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## Subject: Chemistry (Triple HT) Year 10 Curriculum Map 2020 – 2021

### Resources:

Week Commencing	Topic (including links to additional resources)	Assessment Window
1 <sup>st</sup> September	<u>5.3.1 Conservation of Mass, Quantitative Interpretation of Chemical Equations.</u> What is a word equation, and what does it tell you? What is a symbol equation, and why might we use one? How do you balance a symbol equation?	<a href="https://www.bbc.co.uk/bitesize/topics/zsnny4j">https://www.bbc.co.uk/bitesize/topics/zsnny4j</a>
7 <sup>th</sup> September	<u>5.3.1 Conservation of Mass, Quantitative Interpretation of Chemical Equations.</u> What is meant by conservation of mass? Investigation into conservation of mass for the combustion of magnesium in air. How do you analyse results from an investigation?	<a href="https://www.bbc.co.uk/bitesize/topics/zsnny4j">https://www.bbc.co.uk/bitesize/topics/zsnny4j</a>
14 <sup>th</sup> September	<u>5.3.2 Use of amount of substances in relation to masses of pure substances.</u> What does Relative Atomic Mass ( $M_r$ ) mean? How do you use a formula to calculate Relative Formula Mass? What is a balanced equation and how do we use them?	<a href="https://www.bbc.co.uk/bitesize/topics/zsnny4j">https://www.bbc.co.uk/bitesize/topics/zsnny4j</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/3-1-2-relative-formula-mass/">https://www.my-gcsescience.com/aqa/chemistry/3-1-2-relative-formula-mass/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/3-1-1-conservation-of-mass-and-balanced-chemical-equations/">https://www.my-gcsescience.com/aqa/chemistry/3-1-1-conservation-of-mass-and-balanced-chemical-equations/</a>
21 <sup>st</sup> September	<u>5.3.2 Use of amount of substances in relation to masses of pure substances.</u> What does Relative Atomic Mass ( $M_r$ ) mean? How do you use a formula to calculate Relative Formula Mass? What is a balanced equation and how do we use them?	<a href="https://www.bbc.co.uk/bitesize/topics/zsnny4j">https://www.bbc.co.uk/bitesize/topics/zsnny4j</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/3-1-2-relative-formula-mass/">https://www.my-gcsescience.com/aqa/chemistry/3-1-2-relative-formula-mass/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/3-1-1-conservation-of-mass-and-balanced-chemical-equations/">https://www.my-gcsescience.com/aqa/chemistry/3-1-1-conservation-of-mass-and-balanced-chemical-equations/</a>
28 <sup>th</sup> September	<u>5.3.2 Use of amount of substances in relation to masses of pure substances</u> Using mole calculations to calculate percentage yield of an experiment. How do you calculate atom economy of a reaction?	<a href="https://www.bbc.co.uk/bitesize/topics/zsnny4j">https://www.bbc.co.uk/bitesize/topics/zsnny4j</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/3-1-1-atom-economy-chemistry-only/">https://www.my-gcsescience.com/aqa/chemistry/3-1-1-atom-economy-chemistry-only/</a>
5 <sup>th</sup> October	<u>5.3.2 Use of amount of substances in relation to masses of pure substances.</u> How do you calculate the number of moles in a solution (concentration)? How do you use titration to calculate the concentration of a solution?	<a href="https://www.bbc.co.uk/bitesize/topics/zsnny4j">https://www.bbc.co.uk/bitesize/topics/zsnny4j</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/3-2-3-concentration/">https://www.my-gcsescience.com/aqa/chemistry/3-2-3-concentration/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/concentration-chemistry-only/">https://www.my-gcsescience.com/aqa/chemistry/concentration-chemistry-only/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/titration-chemistry-only/">https://www.my-gcsescience.com/aqa/chemistry/titration-chemistry-only/</a>

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12 <sup>th</sup> October	<u>5.4.3 Chemical Changes</u> What is meant by the terms "acid" and "alkali"? How do acids and alkalis behave? What is meant by an indicator?	<a href="https://www.my-gcsescience.com/aqa/chemistry/strong-and-weak-acids/">https://www.my-gcsescience.com/aqa/chemistry/strong-and-weak-acids/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/reactions-of-acids/">https://www.my-gcsescience.com/aqa/chemistry/reactions-of-acids/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/the-ph-scale-and-neutralisation/">https://www.my-gcsescience.com/aqa/chemistry/the-ph-scale-and-neutralisation/</a>
19 <sup>th</sup> October (inset Friday 22 <sup>nd</sup> )	<u>5.4.3 Chemical Changes</u> What does electrolysis mean? What happens during the electrolysis of aluminium oxide (bauxite)? What is a half equation?	<a href="https://www.my-gcsescience.com/aqa/chemistry/electrolysis-of-molten-salts/">https://www.my-gcsescience.com/aqa/chemistry/electrolysis-of-molten-salts/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/using-electrolysis-to-extract-metals/">https://www.my-gcsescience.com/aqa/chemistry/using-electrolysis-to-extract-metals/</a>
Half Term		
2 <sup>nd</sup> November	<u>5.4.3 Chemical Changes</u> What is a REDOX reaction? What happens in the electrolysis of aqueous sodium chloride (brine)? Investigation into the electrolysis of brine.	<a href="https://www.my-gcsescience.com/aqa/chemistry/electrolysis-of-aqueous-salts/">https://www.my-gcsescience.com/aqa/chemistry/electrolysis-of-aqueous-salts/</a>
9 <sup>th</sup> November	<u>5.4.3 Chemical Changes</u> How is electrolysis used in industry? What is electroplating and how does it work? Investigation into electroplating of copper.	<a href="https://www.my-gcsescience.com/aqa/chemistry/using-electrolysis-to-extract-metals/">https://www.my-gcsescience.com/aqa/chemistry/using-electrolysis-to-extract-metals/</a>
16 <sup>th</sup> November	<u>5.4.3 Chemical Changes</u> How is electrolysis examined at GCSE? Looking at past paper questions and address issues.	
23 <sup>rd</sup> November	Learning Checkpoints and Consolidation	
30 <sup>th</sup> November		AR 1 ASSESSMENTS
7 <sup>th</sup> December		AR 1 ASSESSMENTS
14 <sup>th</sup> December	<u>5.5.1 Exothermic and Endothermic Reactions</u> What do the terms "exothermic" and "endothermic" mean? Investigation into exothermic and endothermic reactions. How do you analyse data from a reaction to calculate enthalpy change? <b>Required Practical</b>	<a href="https://www.my-gcsescience.com/aqa/chemistry/exothermic-and-endothermic-reactions/">https://www.my-gcsescience.com/aqa/chemistry/exothermic-and-endothermic-reactions/</a> <a href="https://www.bbc.co.uk/bitesize/topics/z27xxfr">https://www.bbc.co.uk/bitesize/topics/z27xxfr</a>
Christmas Holiday		
4 <sup>th</sup> January	<u>5.5.1 Exothermic and Endothermic Reactions</u> What are some applications of exothermic and endothermic reactions? What is meant by activation energy, and what are some examples? What is an energy profile, and how do you analyse one?	<a href="https://www.my-gcsescience.com/aqa/chemistry/reaction-profile-diagrams/">https://www.my-gcsescience.com/aqa/chemistry/reaction-profile-diagrams/</a> <a href="https://www.bbc.co.uk/bitesize/topics/z27xxfr">https://www.bbc.co.uk/bitesize/topics/z27xxfr</a>
11 <sup>th</sup> January	<u>5.5.1 Exothermic and Endothermic Reactions</u> How do you calculate enthalpy change from bond energies? <b>HT</b> How do you calculate enthalpy change from an experiment? Why might a calculated enthalpy change value be different to an experimental value?	<a href="https://www.my-gcsescience.com/aqa/chemistry/calculating-energy-changes/">https://www.my-gcsescience.com/aqa/chemistry/calculating-energy-changes/</a> <a href="https://www.bbc.co.uk/bitesize/topics/z27xxfr">https://www.bbc.co.uk/bitesize/topics/z27xxfr</a>

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18 <sup>th</sup> January	<u>5.5.1 Exothermic and Endothermic Reactions</u> Investigation; calculating the enthalpy change of a reaction. Analysing results from an investigation and suggesting improvements to a method.	<a href="https://www.bbc.co.uk/bitesize/topics/z27xxfr">https://www.bbc.co.uk/bitesize/topics/z27xxfr</a>
25 <sup>th</sup> January	<u>5.5.1 Exothermic and Endothermic Reactions (Triple only)</u> What is a fuel cell? What are the advantages and disadvantages of fuel cells?	<a href="https://www.bbc.co.uk/bitesize/topics/z27xxfr">https://www.bbc.co.uk/bitesize/topics/z27xxfr</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/chemical-cells/">https://www.my-gcsescience.com/aqa/chemistry/chemical-cells/</a>
1 <sup>st</sup> February	<u>5.6.1 Rates of Reaction</u> What is Collision Theory? <b>Required Practical:</b> How does changing concentration affect the rate of a reaction? (Investigation) How does changing temperature affect the rate of a reaction? (Investigation)	<a href="https://www.my-gcsescience.com/aqa/chemistry/collision-theory-and-activation-energy-including-catalysts/">https://www.my-gcsescience.com/aqa/chemistry/collision-theory-and-activation-energy-including-catalysts/</a> <a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-rates-of-reaction/">https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-rates-of-reaction/</a>
8 <sup>th</sup> February (Inset 12 <sup>th</sup> February)	<u>5.6.1 Rates of Reaction</u> How does changing surface area affect the rate of a reaction? (Investigation) How does the addition of a catalyst affect the rate of a reaction? (Investigation)	<a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-rates-of-reaction/">https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-rates-of-reaction/</a>
February Half Term		
22 <sup>nd</sup> February	<u>5.6.1 Rates of Reaction</u> How do you measure the rate of a chemical reaction? How do you deduce the units of rate? How do you calculate the mean rate of a reaction?	<a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/measuring-rates-of-reaction/">https://www.my-gcsescience.com/aqa/chemistry/measuring-rates-of-reaction/</a>
1 <sup>st</sup> March	<u>5.6.1 Rates of Reaction</u> How do you plot a graph for the rate of a reaction? <b>HT</b> What does it mean to “drop a perpendicular” to calculate rate at a given time?	<a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/interpreting-rate-graphs/">https://www.my-gcsescience.com/aqa/chemistry/interpreting-rate-graphs/</a>
8 <sup>th</sup> March	<u>5.6.2 Reversible Reactions and Dynamic Equilibrium</u> What does the term “equilibrium” mean? <b>HT</b> How do equilibria behave? What is “Le Chatelier’s Principle”?	<a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/reversible-reactions-and-equilibrium/">https://www.my-gcsescience.com/aqa/chemistry/reversible-reactions-and-equilibrium/</a>
15 <sup>th</sup> March	<u>5.6.2 Reversible Reactions and Dynamic Equilibrium (HT only)</u> What are the conditions used in the Haber Process? Why are these conditions used? What is meant by the term “compromise”?	<a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/reversible-reactions-and-equilibrium/">https://www.my-gcsescience.com/aqa/chemistry/reversible-reactions-and-equilibrium/</a>
22 <sup>nd</sup> March	<u>5.6.2 Reversible Reactions and Dynamic Equilibrium (HT only)</u> How do you analyse a graph to determine the optimum reaction conditions for an equilibria? How is this examined in GCSE exams?	<a href="https://www.bbc.co.uk/bitesize/topics/zwdqghv">https://www.bbc.co.uk/bitesize/topics/zwdqghv</a> <a href="https://www.omerascience.co.uk/rates-of-reaction">https://www.omerascience.co.uk/rates-of-reaction</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-equilibrium-ht-only/">https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-equilibrium-ht-only/</a>
29 <sup>th</sup> March	<u>5.7.1 Carbon Compounds as Fuels and Feedstock</u> What is crude oil, and how was it formed? Where do we get crude oil from?	<a href="https://www.omerascience.co.uk/organic-chemistry">https://www.omerascience.co.uk/organic-chemistry</a> <a href="https://www.bbc.co.uk/bitesize/topics/z9488mn">https://www.bbc.co.uk/bitesize/topics/z9488mn</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/crude-oil-and-alkanes/">https://www.my-gcsescience.com/aqa/chemistry/crude-oil-and-alkanes/</a>

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	What is meant by "fractional distillation"?	
Easter Holiday		
19 <sup>th</sup> April	<u>5.7.1 Carbon Compounds as Fuels and Feedstock</u> What is meant by the terms "hydrocarbon", "alkane" and "alkene"? What happens when we combust alkanes? What does "homologous series" mean?	<a href="https://www.omerascience.co.uk/organic-chemistry">https://www.omerascience.co.uk/organic-chemistry</a> <a href="https://www.bbc.co.uk/bitesize/topics/z9488mn">https://www.bbc.co.uk/bitesize/topics/z9488mn</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/combustion-of-hydrocarbons/">https://www.my-gcsescience.com/aqa/chemistry/combustion-of-hydrocarbons/</a>
26 <sup>th</sup> April	<u>5.7.1 Carbon Compounds as Fuels and Feedstock</u> What is meant by "supply and demand"? What is catalytic cracking, and how does it work? Investigation- catalytic cracking.	<a href="https://www.omerascience.co.uk/organic-chemistry">https://www.omerascience.co.uk/organic-chemistry</a> <a href="https://www.bbc.co.uk/bitesize/topics/z9488mn">https://www.bbc.co.uk/bitesize/topics/z9488mn</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/cracking/">https://www.my-gcsescience.com/aqa/chemistry/cracking/</a>
3 <sup>rd</sup> May	<u>5.7.1 Carbon Compounds as Fuels and Feedstock</u> What is the test for alkanes and alkenes? What do we use alkenes for?	<a href="https://www.omerascience.co.uk/organic-chemistry">https://www.omerascience.co.uk/organic-chemistry</a> <a href="https://www.bbc.co.uk/bitesize/topics/z9488mn">https://www.bbc.co.uk/bitesize/topics/z9488mn</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/alkenes/">https://www.my-gcsescience.com/aqa/chemistry/alkenes/</a>
10 <sup>th</sup> May	<u>5.7.1 Carbon Compounds as Fuels and Feedstock (Triple only)</u> What are alcohols, carboxylic acids and esters? Investigating the production of esters from a dicarboxylic acid and diol.	<a href="https://www.omerascience.co.uk/organic-chemistry">https://www.omerascience.co.uk/organic-chemistry</a> <a href="https://www.bbc.co.uk/bitesize/topics/z9488mn">https://www.bbc.co.uk/bitesize/topics/z9488mn</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/carboxylic-acids/">https://www.my-gcsescience.com/aqa/chemistry/carboxylic-acids/</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/alcohols/">https://www.my-gcsescience.com/aqa/chemistry/alcohols/</a>
17 <sup>th</sup> May	Learning Checkpoints and Consolidation	
24 <sup>th</sup> May		AR 2 ASSESSMENTS
7 <sup>th</sup> June		AR 2 ASSESSMENTS
14 <sup>th</sup> June	<u>5.8.1 Purity, Formulations, and Chromatography</u> What is meant by the term "purity" in chemistry? What are some examples of pure and impure substances? How does the purity of a substance alter its properties and uses?	<a href="https://www.omerascience.co.uk/chemical-analysis">https://www.omerascience.co.uk/chemical-analysis</a> <a href="https://www.bbc.co.uk/bitesize/topics/zgbccj6">https://www.bbc.co.uk/bitesize/topics/zgbccj6</a>
21 <sup>st</sup> June	<u>5.8.1 Purity, Formulations, and Chromatography</u> What is a formulation in chemistry? What are some examples of formulations? What happens if a formulation is not made correctly, e.g. in medicine?	<a href="https://www.omerascience.co.uk/chemical-analysis">https://www.omerascience.co.uk/chemical-analysis</a> <a href="https://www.bbc.co.uk/bitesize/topics/zgbccj6">https://www.bbc.co.uk/bitesize/topics/zgbccj6</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/purity-and-formulations/">https://www.my-gcsescience.com/aqa/chemistry/purity-and-formulations/</a>
28 <sup>th</sup> June	<u>5.8.1 Purity, Formulations, and Chromatography</u> What is the process of chromatography? How does it work? <b>Required Practical-</b> Investigation; how do you use chromatography to determine the contents of a mixture.	<a href="https://www.omerascience.co.uk/chemical-analysis">https://www.omerascience.co.uk/chemical-analysis</a> <a href="https://www.bbc.co.uk/bitesize/topics/zgbccj6">https://www.bbc.co.uk/bitesize/topics/zgbccj6</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/chromatography/">https://www.my-gcsescience.com/aqa/chemistry/chromatography/</a>
5 <sup>th</sup> July	<u>5.8.1 Purity, Formulations, and Chromatography</u> What is meant by the term "purity" in chemistry?	<a href="https://www.omerascience.co.uk/chemical-analysis">https://www.omerascience.co.uk/chemical-analysis</a> <a href="https://www.bbc.co.uk/bitesize/topics/zgbccj6">https://www.bbc.co.uk/bitesize/topics/zgbccj6</a>

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	<p>What are some examples of pure and impure substances? How does the purity of a substance alter its properties and uses?</p>	
12 <sup>th</sup> July	<p><u>5.8.1 Purity, Formulations, and Chromatography</u> What is a formulation in chemistry? What are some examples of formulations? What happens if a formulation is not made correctly, e.g. in medicine?</p>	<p><a href="https://www.omerascience.co.uk/chemical-analysis">https://www.omerascience.co.uk/chemical-analysis</a> <a href="https://www.bbc.co.uk/bitesize/topics/zgbccj6">https://www.bbc.co.uk/bitesize/topics/zgbccj6</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/purity-and-formulations/">https://www.my-gcsescience.com/aqa/chemistry/purity-and-formulations/</a></p>
19 <sup>th</sup> July (School closed from 22 <sup>nd</sup> )	<p><u>5.8.1 Purity, Formulations, and Chromatography</u> What is the process of chromatography? How does it work? <b>Required Practical-</b> Investigation; how do you use chromatography to determine the contents of a mixture.</p>	<p><a href="https://www.omerascience.co.uk/chemical-analysis">https://www.omerascience.co.uk/chemical-analysis</a> <a href="https://www.bbc.co.uk/bitesize/topics/zgbccj6">https://www.bbc.co.uk/bitesize/topics/zgbccj6</a> <a href="https://www.my-gcsescience.com/aqa/chemistry/chromatography/">https://www.my-gcsescience.com/aqa/chemistry/chromatography/</a></p>

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