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Subject: Chemistry Trilogy HT Year 10 Curriculum Map 2020 – 2021

Resources:

Week Commencing	Topic (including links to additional resources)	Links to Additional Resources
1 st 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?	https://www.bbc.co.uk/bitesize/topics/zsnny4j
7 th 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?	https://www.bbc.co.uk/bitesize/topics/zsnny4j
14 th 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?	https://www.bbc.co.uk/bitesize/topics/zsnny4j https://www.my-gcsescience.com/aqa/chemistry/3-1-2-relative-formula-mass/ https://www.my-gcsescience.com/aqa/chemistry/3-1-1-conservation-of-mass-and-balanced-chemical-equations/
21 st September	<u>5.3.2 Use of amount of substances in relation to masses of pure substances.</u> What is meant by the term "mole" in Chemistry? How do you calculate the number of moles of a substance? How does this link to a balanced symbol equation?	https://www.bbc.co.uk/bitesize/topics/zsnny4j https://www.my-gcsescience.com/aqa/chemistry/3-2-1-the-mole/
28 th September	<u>5.3.1 Conservation of Mass, Quantitative Interpretation of Chemical Equations.</u> Mole calculation practice from a balanced symbol equation.	https://www.bbc.co.uk/bitesize/topics/zsnny4j https://www.my-gcsescience.com/aqa/chemistry/3-1-3-mass-changes-in-reactions/
5 th October	<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?	https://www.bbc.co.uk/bitesize/topics/zsnny4j https://www.my-gcsescience.com/aqa/chemistry/3-1-3-yield-and-atom-economy-chemistry-only/
12 th 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)?	https://www.bbc.co.uk/bitesize/topics/zsnny4j https://www.my-gcsescience.com/aqa/chemistry/3-2-3-concentration/ https://www.my-gcsescience.com/aqa/chemistry/concentration-chemistry-only/

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	How do you use titration to calculate the concentration of a solution?	https://www.my-gcsescience.com/aqa/chemistry/titration-chemistry-only/
19 th October (inset Friday 22 nd)	<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?	https://www.my-gcsescience.com/aqa/chemistry/strong-and-weak-acids/ https://www.my-gcsescience.com/aqa/chemistry/reactions-of-acids/ https://www.my-gcsescience.com/aqa/chemistry/the-ph-scale-and-neutralisation/
Half Term		
2 nd November	<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?	https://www.my-gcsescience.com/aqa/chemistry/electrolysis-of-molten-salts/ https://www.my-gcsescience.com/aqa/chemistry/using-electrolysis-to-extract-metals/
9 th 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.	https://www.my-gcsescience.com/aqa/chemistry/electrolysis-of-aqueous-salts/
16 th 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.	https://www.my-gcsescience.com/aqa/chemistry/using-electrolysis-to-extract-metals/
23 rd November	<u>5.4.3 Chemical Changes</u> How is electrolysis examined at GCSE? Looking at past paper questions and address issues.	
30 th November		AR 1 ASSESSMENTS
7 th December		AR 1 ASSESSMENTS
14 th 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? Required Practical	https://www.my-gcsescience.com/aqa/chemistry/exothermic-and-endothermic-reactions/ https://www.bbc.co.uk/bitesize/topics/z27xxfr
Christmas Holiday		
4 th 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?	https://www.my-gcsescience.com/aqa/chemistry/reaction-profile-diagrams/ https://www.bbc.co.uk/bitesize/topics/z27xxfr
11 th January	<u>5.5.1 Exothermic and Endothermic Reactions</u> How do you calculate enthalpy change from bond energies? HT How do you calculate enthalpy change from an experiment? Why might a calculated enthalpy change value be different to an experimental value?	https://www.my-gcsescience.com/aqa/chemistry/calculating-energy-changes/ https://www.bbc.co.uk/bitesize/topics/z27xxfr

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18 th 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.	https://www.bbc.co.uk/bitesize/topics/z27xxfr
25 th January	<u>5.5.1 Exothermic and Endothermic Reactions</u> What is a fuel cell?	https://www.bbc.co.uk/bitesize/topics/z27xxfr https://www.my-gcsescience.com/aqa/chemistry/chemical-cells/
1 st February	<u>5.6.1 Rates of Reaction</u> What is Collision Theory? Required Practical: How does changing concentration affect the rate of a reaction? (Investigation) How does changing temperature affect the rate of a reaction? (Investigation)	https://www.my-gcsescience.com/aqa/chemistry/collision-theory-and-activation-energy-including-catalysts/ https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-rates-of-reaction/
8 th February (Inset 12 th 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)	https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.my-gcsescience.com/aqa/chemistry/factors-affecting-rates-of-reaction/
February Half Term		
22 nd 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?	https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.my-gcsescience.com/aqa/chemistry/measuring-rates-of-reaction/
1 st March	<u>5.6.1 Rates of Reaction</u> How do you plot a graph for the rate of a reaction? HT What does it mean to “drop a perpendicular” to calculate rate at a given time?	https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.my-gcsescience.com/aqa/chemistry/interpreting-rate-graphs/
8 th March	<u>5.6.2 Reversible Reactions and Dynamic Equilibrium</u> What does the term “equilibrium” mean? HT How do equilibria behave? What is “Le Chatelier’s Principle”?	https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.my-gcsescience.com/aqa/chemistry/reversible-reactions-and-equilibrium/
15 th 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”?	https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.my-gcsescience.com/aqa/chemistry/reversible-reactions-and-equilibrium/
22 nd 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?	https://www.bbc.co.uk/bitesize/topics/zwdqghv https://www.omerascience.co.uk/rates-of-reaction https://www.mygcsescience.com/aqa/chemistry/factors-affecting-equilibrium-ht-only/
29 th 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? What is meant by “fractional distillation”?	https://www.omerascience.co.uk/organic-chemistry https://www.bbc.co.uk/bitesize/topics/z9488mn https://www.my-gcsescience.com/aqa/chemistry/crude-oil-and-alkanes/

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Easter Holiday		
19 th April	<p><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?</p>	<p>https://www.omerascience.co.uk/organic-chemistry https://www.bbc.co.uk/bitesize/topics/z9488mn https://www.my-gcsescience.com/aqa/chemistry/combustion-of-hydrocarbons/</p>
26 th April	<p><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.</p>	<p>https://www.omerascience.co.uk/organic-chemistry https://www.bbc.co.uk/bitesize/topics/z9488mn https://www.my-gcsescience.com/aqa/chemistry/cracking/</p>
3 rd May	<p><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?</p>	<p>https://www.omerascience.co.uk/organic-chemistry https://www.bbc.co.uk/bitesize/topics/z9488mn https://www.my-gcsescience.com/aqa/chemistry/alkenes/</p>
10 th May	<p><u>5.7.1 Carbon Compounds as Fuels and Feedstock</u> What are some common polymers produced from alkenes, and how are they made?</p>	<p>https://www.omerascience.co.uk/organic-chemistry https://www.bbc.co.uk/bitesize/topics/z9488mn</p>
17 th May	Learning Checkpoints and Consolidation	
24 th May		AR 2 ASSESSMENTS
7 th June		AR 2 ASSESSMENTS
14 th June	<p><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?</p>	<p>https://www.omerascience.co.uk/chemical-analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6</p>
21 st June	<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>https://www.omerascience.co.uk/chemical-analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6 https://www.my-gcsescience.com/aqa/chemistry/purity-and-formulations/</p>
28 th June	<p><u>5.8.1 Purity, Formulations, and Chromatography</u> What is the process of chromatography? How does it work? Required Practical- Investigation; how do you use chromatography to determine the contents of a mixture.</p>	<p>https://www.omerascience.co.uk/chemical-analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6 https://www.my-gcsescience.com/aqa/chemistry/chromatography/</p>
5 th July	<p><u>5.8.1 Purity, Formulations, and Chromatography</u> What are the limitations of chromatography? What are alternative methods of chemical analysis, and who might use them?</p>	<p>https://www.omerascience.co.uk/chemical-analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6 https://www.my-gcsescience.com/aqa/chemistry/instrumental-methods-of-analysis/</p>

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12 th July	<p><u>5.8.2 Identification of Common Gases</u> What are the tests for CO₂, O₂, H₂, Cl₂ and H₂O? Investigation; applying these tests to a practical situation.</p>	<p>https://www.omerascience.co.uk/chemical-analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6 https://www.my-qcsescience.com/aqa/chemistry/gas-tests/</p>
19 th July (School closed from 22 nd)	<p><u>5.8.2 Identification of Common Gases</u> How are gas tests used in industry, and why might they be important?</p>	<p>https://www.omerascience.co.uk/chemical-analysis https://www.bbc.co.uk/bitesize/topics/zgbccj6</p>

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