

Boardworks KS3 Science

Physics

	Programme of Study	Boardworks presentation
1. Key concepts	1.1 Scientific thinking	
	a. Using scientific ideas and models to explain phenomena and developing them creatively to generate and test theories.	<ul style="list-style-type: none"> • <i>Current and Voltage (slides 4-5, 26, worksheet 1)</i> • <i>Forces and Gravity (slides 20-26, 45, 48)</i> • <i>Heating and Cooling (slide 7, worksheet 2)</i> • <i>Light (slide 22)</i> • <i>Sound and Hearing (slides 5, 19)</i> • <i>Space (slides 21, 33)</i> • <i>Using Electricity (slide 4)</i> • <i>Pressure and Moments (worksheet 1)</i>
	b. Critically analysing and evaluating evidence from observations and experiments.	<ul style="list-style-type: none"> • <i>Current and Voltage (slides 14, 17, 32)</i> • <i>Forces and Gravity (slides 7, 28)</i> • <i>Heating and Cooling (sides 10, 36, worksheet 1, worksheet 3)</i> • <i>Light (slides 14, 20, worksheet 2)</i> • <i>Magnets and Electromagnets (slides 6, 25-27, worksheet 1, worksheet 2)</i> • <i>Sound and Hearing (slides 16, 20, 25, worksheet 1)</i> • <i>Pressure and Moments (worksheet 2)</i> • <i>Speed (worksheet 1)</i>
	1.2 Applications and implications of science	
	a. Exploring how the creative application of scientific ideas can bring about technological developments and consequent changes in the way people think and behave.	<ul style="list-style-type: none"> • <i>Energy Resources (slides 30-35)</i> • <i>Physics Around Us (slides 4-20)</i> • <i>Sound and Hearing (slides 32-33, 36)</i> • <i>Using Electricity (slides 19-21)</i>

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	<p>b. Examining the ethical and moral implications of using and applying science.</p>	<ul style="list-style-type: none"> • <i>Energy Resources (slides 19-20, 31, worksheet 2)</i> • <i>Physics Around Us (slide 3)</i> • <i>Sound and Hearing (slides 32-33)</i> • <i>Space (slide 44)</i> • <i>Using Electricity (slides 19-21, worksheet 2)</i>
1.3 Cultural understanding		
	<p>a. Recognising that modern science has its roots in many different societies and cultures, and draws on a variety of valid approaches to scientific practice.</p>	<ul style="list-style-type: none"> • <i>Magnets and Electromagnets (slide 3)</i> • <i>Physics Around Us (slide 12)</i> • <i>Space (slide 33)</i>
1.4 Collaboration		
	<p>a. Sharing developments and common understanding across disciplines and boundaries.</p>	

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2. Key processes	Programme of Study	Boardworks presentation	
	2.1 Practical and enquiry skills	<p>a. Use a range of scientific methods and techniques to develop and test ideas and explanations.</p>	<ul style="list-style-type: none"> • <i>Current and Voltage (slides 13, 16, 27-30)</i> • <i>Energy Resources (slide 29)</i> • <i>Forces and Gravity (slide 43, worksheet 2)</i> • <i>Heating and Cooling (slides 9-10, 15-16, 34-35, worksheet 1, worksheet 3)</i> • <i>Light (slides 14, 20, worksheet 2)</i> • <i>Magnets and Electromagnets (slides 6, 23-24, worksheet 1, worksheet 2)</i> • <i>Sound and Hearing (slides 14-15, 23-24, worksheet 1)</i> • <i>Pressure and Moments (worksheet 2)</i> • <i>Space (worksheet 2)</i> • <i>Speed (worksheet 1)</i> • <i>Using Electricity (worksheet 2)</i>
	<p>b. Assess risk and work safely in the laboratory, field and workplace.</p>	<ul style="list-style-type: none"> • <i>Heating and Cooling (worksheet 1)</i> 	
	<p>c. Plan and carry out practical and investigative activities, both individually and in groups.</p>	<ul style="list-style-type: none"> • <i>Heating and Cooling (slide 9, worksheet 1)</i> • <i>Magnets and Electromagnets (slides 6, 24, worksheet 1, worksheet 2)</i> • <i>Pressure and Moments (worksheet 2)</i> • <i>Sound and Hearing (slide 24, worksheet 1)</i> • <i>Speed (worksheet 1)</i> 	
2.2 Critical understanding of evidence	<p>a. Obtain, record and analyse data from a wide range of primary and secondary sources, including ICT sources, and use their findings to provide evidence for scientific explanations.</p>	<ul style="list-style-type: none"> • <i>Current and Voltage (slides 14, 17, 32)</i> • <i>Forces and Gravity (slides 7, 28)</i> • <i>Heating and Cooling (sides 10, 36, worksheet 1, worksheet 3)</i> • <i>Light (slides 14, 20, worksheet 2)</i> • <i>Magnets and Electromagnets (slides 6, 25-27, worksheet 1, worksheet 2)</i> • <i>Sound and Hearing (slides 16, 20, 25, worksheet 1)</i> 	

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		<ul style="list-style-type: none"> • <i>Pressure and Moments (worksheet 2)</i> • <i>Speed (worksheet 1)</i>
	b. Evaluate scientific evidence and working methods.	<ul style="list-style-type: none"> • <i>Space (slides 30, 40-44)</i> • <i>Magnets and Electromagnets (worksheet 2)</i> • <i>Sound and Hearing (worksheet 1)</i> • <i>Speed (worksheet 1)</i>
	2.3 Communication	
	a. Use appropriate methods, including ICT, to communicate scientific information and contribute to presentations and discussions about scientific issues.	<ul style="list-style-type: none"> • <i>Space (worksheet 2)</i> • <i>Using Electricity (worksheet 2)</i>

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3. Range and content	Programme of Study	Boardworks presentation
	3.1 Energy, electricity and forces	
	a. Energy can be transferred usefully, stored, or dissipated, but cannot be created or destroyed.	<ul style="list-style-type: none"> • <i>Energy Resources</i> • <i>Heating and Cooling</i> • <i>Light</i> • <i>Sound and Hearing</i>
	b. forces are interactions between objects and can affect their shape and motion	<ul style="list-style-type: none"> • <i>Forces and Gravity</i> • <i>Magnets and Electromagnets</i> • <i>Pressure and Moments</i> • <i>Speed</i>
	c. electric current in circuits can produce a variety of effects.	<ul style="list-style-type: none"> • <i>Current and Voltage</i> • <i>Magnets and Electromagnets</i> • <i>Using Electricity</i>
	3.2 Chemical and material behaviour – NA	
	3.3 Organisms, behaviour and health – NA	
	3.4 The environment, Earth and universe	
	a.	NA
	b. Astronomy and space science provide insight into the nature and observed motions of the sun, moon, stars, planets and other celestial bodies.	<ul style="list-style-type: none"> • <i>Space</i>
	c.	NA

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4. Curriculum opportunities	Programme of Study	Boardworks presentation
	a. Research, experiment, discuss and develop arguments.	<i>Embedded throughout product</i>
	b. Pursue an independent enquiry into an aspect of science of personal interest.	
	c. Use real-life examples as a basis for finding out about science.	<i>Embedded throughout product</i>
	d. Study science in local, national and global contexts, and appreciate the connections between these.	
	e. Experience science outside the school environment, including in the workplace, where possible.	<ul style="list-style-type: none"> • <i>Physics Around Us</i>
	f. Use creativity and innovation in science, and appreciate their importance in enterprise.	
	g. Recognise the importance of sustainability in scientific and technological developments.	<ul style="list-style-type: none"> • <i>Physics Around Us</i>
	h. Explore contemporary and historical scientific developments and how they have been communicated.	<ul style="list-style-type: none"> • <i>Energy Resources (slide 31)</i> • <i>Forces and Gravity (slides 22-23)</i> • <i>Magnets and Electromagnets (slide 3)</i> • <i>Space (slide 33, 37)</i>