



Orchard Academy

Science Curriculum Overview



Why Teach Science?

We believe that Science will allow pupils to make informed decisions and choices throughout their lives. By fostering and maintaining a curiosity throughout their education, our pupils will be able to:

- Understand how the world around them works
- Adapt to a life in a modern world
- Experience and share the cultural capital that Science provides
- Show resilience when solving problems
- Decipher fact from fiction by learning how to look for reliable sources of information.

Working Scientifically

Our curriculum details the scientific enquiry skills involved in the processes of science, including an understanding that questions are fundamental alongside the design of experiments; reasoning and arguing with scientific evidence and analysing and interpreting data.

Asking Questions

Making Predictions

Setting up Tests

Observing and Measuring

Recording Data

Interpreting and Communicating Results

Evaluating

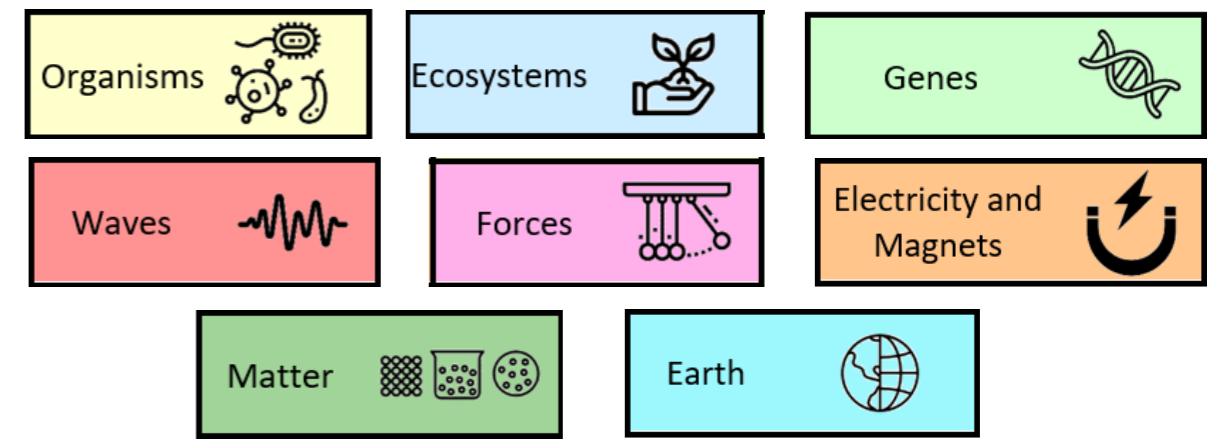
Key Vocabulary

'Rocket Words' are identified for each unit. These are displayed in a table so pupils and teachers can make connections and revisit vocabulary from previous years/units.

Science Rocket Words				
	Year 1	Year 2	Year 3	
Autumn 1	Animals including Humans (About Me)	Living Things and Their Habitats	Rocks	
	sense - sight, touch, smell, hearing	habitat	metamorphic rock	
	organs	desert	igneous rock	
	exercise	living	sedimentary rock	
	healthy	producer	extinct	
	design	root vegetable	weathering	
	baby	Food chain	acid rain	
	grow	excrete	fossil	
	bones	microhabitat	mineral	
	Autumn 2	Everyday Materials (Exploring)	Animals including Humans (Growth)	Animals including Humans (What Makes us)
flight		birth	skeleton	
structure		growth	tendon	
transparent		reproduction	ligament	
opaque		death	cartilage	
translucent		life cycle	involuntary muscles	
flexible		generation	voluntary muscles	
rigid		child	contract and relax	
oil		adult	vertebrae	
Spring 1		Everyday Materials (Uses)	Plants	Forces and Magnets
	magnet	germinate	lodestone	
	metal	nutrient	horseshoe magnet	

The 8 Big Ideas of the Science Curriculum

Curriculum maps detail the sequencing of substantive knowledge from the disciplines of biology, chemistry and physics to enable pupils to build schemata of important concepts over time through eight 'big ideas'



Each unit focuses on one or two of these big ideas. Knowledge relating to each of the big ideas is mapped progressively so that connections can be made to previous learning.

	Reception	Year 1	Year 2	Year 3	Year 4
Ecosystems	Explore the natural world, making observations and drawing pictures of animals and plants. Know some	Identify and name a variety of plants and explore their basic structure. Identify, name and explore the growth and care of animals.	Recognise the importance of a healthy lifestyle. Understand and observe the life cycle of a plant. Understand and identify the habitats of animals and their	Describe the life cycle of a plant, name key organs and what they do.	Construct and interpret food chains and recognise how environments can change, sometimes posing a danger to living things.

Assessment

Pupils' learning of the curriculum is assessed on an ongoing basis to monitor progress and identify the next steps in learning. In lessons, teachers check pupils can understand and remember the key knowledge and working scientifically skills built into the curriculum. Multiple choice quizzes are built into each unit to assess recall and understanding, these act as a diagnostic tool to inform teaching and provide pupils with feedback on their learning.

Scientific Enquiry Approaches used to develop Disciplinary Knowledge

Pattern Seeking
Identify patterns and look for relationships in enquiries where variables are difficult to control.

Observation Over Time
Observing changes that occur over a period of time ranging from minutes to months.

Research
Using secondary sources of information to answer scientific questions.

Identifying, Grouping and Classifying
Making observations to name, sort and organise items.

Comparative/Fair Testing
Changing one variable to see its effect on another, whilst keeping all others the same

Problem Solving
Applying prior scientific knowledge to find answers to problems.



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Science Curriculum Map – Term by Term



Science Big Ideas		Forces	Electricity and Magnets	Waves	Earth	Matter	Organisms	Ecosystems	Genes
		Year 3	Year 4	Year 5	Year 6				
Autumn 1	Rocks	States of Matter	Properties of Materials	Light					
	Animals Including Humans	Animals Including Humans	Changes of Materials	Looking After the Environment					
Spring 1	Forces and Magnets	Living Things and Their Habitats (Conservation)	Animals Including Humans (the Human Life Cycle)	Electricity					
	Plants	Living Things and Their Habitats	Living Things and Their Habitats	Animals Including Humans (The Heart and Health)					
Summer 1	Light	Sound	Earth and Space	Evolution and Inheritance					
	Scientific Enquiry	Electricity	Forces	Living Things and Their Habitats					

Every child deserves to be the best they can be