

(Science) Year 8 Long Term Plan

Rationale (with end points): In Year 8 pupils will continue to be taught essential aspects of the knowledge, methods, processes and further build on the scientific knowledge and literacy acquired in Year 7. This body of knowledge will be centred around 10 topics. In Year 8, pupils will learn more complex concepts. In biology, pupils will have learned the knowledge based on the topics of organisms, genes and ecosystems. Pupils will learn about breathing and digestion in humans, the different types of respiration and how plants make their own food by photosynthesis. Pupils will also develop their knowledge of genetic material and inheritance. In chemistry, pupils will have learned the knowledge based around the topics of matter, reactions and the earth. Here pupils will navigate their way around the periodic table and describe how elements are organised based on properties. Pupils learn about compounds and the energy changes related to chemical reactions. Pupils will build on the Earth knowledge gained in Year 7 and learn about greenhouse gases and human impact on the Earth. In physics, pupils will have learned the knowledge centred around the topics of forces, energy, waves and electromagnets. Here pupils will investigate Hooke's law and learn about pressure on solids and in fluids. Pupils will continue to learn about electric circuits but linked to magnetism to make electromagnets. Other important concepts that will be learned are work done and heating and cooling for energy and longitudinal and transverse waves in the waves topic.

Term	Topic	Knowledge	Skills	Reading /wider reading
Autumn term 1	<ul style="list-style-type: none"> Organisms 2 Matter 2 	<ul style="list-style-type: none"> Breathing Digestion Periodic Table Elements 	<ul style="list-style-type: none"> Practical Skills – Experimental Method Graphical Skills – Graphs & Data Tables Data analysis – Trends and Patterns Practical Skills – Making Polymers 	Wider Reading 1: Selected Article (Scientific Paper/Magazine)
Autumn 2	<ul style="list-style-type: none"> Reteach Week 1 Forces 2 Genes 2 	<ul style="list-style-type: none"> Contact Forces Pressure Evolution Inheritance 	<ul style="list-style-type: none"> Mathematical Skills – Calculations Practical Skills – Pressure Practical Skills – Extracting DNA 	Wider Reading 2: Selected Article (Scientific Paper/Magazine)

			<ul style="list-style-type: none"> Extended Writing Skills – Natural Selection of Peppered Moth 	
Spring 1	<ul style="list-style-type: none"> Reteach Week 2 Reactions 2 Energy 2 	<ul style="list-style-type: none"> Types of Reactions Chemical Energy Work Heating and Cooling 	<ul style="list-style-type: none"> Extended Writing Skills – Evaluate fuels Practical Skills – Temperature Changes Mathematical Skills – Energy Calculations 	Wider Reading 3: Selected Article (Scientific Paper/Magazine)
Spring 2	<ul style="list-style-type: none"> Reteach Week 3 Ecosystems 2 Earth 2 	<ul style="list-style-type: none"> Respiration Photosynthesis Climate 	<ul style="list-style-type: none"> Mathematical Skills – Work done Practical Skills – Experimental Method 	Wider Reading 4: Selected Article (Scientific Paper/Magazine)
Summer 1	<ul style="list-style-type: none"> Earth 2 Reteach Week 4 Waves 2 	<ul style="list-style-type: none"> Earth Resources Wave Effects Wave Properties 	<ul style="list-style-type: none"> Extended Writing Skills – Human Activities Analysing/Evaluation Skills – Recycling Methods 	Wider Reading 5: Selected Article (Scientific Paper/Magazine)
Summer 2	<ul style="list-style-type: none"> Electromagnets 2 Reteach Week 5 	<ul style="list-style-type: none"> Magnetism Electromagnets 	<ul style="list-style-type: none"> Practical Skills – Prisms Practical Skills – Strength of electromagnets 	Wider Reading 6: Selected Article (Scientific Paper/Magazine)