

## Year 8 Curriculum Map : Chemistry

	Autumn	Spring	Summer
<b>Assessment Objectives</b>	<b>AO1</b> - Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures (40%) <b>AO2</b> - Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. (40%) <b>AO3</b> - Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures. (20%)		
<b>Unit Length</b>	<b>Topic:</b> C4 The periodic table - 15 lessons.	<b>Topic:</b> C5 Chemical reactions 2 – 16 lessons.	<b>Topic:</b> C6 The earth and atmosphere 15 lessons.
<b>Key Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. What is the structure of the atom?</li> <li>2. What are the key features of the periodic table?</li> <li>3. How did the periodic table develop?</li> <li>4. What are physical and chemical properties of substances?</li> <li>5. What are the properties of metals and non metals?</li> <li>6. How are electrons arranged in an atom?</li> <li>7. Progress assessment</li> <li>8. What are the key properties of group 1 and how do these elements react?</li> <li>9. What are the key properties of group 7 and how do these elements react?</li> <li>10. What happens in a displacement reaction and why?</li> <li>11. What are the key properties of group 0 elements and how do these elements react?</li> <li>12. Revision</li> <li>13. Assessment</li> <li>14. Reteach</li> <li>15. DIRT</li> </ol>	<ol style="list-style-type: none"> <li>1. What are the hazards of acids and alkalis?</li> <li>2. What happens in a neutralisation reaction?</li> <li>3. How can we make copper sulphate?</li> <li>4. Problem solver</li> <li>5. What happens in reactions between metals and acids?</li> <li>6. What happens in reactions between metals and water?</li> <li>7. What happens in reactions between metals and oxygen?</li> <li>8. How and why are metals displaced in compound?</li> <li>9. Progress assessment</li> <li>10. What methods can we use to extract a range of metals from compounds?</li> <li>11. What is collision theory?</li> <li>12. How can we speed up the rate of a chemical reaction?</li> <li>13. Revision</li> <li>14. Assessment</li> <li>15. Reteach</li> <li>16. DIRT</li> </ol>	<ol style="list-style-type: none"> <li>1. What does the structure of the earth look like?</li> <li>2. What are the three types of rock and how are they formed?</li> <li>3. Which conditions produce the largest crystals in igneous rock?</li> <li>4. How does rock cycle between different types?</li> <li>5. What is combustion?</li> <li>6. What is the carbon cycle and what processes release and take in carbon?</li> <li>7. Progress assessment</li> <li>8. How has the earth's atmosphere changed over the last 200 million years?</li> <li>9. What is climate change?</li> <li>10. What are the effects of climate change?</li> <li>11. What is sustainability and why do we need to recycle?</li> <li>12. Revision</li> <li>13. Assessment</li> <li>14. Reteach</li> <li>15. DIRT</li> </ol>

<p><b>Prior knowledge</b></p>	<p><b>SCIENCE</b>  <b>Working Scientifically Skills:</b></p> <p><b>Dangers, observe evaporation.</b></p> <p><b>Scientific content:</b></p> <p><b>Year 7:</b></p> <p>The difference between chemical and physical changes  Differences between atoms, elements and compounds  Chemical symbols and formulae for elements and compounds  Conservation of mass chemical reactions  Word equations</p> <p><b>Year 5:</b></p> <p>Is able to describe a materials physical properties (hardness, solubility, transparency, conductivity, magnetism).  Demonstrates an understanding of reversible and irreversible changes.</p> <p><b>Year 2:</b></p> <p>Is able to name the materials that make up objects around me.  Has the ability to compare the properties of some materials.  Demonstrates the ability to compare the suitability of everyday materials for particular uses (e.g. wool for jumpers/rubber for soles of shoes).</p> <p><b>Year 1:</b></p> <p>Has the ability to identify and name everyday materials.  Is able to describe what an object is made from.</p>	<p><b>All years (1→)</b>  Working scientifically</p> <p><b>Year 6</b></p> <p>Is beginning to understand the difference between reversible and irreversible change.</p> <p><b>Year 7</b>  <b><u>C3 Chemical reactions</u></b></p> <ul style="list-style-type: none"> <li>• The difference between chemical and physical changes</li> <li>• Differences between atoms, elements and compounds</li> <li>• Chemical symbols and formulae for elements and compounds</li> <li>• Conservation of mass chemical reactions</li> <li>• Word equations</li> </ul>	<p><b>SCIENCE</b>  <b>Working Scientifically Skills:</b></p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.  Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b>Scientific content</b></p> <p><b>Year 1:</b></p> <p>Can identify and name everyday materials.  Can describe what an object is made from.  Can describe the physical properties of everyday materials using some scientific words (e.g. hard/shiny/bendy/ transparent).  Can independently sort and group objects by their physical properties.</p> <p><b>Year 2:</b></p> <p>Can identify and compare the suitability of a variety of everyday materials.</p> <p><b>Year 3:</b></p> <p>Can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.  Can describe in simple terms how fossils are formed when things that have lived are trapped within rock.  Can recognise that soils are made from rocks and organic matter.</p> <p><b>Year 4:</b></p> <p>Can recognise that environments can change and that this can sometimes pose dangers to living things.</p>
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	Is able to describe the physical properties of everyday materials using some scientific words (e.g. hard/ shiny/bendy/transparent). Has the ability to independently sort and group objects by their physical properties.		
<b>CEIAG Specific careers links</b>	Chemist Pharmacist Pharmacology	Chemist Chemical engineer	Meteorologist. Astro naught Seismologist. Particle physicist Research analyst Metallurgist
<b>RRSA</b>	Article 14: Freedom of thought, belief and religion Article 24: Health and the Health services Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living	Article 14: Freedom of thought, belief and religion Article 24: Health and the Health services Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living	Article 14: Freedom of thought, belief and religion Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living
<b>Cross curricular links</b>	Chemistry – States of matter, atoms, elements and compounds. Chemical reactions etc. Technology – Substances and materials History – development of the periodic table and development and discoveries in science.	Numeracy- Maths Biology – collision theory and enzymes	Seismic waves, structure of the earth and formation of rock – Geography.
<b>Useful websites/ videos</b>	The periodic table song : <a href="https://www.youtube.com/watch?v=rz4Dd1I_fX0">https://www.youtube.com/watch?v=rz4Dd1I_fX0</a>  Fuse school The periodic table: <a href="https://www.youtube.com/watch?v=5SmqluhAMA0">https://www.youtube.com/watch?v=5SmqluhAMA0</a>	Brainiac alkali metals and water: <a href="https://www.youtube.com/watch?v=m55kgyApYrY">https://www.youtube.com/watch?v=m55kgyApYrY</a>  11 Chemical reaction demos: <a href="https://www.youtube.com/watch?v=8vyboVwyzfU">https://www.youtube.com/watch?v=8vyboVwyzfU</a>	Structure of the Earth: <a href="https://www.youtube.com/watch?v=WjXSCumeqxo">https://www.youtube.com/watch?v=WjXSCumeqxo</a>  BBC Bitesize structure of the Earth: <a href="https://www.bbc.co.uk/bitesize/guides/z79mtv4/revision/1">https://www.bbc.co.uk/bitesize/guides/z79mtv4/revision/1</a>

	<p>Will the periodic table ever be complete?  <a href="https://www.youtube.com/watch?v=w_GZzOJcWR4">https://www.youtube.com/watch?v=w_GZzOJcWR4</a></p>	<p>Chemical reactions in everyday life:  <a href="https://www.youtube.com/watch?v=QVUehtA3WHQ">https://www.youtube.com/watch?v=QVUehtA3WHQ</a></p>	
<b>Wider Reading</b>	<ul style="list-style-type: none"> <li>- <a href="https://www.bbc.co.uk/bitesize/guides/z84wjxs/revision/1">https://www.bbc.co.uk/bitesize/guides/z84wjxs/revision/1</a></li> <li>- <a href="https://www.wired.com/2009/09/the-development-of-the-atomic-model/">https://www.wired.com/2009/09/the-development-of-the-atomic-model/</a></li> <li>- <a href="https://www.rsc.org/periodic-table/history/about">https://www.rsc.org/periodic-table/history/about</a></li> </ul> <p><a href="https://www.theguardian.com/science/grrlscientist/2013/may/10/1">https://www.theguardian.com/science/grrlscientist/2013/may/10/1</a></p>	<p>Revision oak lessons:  <a href="http://www.thenational.academy">Unit - Oak National Academy (thenational.academy)</a></p> <p><a href="#">Chemical reactions - Types of reaction - KS3 Chemistry Revision - BBC Bitesize</a></p> <p>What chemical reactions are used in industry?  <a href="https://www.wazeesupperclub.com/what-chemical-reactions-are-used-in-industry/#:~:text=What%20chemical%20reactions%20are%20used%20in%20industry%3F%20Synthesis,ammonia.%20Combustion%20of%20hydrogen%20%2F%20Electrolysis%20of%20water.">https://www.wazeesupperclub.com/what-chemical-reactions-are-used-in-industry/#:~:text=What%20chemical%20reactions%20are%20used%20in%20industry%3F%20Synthesis,ammonia.%20Combustion%20of%20hydrogen%20%2F%20Electrolysis%20of%20water.</a></p>	<p><b>Layers of the atmosphere:</b>  <a href="https://www.youtube.com/watch?v=Y0AOgfPkog">https://www.youtube.com/watch?v=Y0AOgfPkog</a></p> <p><b>What would the journey to the core be like?:</b>  <a href="https://www.youtube.com/watch?v=3FoSAHk7DMA">https://www.youtube.com/watch?v=3FoSAHk7DMA</a></p> <p><b>What is sustainable development?</b>  <a href="https://www.youtube.com/watch?v=7V8oFI4GYMY">https://www.youtube.com/watch?v=7V8oFI4GYMY</a></p>
<b>Literacy Programme</b>	<ul style="list-style-type: none"> <li>• Decode it NOW</li> <li>• Guided practice/model answers</li> <li>• Sentence Starters</li> <li>• Writing strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Decode it NOW</li> <li>• Guided practice/model answers</li> <li>• Sentence Starters</li> <li>• Writing strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Decode it NOW</li> <li>• Guided practice/model answers</li> <li>• Sentence Starters</li> <li>• Writing strategies</li> </ul>
<b>Independent Learning Tasks</b>	<p>Mind-map revision homework  Retrieval practice homework  Knowledge Organiser practice Questions.  Selective reading activity.  Points grid ILT.</p>	<p>Mind-map revision homework  Retrieval practice homework  Knowledge Organiser practice Questions.  Selective reading activity.  Points grid ILT.</p>	<p>Mind-map revision homework  Retrieval practice homework  Knowledge Organiser practice Questions.  Selective reading activity.  Points grid ILT.</p>