

PHYSICS 5 Year curriculum Overview



Broader concepts:	
Energy Electricity	Particles and states of matter Space
Skills:	Knowledge:
<p><u>Choose</u> correct answers</p> <p><u>Complete</u> diagrams and descriptions</p> <p><u>Write / Give</u> short answers using key words</p> <p><u>Measure</u> volumes, masses and temperatures</p> <p><u>Name</u> processes and appliances</p> <p><u>Sketch</u> accurate diagrams</p>	<p>Different energy stores, the methods by which energy is transferred. Circuit symbols, current, voltage and resistance.</p> <p>How particles move and behave during changes of state. How to calculate density.</p> <p>Our solar system and star lifecycles.</p>
Recall:	
<p>From KS2</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit and use recognised symbols when representing a simple circuit in a diagram.</p>	

Broader concepts:	
Electric charges, states of matter, energy stores, magnets, and forces.	
Skills:	Knowledge:
<p>Carry out <u>multistep calculations</u>, that can include <u>converting</u> units of measurement</p> <p><u>Predicting</u> the outcomes of investigations using understanding of physical processes.</p> <p><u>Planning</u> methods to obtain valid results..</p> <p><u>Plotting</u> scatter graphs and <u>drawing</u> lines of best fit.</p> <p><u>Describing</u> patterns shown by collected data.</p>	<p>The focus is on the relationships between energy stores and the mechanisms/ forces that transfer the energy.</p>
Recall:	
<p>This year builds on content and skills from Y7 and Y8. Notably; Different energy stores, the methods by which energy is transferred. Circuit symbols, current, voltage and resistance. How particles move and behave during changes of state. How to calculate density.</p>	

Broader concepts:	
Magnets and Electromagnets	The Solar System.
Skills:	Knowledge:
<p>Clearly <u>show</u> how you have carried out multistep <u>calculations</u>.</p> <p><u>Evaluate</u> experiments and processes</p> <p>Produce detailed <u>explanations</u> of processes</p> <p>Produce detailed <u>descriptions</u> of data.</p> <p><u>Comparing</u> processes, structures and data</p> <p><u>Suggest</u> how core physics content links to new and unfamiliar situations.</p>	<p>Link the properties of magnets and magnetic fields to their potential uses such as microphones and speakers.</p> <p>Explain the lifecycle of stars and how fusion within stars has created all the known elements.</p> <p>Explain what the red shift is and how it links to the Big Bang Theory.</p>
Recall:	
<p>This year builds on content and skills from Y7, Y8, Y9 and Y10. Notably; Our solar system and star lifecycles. Drawing magnetic fields and making electromagnets. The second half of the year will focus on bringing together all of the content and skills developed during Y7-Y11</p>	

Broader concepts:	
Atomic Structure and radiation Waves	Forces Magnetism
Skills:	Knowledge:
<p><u>Calculating</u> mean averages and percentages.</p> <p><u>Describing</u> how forces interact and how waves transfer energy.</p> <p>Accurately <u>defining</u> key physical terminology.</p> <p><u>Plotting</u> scatter graphs and bar charts.</p>	<p>The structure of atoms and isotopes, the different types of radiation.</p> <p>How forces interact to affect motion.</p> <p>The different types of wave and use terms such as wavelength and frequency.</p> <p>Drawing magnetic fields and making electromagnets.</p>
Recall:	
<p>This year will recover the skills developed in Y7 and from KS2</p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object □ identify the effects of air resistance, water resistance and friction, that act between moving surfaces □ recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</p>	

Broader concepts:	
Radiation and atomic structure Wave Characteristics and the electromagnetic spectrum	Forces and Motion
Skills:	Knowledge:
<p>Use data from graphs and tables to carry out multistep <u>calculations</u></p> <p><u>Evaluate</u> experiments and processes</p> <p>Produce detailed <u>explanations</u> of processes</p> <p>Produce detailed <u>descriptions</u> of data.</p> <p><u>Comparing</u> processes, structures and data</p>	<p>Understand how experiments have enabled us to further our understanding of atomic structure and the properties, dangers and uses of radiation.</p> <p>Explain how forces transfer energy between stores and understand how this impacts on motion.</p> <p>Be able to classify waves according to their properties. Understand how waves behave during reflection and refraction.</p>
Recall:	
<p>This year builds on content and skills from Y7, Y8 and Y9. Notably; The structure of atoms and isotopes, the different types of radiation. How forces interact to affect motion. The different types of wave and use terms such as wavelength and frequency.</p>	

