

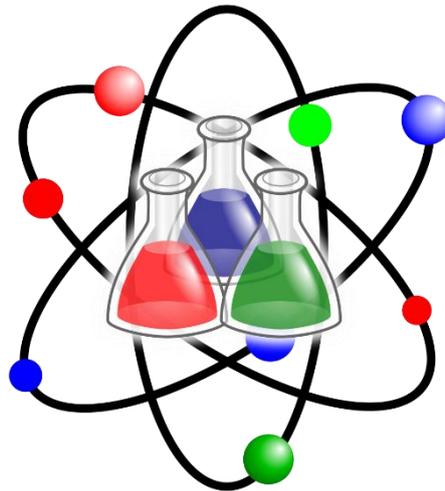
St Vincent De Paul R.C. Primary School, Knutsford

Mission Statement:

Believe, Trust and Be Ready
“That they may have life, and to the full” John 10:10



Science Curriculum



Science Curriculum Design

This document should be read alongside the Science policy, St Vincent's Progression in Scientific Knowledge (EYFS/KS1, LKS2, UKS2/KS3) and St Vincent's Progression in Scientific skills (EYFS/KS1, KS2).

Rationale

Primary Science education is concerned with increasing pupils' knowledge and understanding of our world through the specific disciplines of Biology, Chemistry and Physics, and with developing skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, creating a sense of awe and wonder regarding the nature of our world. It encourages respect for living organisms and the physical environment and provides opportunities for critical evaluation of evidence. We believe that children should be encouraged to ask scientific questions and develop their own investigations based on ideas given by the teacher and their own ideas. These ideas will be increasingly founded in scientific knowledge and understanding and help children to appreciate how Science will affect their future on a personal, national and global level.

Intent

At St Vincent's Primary school, in conjunction with the aims of the National Curriculum, the intent of our Science teaching is to:

- develop an enthusiasm and enjoyment of scientific learning and discovery.
- build on our children's natural curiosity and develop their ability to generate and answer questions to help make sense of the world around them.
- encourage open mindedness and perseverance to develop the skills of investigation, ensuring that children are challenged and supported whatever their ability.
- be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future, encouraging them to take responsibility for their world and develop good stewardship skills.
- increase scientific understanding through the use of the whole school environment, particularly our outdoor provision.

Implementation

How Science is structured throughout the School:

Science throughout the School has been planned to ensure that the school gives full coverage of 'The National Curriculum programmes of study for Science 2014', and 'Understanding of the World' in the Early Years Foundation Stage.

Staff use progression grids of both scientific knowledge and skills to plan their series of lessons and ensure that there is appropriate coverage of specific objectives for each year group. Age-appropriate scientific vocabulary lists are provided in books and on classroom displays so that key scientific terms become familiar and allow children to continually build on their knowledge.

Science is taught as discrete units to ensure coverage and progression but whenever possible cross-curricular links will be made. To inspire curiosity and wonder about the world around them, teachers use outdoor learning opportunities where there is relevance to their unit of learning. This supports the children to have an understanding of the science around them and places it into a familiar and local context.

Staff adapt and extend their planning to match all pupils' needs and are mindful of additional support required by SEND pupils. A variety of resources are used by staff to help plan well-balanced and creative Science lessons. At the core of this are our St Vincent's Curriculum planning documents which are supported by a number of resources including the ASE PLAN (Pan London Resource Network) resource

planning sheets, A creative Approach to Teaching Science by Nicky Waller, Focused Assessment plans (TAPs), STEM resources, Explorify and the website Developing Experts.

EYFS:

Pupils explore Science topics by making predictions, using their senses and investigating materials and their properties. Science is taught through the strand of 'Understanding of the World' and is also linked to other strands of the EYFS framework for learning, 2014.

Teachers and teaching assistants support pupils to develop a solid understanding of processes occurring around them in their day-to-day lives. Children are encouraged to be creative and inquisitive as they participate in activities, including exploratory play in specific scientific areas.

Key Stage One

Pupils observe, explore and ask questions about living things, materials and the world around them. They begin to work together to collect evidence to help them answer questions, find patterns, classify and group objects, research using a variety of sources and carry out fair testing. They share their ideas and communicate using scientific language, drawings, charts and tables and in conjunction with their teacher use reference materials to find out more about scientific ideas.

Key Stage Two

Children are encouraged to extend the scientific questions that they ask and answer about the world around them. They are increasingly challenged to understand and use Scientific vocabulary appropriately. The pupils carry out a range of scientific enquiries including:

- observations over time,
- pattern seeking
- classifying and identifying
- comparative and fair testing
- research

Throughout the year we plan opportunities for the enrichment of the children's Science experience through a range of additional activities. These include:

- Relevant Science based visits occur to places of interest specific to the curriculum
- Extra-Curricular clubs including Mad Science, Gardening club
- Visits to St Nicholas High School – Sample KS3 lessons – Y5 and Y6
- Visitors – Eg. Chemistry with cabbage, Dentist, Planetarium, STEM Ambassadors
- An annual Science Fair during which individual year groups present experiments based around their class curriculum to their peers.
- Whole school investigations.
- Whole school global Science focus – Practical Action Challenges
- Promotion of parent/family involvement in Science using: extended research for homework, Science Selfie competition, visits from Parent Scientists.

Impact

As a result of our Science teaching at St. Vincent's you will see:

- Children who are happy, engaged and enthused in their Science lessons and are able to ask and answer questions about the world around them.
- Children who can talk with confidence about their learning and knowledge in Science.

- Children who can plan and carry out scientific investigations, working with increasing independence as they progress through school.
- Children with an understanding of the important role of Science and Scientists in our world, inspired by a range of outside speakers and visits.

Long Term Plans

Year Group	Autumn 1 st	Autumn 2 nd		Spring 1 st	Spring 2 nd	Sum 1 st	Sum 2 nd	
		ELGs: Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.						
	All about me	Hibernation of animals- hedgehogs		Space	Superheroes! Melting, freezing, floating, magnets		Mini-beasts Growing plants - sunflowers	
Year 1	Seasonal Changes (Revisited in Autumn, Winter, Spring, Summer – often cross curricular approach)							
	Animals including humans		Whole school investigation project	Everyday materials		Practical action activities	Plants VISIT -Tatton Park	
Year 2	Uses of everyday materials	Uses of everyday materials		Animals including humans	Plants		Living things and their habitats VISIT: Lower Moss Wood	
	1 week of seasonal change observations Autumn -October			1 week of seasonal change observations Winter – January	1 week of seasonal change observations Spring – April		1 week of seasonal change observations Summer – July	
Year 3	Animals including humans	Light and shadows		Rocks VISIT: Manchester Museum	Plants		Plants/Forces and magnets	Forces and magnets
Year 4	States of matter VISIT: Catalyst Museum	States of matter		Sound	Animals including humans- digestion		Electricity	Living things and their habitats (classification and changes in environment)
Year 5	Earth and Space VISIT: Jodrell Bank	Forces		Properties and changes of materials	Properties and changes of materials		Animals including humans	Living things and their habitats
Year 6	Light VISIT : Manchester Science Museum	Electricity		Living things and their habitats/ classifying plants and animals	Living things and their habitats/ classifying plants and animals		Evolution and inheritance	Animals, including humans
							Great Science Share/School Science Fair	

Staff are given autonomy to change the order that they may teach units within their year group .

Progression - See the following separate documents:

St Vincents' Progression in Scientific Knowledge (EYFS/KS1, LKS2, UKS2/KS3) St Vincents' Progression in Scientific skills (EYFS/KS1, KS2)