

Year 7 Curriculum Map : Chemistry

	Autumn	Spring	Summer
Assessment Objectives	AO1 - Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures (40%) AO2 - Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. (40%) AO3 - Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures. (20%)		
Unit Length	Topic: C1 Particles - 16 lessons.	Topic: C2 Separation techniques – 12 lessons.	Topic: C3 Chemical reactions 13 lessons.
Key Learning Outcomes	1. How can we stay safe in the lab? 2. How do we use Bunsen burners safely? 3. What is the particle model? 4. How do particles in different states of matter act? 5. How do particles act during melting and freezing? 6. How do particles act when during boiling? 7. Explain how particles evaporate and condense. 8. Progress assessment 9. How do particles react in diffusion? 10. What is Brownian's motion? 11. How do gases exert pressure? 12. <u>Revision</u> 13. <u>End of unit assessment</u> 14. <u>Reteach</u> 15. <u>DIRT</u>	1. What is purity? 2. How to use key words and terms in this topic? 3. What are the misconceptions in solubility? 4. How separate substances by filtration? 5. How do I plan and conduct an investigation into solubility? 6. How does chromatography separate mixtures? 7. Progress assessment 8. What is distillation? 9. <u>Revision</u> 10. <u>End of unit assessment</u> 11. <u>Reteach</u> 12. <u>DIRT</u>	1. <u>What are chemical and physical reactions?</u> 2. <u>What is the difference between an atom, element, and compound?</u> 3. <u>How can we describe substances using their properties?</u> 4. <u>How can we use word equations to represent chemical reactions?</u> 5. <u>How can we use symbol equations to represent chemical reactions?</u> 6. <u>What are the signs of a chemical reaction?</u> 7. <u>Progress assessment</u> 8. <u>What is conservation of mass and how can we show this in a reaction?</u> 9. <u>What is an exothermic and endothermic reaction?</u> 10. <u>Revision</u> 11. <u>End of unit assessment</u> 12. <u>Reteach</u> 13. <u>DIRT</u>
Prior knowledge	Year 6: (2d) Is able to describe solids, liquids and gases based on their molecular structures. (3a) Is beginning to understand the difference between reversible and irreversible change.	Year 7 C1: What are particles and the particle model States of matter Year 5/6 Dissolving sugar in water during the solutions topics	SCIENCE Working Scientifically Skills: C1 and C2 Scientific content: KS2 Year 1

	<p>Year 5:</p> <p>Year 4: (2a-b) Has the ability to group materials into solids, liquids and gases and compare their properties.</p> <p>(3a-f) Is able to describe physical changes when materials are heated or cooled and can state the temperature that these changes occur (e.g. freezing and boiling points of water).</p>	<p>Scientific content:</p> <p>Year 6: 5) Is able to decide how best to separate a mixture through 5a) filtration, 5c) distillation or 5b) evaporation.</p> <p>5) Shows an understanding that a solute can be retrieved from a solvent and can suggest how to do this.</p> <p>Year 5: 3a) Demonstrates an understanding that some materials dissolve in liquid to form a solution.</p> <p>5) Is able to separate a mixture by 5a) filtration and 5c) distillation.</p>	<p>Is able to describe the physical properties of everyday materials using some scientific words (e.g. hard/ shiny/bendy/transparent).</p> <p>Has the ability to independently sort and group objects by their physical properties. KS2 Year 4 Is able to describe physical changes when materials are heated or cooled and can state the temperature that these changes occur (e.g. freezing and boiling points of water). KS2 Year 5 Demonstrates an understanding of reversible and irreversible changes. KS2 Year 6 Is beginning to understand the difference between reversible and irreversible change.</p>
CEIAG Specific careers links	All careers in science require an understanding of particles and how they react.	Meteorologist. Astro naught Seismologist.	Particle physicist Research analyst Metallurgist.
RRSA	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
Cross curricular links	Chemistry – States of matter, atoms, elements and compounds. Chemical reactions etc. Technology – Substances and materials	Numeracy- Maths Seismic waves – Geography. 7 colours of religion RE	Biology – Diffusion Physics – Particle model and gas pressure Maths – Numeracy and graph analysis

	Space – Pressure on different planets and in the vacuum of space. Biology – Effect of increased and decreased pressure on the body.		
Useful websites/ videos	<p>Particles demos: https://www.youtube.com/watch?v=OOI5yVVxMQE</p> <p>Brownian motion: https://www.youtube.com/watch?v=i7tQLjGZROA</p> <p>9 Amazing ice experiments: https://www.youtube.com/watch?v=i7tQLjGZROA</p>	<p>Separating mixtures, Chemistry matters: https://www.youtube.com/watch?v=wuJ1xyqo2Hk</p> <p>TED Ed: Separating the inseparable https://www.youtube.com/watch?v=q8Ent5CXhfY</p> <p>Ex: TED Ed Why oil and water don't mix: https://www.youtube.com/watch?v=h5yIJXdlitgo</p>	<p>Chemical changes crash course: https://www.youtube.com/watch?v=37pir0ej_SE</p> <p>Accidental discoveries of chemical reactions that changed the world: https://www.youtube.com/watch?v=Xowen_a787Y</p> <p>Challenge: Ted Ed: What triggers a chemical reaction?: https://www.youtube.com/watch?v=8m6RtOpgvtU</p>
Wider Reading	<p>BBC Bitesize particles information and quizzes: https://www.bbc.co.uk/bitesize/guides/zc9q7ty/revision/1</p> <p>Oak lesson particles: https://teachers.thenational.academy/units/particles-f50c</p>	<p>Oak lesson separating mixtures: https://teachers.thenational.academy/lessons/separating-mixtures-6xgkge</p> <p>BBC Bitesize separating techniques: https://www.bbc.co.uk/bitesize/guides/zb2f3k7/revision/2</p>	<p>BBC Bitesize chemical reactions: https://www.bbc.co.uk/bitesize/topics/zypsgk7</p> <p>Oak lesson chemical reactions: https://classroom.thenational.academy/units/chemical-reactions-5ffa</p>
Literacy Programme	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies 	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies 	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies
Independent Learning Tasks	<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>

