

# Boardworks KS3 Science

## Chemistry

	Programme of Study	Boardworks presentation
<b>1. Key concepts</b>	<b>1.1 Scientific thinking</b>	
	a. Using scientific ideas and models to explain phenomena and developing them creatively to generate and test theories.	<ul style="list-style-type: none"> <li>• <i>Atoms, Elements and the Periodic Table (slides 8, 13, 15, 16, 27)</i></li> <li>• <i>Chemical Reactions (Part 1) (slides 30-35)</i></li> <li>• <i>Chemical Reactions (Part 2) (slides 5, 6, 24, 27)</i></li> <li>• <i>Mixtures and Solutions (slides 12-14, 21, 37)</i></li> <li>• <i>Reactions of Acids (slide 7)</i></li> <li>• <i>Reactivity and the Reactions of Metals (slides 4, 7, 21)</i></li> <li>• <i>Rocks and Weathering (slides 16, 18, 24, 34)</i></li> <li>• <i>Solids, Liquids and Gases (slides 7, 9, 13, 26, 29)</i></li> <li>• <i>The Rock Cycle (slide 29)</i></li> </ul>
	b. Critically analysing and evaluating evidence from observations and experiments.	<ul style="list-style-type: none"> <li>• <i>Acids and Alkalis (slides 15, 21, 24, worksheet 1, worksheet 2)</i></li> <li>• <i>Chemical Reactions (Part 1) (slides 31, 33, 35)</i></li> <li>• <i>Chemical Reactions (Part 2) (slides 5, 6, 24, 27)</i></li> <li>• <i>Metals and Non-Metals (slide 5)</i></li> <li>• <i>Mixtures and Solutions (slide 39)</i></li> <li>• <i>Reactions of Acids (slides 7, 10, 23)</i></li> <li>• <i>Reactivity and the Reactions of Metals (slides 4, 7, 21)</i></li> <li>• <i>Rocks and Weathering (slide 34)</i></li> <li>• <i>Solids, Liquids and Gases (slides 9, 13, 26, 29)</i></li> <li>• <i>The Rock Cycle (slide 29)</i></li> </ul>

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<b>1.2 Applications and implications of science</b>	
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"> <li>• <i>Acids and Alkalis (slide 7)</i></li> <li>• <i>Chemistry Around Us (slide 24)</i></li> <li>• <i>Metals and Non-Metals (slides 21, 25-27)</i></li> <li>• <i>Reactions of Acids (slides 37-43)</i></li> </ul>
b. Examining the ethical and moral implications of using and applying science.	<ul style="list-style-type: none"> <li>• <i>Acids and Alkalis (slide 7)</i></li> <li>• <i>Chemical Reactions (Part 2) (slide 33)</i></li> <li>• <i>Chemistry Around Us (slides 12-25)</i></li> <li>• <i>Metals and Non-Metals (slides 25-27)</i></li> <li>• <i>Reactions of Acids (slides 37-43)</i></li> </ul>
<b>1.3 Cultural understanding</b>	
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.	<ul style="list-style-type: none"> <li>• <i>Atoms, Elements and the Periodic Table (slides 8, 13, 27)</i></li> <li>• <i>Metals and Non-Metals (slide 21)</i></li> <li>• <i>Reactivity and the Reactions of Metals (slide 10)</i></li> </ul>
<b>1.4 Collaboration</b>	
a. Sharing developments and common understanding across disciplines and boundaries.	<ul style="list-style-type: none"> <li>• <i>Atoms, Elements and the Periodic Table (slides 8, 13, 15, 16, 27)</i></li> <li>• <i>Chemistry Around Us (slides 23-25)</i></li> <li>• <i>Mixtures and Solutions (slide 40)</i></li> <li>• <i>Reactions of Acids (slide 41)</i></li> </ul>

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2. Key processes	<b>Programme of Study</b>	<b>Boardworks presentation</b>	
	<b>2.1 Practical and enquiry skills</b>	a. Use a range of scientific methods and techniques to develop and test ideas and explanations.	<ul style="list-style-type: none"> <li>• <i>Acids and Alkalis (worksheet 1)</i></li> <li>• <i>Chemical Reactions (Part 1) (slides 30-35)</i></li> <li>• <i>Chemical Reactions (Part 2) (worksheet 2)</i></li> <li>• <i>Metals and Non-Metals (slide 5)</i></li> <li>• <i>Reactivity and the Reactions of Metals (slides 4, 21)</i></li> <li>• <i>Rocks and Weathering (slides 19, 34)</i></li> <li>• <i>Solids, Liquids and Gases (slides 9, 13, 26, 29)</i></li> </ul>
	b. Assess risk and work safely in the laboratory, field and workplace.	<ul style="list-style-type: none"> <li>• <i>Acids and Alkalis (slides 6, 9)</i></li> <li>• <i>Chemical Reactions (slides 3-6)</i></li> <li>• <i>Compounds (slide 13)</i></li> <li>• <i>Reactivity and the Reactions of Metals (slide 13)</i></li> </ul>	
	c. Plan and carry out practical and investigative activities, both individually and in groups.	<ul style="list-style-type: none"> <li>• <i>Acids and Alkalis (worksheet 1)</i></li> </ul>	
	<b>2.2 Critical understanding of evidence</b>		
	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.	<ul style="list-style-type: none"> <li>• <i>Chemical Reactions (worksheet 1)</i></li> <li>• <i>Chemistry Around Us (slides 19, 20)</i></li> </ul>	
	b. Evaluate scientific evidence and working methods.	<ul style="list-style-type: none"> <li>• <i>Chemistry Around Us (slides 19, 20)</i></li> <li>• <i>Mixtures and Solutions (worksheet 1)</i></li> <li>• <i>Reactivity and the Reactions of Metals (worksheet 1)</i></li> </ul>	
	<b>2.3 Communication</b>		
	a. Use appropriate methods, including ICT, to communicate scientific information and contribute to presentations and discussions about scientific issues.		

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<b>3. Range and content</b>	<b>Programme of Study</b>	<b>Boardworks presentation</b>
	<b>3.1 Energy, electricity and forces – NA</b>	
	<b>3.2 Chemical and material behaviour</b>	
	a. The particle model provides explanations for the different physical properties and behaviour of matter.	<ul style="list-style-type: none"> <li>• <i>Solids, Liquids and Gases</i></li> </ul>
	b. Elements consist of atoms that combine together in chemical reactions to form compounds.	<ul style="list-style-type: none"> <li>• <i>Solids, Liquids and Gases</i></li> <li>• <i>Atoms, Elements and the Periodic Table</i></li> <li>• <i>Compounds</i></li> <li>• <i>Mixtures and Solutions</i></li> </ul>
	c. Elements and compounds show characteristic chemical properties and patterns in their behaviour.	<ul style="list-style-type: none"> <li>• <i>Solids, Liquids and Gases</i></li> <li>• <i>Atoms, Elements and the Periodic Table</i></li> <li>• <i>Compounds</i></li> <li>• <i>Mixtures and Solutions</i></li> </ul>
	<b>3.3 Organisms, behaviour and health – NA</b>	
	<b>3.4 The environment, Earth and universe</b>	
	a. geological activity is caused by chemical and physical processes	<ul style="list-style-type: none"> <li>• <i>Rocks and Weathering</i></li> <li>• <i>The Rock Cycle</i></li> </ul>
	b.	<b>NA</b>
	c.	<b>NA</b>

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<b>4. Curriculum opportunities</b>	<b>Programme of Study</b>	<b>Boardworks presentation</b>
	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.	<ul style="list-style-type: none"> <li>• <i>Chemistry Around Us</i></li> <li>• <i>Metals and Non-Metals</i></li> <li>• <i>Reactions of Acids</i></li> </ul>
	e. Experience science outside the school environment, including in the workplace, where possible.	<ul style="list-style-type: none"> <li>• <i>Chemistry Around Us</i></li> <li>• <i>Metals and Non-Metals</i></li> <li>• <i>Reactions of Acids</i></li> <li>• <i>Rocks and Weathering</i></li> <li>• <i>The Rock Cycle</i></li> </ul>
	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"> <li>• <i>Chemistry Around Us</i></li> <li>• <i>Metals and Non-Metals</i></li> <li>• <i>Reactions of Acids</i></li> </ul>
	h. Explore contemporary and historical scientific developments and how they have been communicated.	<ul style="list-style-type: none"> <li>• <i>Atoms, Elements and the Periodic Table (slides 8, 27)</i></li> <li>• <i>Metals and Non-Metals (slide 21)</i></li> <li>• <i>Reactivity and the Reactions of Metals (slide 10)</i></li> </ul>