



Science

Creating active, knowledgeable, and curious scientists, who question, explore and investigate to help them understand and explain God's world.

Intent

For the children at Churchfields, The Village School we believe that science means exploring, discovering, investigating, and understanding the world around them through the specific disciplines of biology, chemistry, and physics. Science is a largely practical subject that involves children doing things themselves. Enjoyable science activities will increase and develop secure knowledge and enable them to use the skills associated with scientific methods of enquiry and investigation. It is our intent for children to be life-long learners who: work with others, learn to persevere, learn how to ask questions and apply their basic skills from numeracy and literacy. Children will develop attitudes that encourage work to be carried out in a scientific way to gain an understanding of scientific processes and the uses and implications of science, today and for their future.

Implementation

Our curriculum is shaped by our school ethos to enable all children, regardless of background, ability, additional needs, to flourish to become the very best they can be.

We teach the National Curriculum supported by a clear skills and knowledge progression. A Long-Term Plan for science (Appendix 1) has been devised to ensure coverage of the National Curriculum programmes of study, and to allow for consolidation and progression through both key stages in our mixed year group classes. Teachers are free to change the order units are taught in each year to make cross-curricular links providing all areas are covered over the specific year cycle.

A medium-term scheme of work identifies the science objectives for each unit of learning. Science skills (working scientifically) are taught continuously through, and clearly related to, the teaching of substantive science content in the programme of study.

Children have their own prior ideas to share, discuss and investigate and these should be considered when carefully planning lessons throughout a unit of work. A 'Science Floor Book' can be found in each classroom which, records pupils' ideas, discussions and explorations and complements their recording in their individual science exercise books. A variety of planning resources including both online and published materials are available to support teachers planning and delivery of lessons.

It is important that the teacher identifies the most important strategy to suit the purpose of a particular learning situation. There are a variety of ways in which the teaching may be effective, and our school has a tradition of a hands-on approach. It is, however, frequently acceptable to use demonstration, research, exploration, and teacher-led discussion and investigations when circumstances, resources and the needs of individual groups allow.

We have a local environment rich in resources for scientific study and make use of visits outside school to provide stimulation and to foster children's respect for the environment. Visitors are actively sought out to enable children to see scientists in action in chosen careers and to share specific expertise and knowledge. We also participate in national initiatives such as the Great Science Share for Schools and British Science Week.

Impact

Our Science Principles (Appendix 2) neatly sum up what we expect from science teaching and learning at Churchfields.

For our Churchfields pupils we aim to secure knowledge and understanding, to inspire and stimulate curiosity, foster independence, and encourage questioning about the world around them. It is our duty as educators to develop and build children's **Science Capital** so that they are enthused and enabled to appreciate and pursue science learning in the future and understand its application and importance in our daily lives.

APPENDIX 1

Churchfields, the Village School - Science Long Term Plan

Please note that the units of work can be planned in any order through the designated year to fit with thematic learning where appropriate.

KS1	A	Everyday materials Y1	Forces exploration unit	Light exploration unit	Plants Names and structure Y1 Conditions for growing Y2	Habitats including simple food chains Y2 (Aquarium Trip)	OUTDOOR LEARNING Science trails resource book Some other examples Materials around school Vegetable plots Playground forces School Garden Garden Centre	
	A/B	Seasonal changes Y1 - weather, seasons, day and night, patterns, length of day					Weather watching Temperature records Seasonal walks	
	B 2021-22	My body Animals including humans Naming body parts Health and growth	Sound exploration unit	Uses and properties of everyday materials Y2	Animals including humans Naming body parts Y1 Health and growth Grouping and habitats Y2 (Little Zoo)	Healthy living – fitness trail Sound walk Farm/zoo/aquarium visit Pond School grounds		
Falcon	LKS 2 Nighthungales	A 2 1 2 2	Electricity Y4 Uses and how to wire a simple circuit	Light Y3 darkness, reflection, dangers, and shadows	Forces and Magnetism Y3	Animals, including humans - What animals need to survive, movement and skeleton Y3	Living things in their habitats Classification of living things, plants and animals and conservation Y4	Shadows High viz signs Day length monitoring Human sundial FS area/grounds Pond
		B	Humans Y4 Health Teeth and digestion Food chains	Sources of Sound Y4	Rocks including fossil formation and soil Y3 (Big Jurassic Coast, Wessex Archaeology)	Materials – states of matter particular attention to water Y4	Plants – requirements for growth, function of parts and life cycle Y3	Vegetable plots Water cycle Farm to Fork – Tesco Buildings trail around village
	UKS 2 Kestrels	A 2 1 2 2	Electricity Y6 Series circuit	Light Y6 Appears to travel in straight lines as explanation for effects	Forces Y5 Gravity friction air resistance levers pulleys and gears		Animals in their habitats life cycles, reproduction, growth, and old age, Animal classification Food chains	Browns Folly – woods habitat Pulleys Levers gears outdoors Creating wildlife habitats Measuring out stopping distances
		B	Humans Y6 health Circulatory system and blood	Sound Y4 pitch	Earth in space Y5 (Sirius Astronomy)	Materials – changes and properties Changes that form new materials Y5	Plants in their habitats Classification Parts of plants, reproduction	Evolution and inheritance Y6

APPENDIX 2

Our Science Principles

Effective Science learning takes place when...

-  Pupils and teachers are enthusiastic and engaged in learning activities and our curiosity is stimulated.
-  Children readily raise questions and are encouraged to ask and answer questions through research and hands on activities
-  Children's skills and knowledge are combined in practical hands on learning activities
-  Children are inspired find out more about their science learning independently or shared further with their parents and carers at home
-  Children deepen their understanding as learning is memorable and progress is made because teachers are clear about prior learning and next steps

- 🌸 Children and teachers make links to other areas of the curriculum and real-world applications and examples
- 🌸 Quality science resources, including visits, visitors, technology and the outdoors are accessible and used frequently
- 🌸 Science is celebrated throughout the school in e.g., Science week, displays and communications from school to the wider community – we share the AWE and WOW! of science
- 🌸 Children and teachers confidently communicate science thinking using appropriate science vocabulary