientifically	Animals including humans Electricity
<b>Skills</b>						
<b>Summer Term</b>	Plants Seasonal Changes/ Working Scientifically	Humans Working Scientifically	Plants Working Scientifically	Animals including humans – digestive system. Working Scientifically	Animals including humans Living things and their habitats	Working Scientifically Evolution and inheritance.
<b>Skills</b>						

## SEND Strategies

	Here is how we will help:
Attention Deficit Hyperactivity Disorder	<ul style="list-style-type: none"> <li>Practical activities – Science lessons have practical activities at their heart – if a child needs support for this, the classroom TA to be on hand to help (but not lead) the activity.</li> </ul>
Anxiety	<ul style="list-style-type: none"> <li>Children are prepared before the science lesson- instructions for carrying out the experiment are given and children are talked through the steps, predictions are discussed beforehand and children are prepared for any reactions/noises</li> </ul>
Autism Spectrum Disorder	Depending on the child and their specific needs, children on the Autism Spectrum may benefit from: <ul style="list-style-type: none"> <li>Group work (they may be given a role within the group that they have chosen or can observe)</li> <li>One-to-one TA support – children can complete the experiment with tailored support</li> <li>Preparation if there will be loud noises/mess etc.</li> </ul>

	<ul style="list-style-type: none"> <li>• Being allowed to meet their own sensory needs e.g. wash hands/give themselves distance if required</li> <li>• Use annotate photographs as evidence – scribe if needed</li> </ul>
Dyscalculia	<p>The most difficult element for dyscalculia in science is recording accurately. To help we will:</p> <ul style="list-style-type: none"> <li>• Give the child a pre-made graph with some data already completed</li> <li>• Have a range of ways to show their learning including: photographs, diagrams, labels to stick on to pictures, worksheets, posters, presentations (oral and visual), working in groups, verbal contributions, practical experiments and observations, matching activities etc. So writing does not interfere with showing knowledge</li> </ul>
Dyspraxia	<ul style="list-style-type: none"> <li>• Give opportunity for working in groups to allow children to work to their strengths</li> <li>• Experiments will be altered to allow access to all</li> <li>• TA/Teacher support will be given where required</li> </ul>
Hearing Impairment	<ul style="list-style-type: none"> <li>• Provide written and pictorial instructions</li> <li>• Allow discussion and sharing of ideas to build verbal skills</li> <li>• Have group members face the child when sharing</li> </ul>
Toileting issues	<ul style="list-style-type: none"> <li>• Allow time to complete the experiment – give extra time if required</li> </ul>
Cognition and learning challenges	<ul style="list-style-type: none"> <li>• We will allow for a range of ways for children to explain an experiment/results including in words, pictures, comparisons to real-life situations and contextualisation</li> </ul>
Speech, Language & Communication Needs	<ul style="list-style-type: none"> <li>• We will have a range of ways to show their learning including: photographs, diagrams, labels to stick onto pictures, worksheets, posters, presentations (oral and visual), working in groups, verbal contributions, practical experiments and observations, matching activities etc.</li> <li>• Vocabulary cards/mats with visual representations will be used to give instructions and to structure the sessions</li> </ul>
Tourette Syndrome	<ul style="list-style-type: none"> <li>• Depending on frequency and severity of tics, some experiments may need to be adapted to accommodate spillage and experiments will be carefully supervised</li> </ul>
Experienced trauma	<ul style="list-style-type: none"> <li>• As with anxiety, trauma can stop a child learning in science due to associations e.g. sights, smells, textures</li> <li>• We will prepare the child regarding noises, mess etc. If the experiment has the potential to trigger them</li> <li>• We will allow the child to observe rather than participate if needed – in group work, this could be allowing them to scribe, give instructions etc. To be involved in the experiment without handling the ingredients/equipment</li> </ul>
Visual Impairment	<ul style="list-style-type: none"> <li>• Familiarise the child with the equipment being used beforehand – let them feel the equipment and create an image in their mind. Discuss the experiment beforehand and prepare the child for any noises/textures</li> <li>• The child will complete the experiment with support given by TA/teacher as needed</li> <li>• We will provide a range of ways to show their learning including: photographs, diagrams, labels to stick onto pictures, worksheets, posters, presentations (oral and visual), working in groups, verbal contributions, practical experiments and observations, matching activities etc.</li> <li>• We will explain the representation to the child and scribe responses to experiment, predictions beforehand etc.</li> </ul>