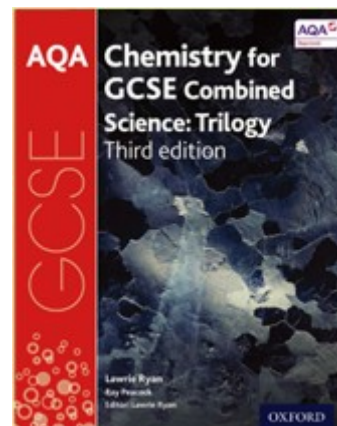


Double Science: Trilogy Chemistry for 10S3, 10S4, 10S5, 10S6 and 10S7. The Topics covered will be:

- C8 Rates and Equilibria
- C9 Crude Oil and Fuels
- C10 Chemical Analysis
- C11 The Earth's Atmosphere
- C12 The Earth's Resources

Please note: Where needed, students need to use Digital Trilogy Chemistry e-book on Kerboodle which students can access when they log into their account on [www.kerboodle.com](http://www.kerboodle.com). Students can read the double page spreads, in the digital e-books, for each topic covered below to support their learning alongside the work set from [www.theeverlearner.com](http://www.theeverlearner.com).



**Enquiry Questions:**

1. How are reaction rates and reversible reactions affected by changing the conditions?
2. How can reversible reactions establish a state of equilibrium?
3. How is the position of equilibrium affected by changing conditions?
4. How is a range of useful products obtained from crude oil?

Week	Title	Success checklist	Work to submit	Date due
1	C.8.1 Rates of Reaction              C8.2 Collision Theory and Surface Area	<i>I can explain how there can be different units for measuring rate of reaction.</i>  <i>I can calculate the mean rate of reaction.</i>  <i>I can calculate the rate of reaction at a specific time.</i>        <i>I can describe how changing the surface area changes the rate of reaction.</i>  <i>I can describe what the activation energy of a reaction is.</i>  <i>I can calculate the surface area to volume ratio.</i>	Students will watch teaching video 'Rates of Reaction' and will make notes in the 'notes' section.  Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions and/ or incorrect answers.  Students will complete and submit the <b>TEST YOURSELF</b> which will be monitored by the class teacher.    Students will watch teaching video, 'Collision Theory' and will make notes in the 'notes' section.  Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or	27 <sup>th</sup> April 2020

TRILOGY CHEMISTRY (DOUBLE SCIENCE)

			<p>incorrect answers.</p> <p>Students will complete and submit the <b>TEST YOURSELF</b> which will be monitored by the class teacher.</p>	
2	<p>C.8.3 The effect of Temperature</p> <p>C8.4 The effect of Concentration and Pressure</p>	<p><i>I can use collision theory to explain how changing temperature alters the rate of reaction.</i></p> <p><i>I can calculate mean rates of reaction.</i></p> <p><i>I can use collision theory to explain how changing concentration or pressure alters the rate of reaction.</i></p> <p><i>I can calculate mean rates of reaction.</i></p> <p><i>I can explain how to change gas pressure.</i></p>	<p>Students will read Pages 112-113 in the <a href="#">Trilogy Chemistry digital Textbook</a> on Kerboodle and make notes.</p> <p>No work submission required for this lesson.</p> <p>Students will watch teaching video 'REQ PRAC 5: The Effect of Concentration on Rates of Reaction' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p> <p>Students will complete and submit the <b>TEST YOURSELF</b> which will be monitored by the class teacher.</p>	<p>4<sup>th</sup> May 2020</p>
3	C.8.5 The effect of Catalysts	<p><i>I can use collision theory to explain how adding a catalyst alters the rate of reaction.</i></p> <p><i>I can explain, with an example, the industrial use of a catalyst.</i></p> <p><i>I can calculate the mean rate of reaction.</i></p>	<p>Students will read Pages 116-117 in the <a href="#">Trilogy Chemistry digital Textbook</a> on Kerboodle and make notes.</p> <p>No work submission required for this lesson.</p>	<p>11<sup>th</sup> May 2020</p>



## TRILOGY CHEMISTRY (DOUBLE SCIENCE)

5	<p>C9.1 Hydrocarbons</p>          <p>C9.2 Fractional Distillation of Oil</p>	<p><i>I can classify a hydrocarbon as an alkane.</i></p> <p><i>I can state the names and describe the first four alkanes.</i></p>          <p><i>I can describe how the trend in colour, viscosity, flammability, and boiling point changes as the length of the hydrocarbon chain changes.</i></p> <p><i>I can describe how the properties of a fraction of crude oil make it appropriate for its use.</i></p>	<p>Students will watch teaching video 'Hydrocarbons and their Properties' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p>          <p>Students will watch teaching video 'Fractional Distillation' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p>	<p>25<sup>th</sup> May 2020</p>
6	<p>C.9.3 Burning Hydrocarbon Fuels</p>          <p>C9.4 Cracking Hydrocarbons</p>	<p><i>I can describe how the trend in colour, viscosity, flammability, and boiling point changes as the length of the hydrocarbon.</i></p> <p><i>I can write balanced symbol equations for the complete and incomplete combustion of hydrocarbons.</i></p> <p><i>I can explain how to test for the products of complete combustion.</i></p>          <p><i>I can describe the process of cracking, including conditions.</i></p> <p><i>I can generate a balanced symbol equation to describe cracking.</i></p>	<p>Students will read Pages 132-133 in the <b><u><a href="#">Trilogy Chemistry digital Textbook</a></u></b> on Kerboodle and make notes.</p> <p>No work submission required for this lesson.</p>          <p>Students will watch teaching video 'Cracking' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a</p>	<p>8<sup>th</sup> June 2020</p>

TRILOGY CHEMISTRY (DOUBLE SCIENCE)

		<p><i>I can describe a chemical test to show an alkene is present.</i></p>	<p>feedback to address misconceptions or incorrect answers.</p> <p>Complete Check point 2 to the best of your ability, and submit by the due date. This Test has lots of interleaving questions, which is designed to recall and refresh prior knowledge.</p>	
7	<p>C.10.1 Pure Substances and Mixtures</p> <p>C10.2 Analysing Chromatograms</p>	<p><i>I can describe the difference between pure substances, impure substances, and formulations.</i></p> <p><i>I can explain how melting point and boiling point data can be used to determine the purity of a substance.</i></p> <p><i>I can state uses of formulations.</i></p> <p><i>I can explain how chromatography separates solutes.</i></p> <p><i>I can calculate R<sub>f</sub> values from given data.</i></p> <p><i>I can use a chromatogram to determine if a sample is pure or impure.</i></p>	<p>Students will watch teaching video, 'Pure Substances and Formulations' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p> <p>Students will complete and submit the <b><u>TEST YOURSELF</u></b> which will be monitored by the class teacher.</p> <p>Students will watch teaching video 'Required Practical 6: Chromatography' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p> <p>Students will complete and submit the <b><u>TEST YOURSELF</u></b> which will be monitored by the class teacher.</p>	15 <sup>th</sup> June 2020

TRILOGY CHEMISTRY (DOUBLE SCIENCE)

8	<p>C10.3 Testing for Gases</p> <p>C11.1 History of our Atmosphere</p>	<p><i>I can explain why limewater turns milky when it reacts with carbon dioxide.</i></p> <p><i>I can interpret results to identify a gas that is present.</i></p> <p><i>I can explain why hydrogen 'pops' near a naked flame.</i></p> <p><i>I can state the composition, including formulae, of the Earth's early atmosphere.</i></p> <p><i>I can describe a theory for the development of the Earth's atmosphere.</i></p> <p><i>I can explain, using word equations, how gases were formed in the atmosphere and oceans were formed.</i></p>	<p>Students will watch teaching video 'Testing for Gases' and will make notes in the 'notes' section.</p> <p>Students will use Test practice area to review knowledge - while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p> <p>Students will complete and submit the <b>TEST YOURSELF</b> which will be monitored by the class teacher.</p> <p>Complete Check point 3 to the best of your ability and submit by the due date</p> <p>Students complete self assessment of GCSE Style questions, which will be green-penned and self assessed using master answers. No submission required here, as students will be monitored by teacher at Checkpoint activity</p> <p>Students will read Pages 148-149 in the <b>Trilogy Chemistry digital Textbook</b> on Kerboodle and make notes.</p> <p>No work submission required for this lesson.</p>	<p>22<sup>nd</sup> June 2020</p>
9	<p>C11.2 Our evolving Atmosphere</p>	<p><i>I can describe how the proportion of carbon dioxide in the early atmosphere was reduced.</i></p> <p><i>I can state the composition of dry air.</i></p>	<p>Students will watch teaching video 'The Earth's changing Atmosphere' and will make notes in the 'notes' section.</p> <p>Students will use Test</p>	

TRILOGY CHEMISTRY (DOUBLE SCIENCE)

	<p>C11.3 Greenhouse Gases</p>	<p><i>I can use word equations to show how carbon dioxide can form sedimentary rocks.</i></p> <p><i>I can explain the greenhouse effect.</i></p> <p><i>I can explain how greenhouse gases increase the temperature of the atmosphere.</i></p> <p><i>I can explain how human activity can change the proportion of greenhouse gases in the atmosphere.</i></p>	<p>practice area to review knowledge – while using their notes taken during watching the video. Computer will offer a feedback to address misconceptions or incorrect answers.</p> <p>Students will complete and submit the <b>TEST YOURSELF</b> which will be monitored by the class teacher.</p> <p>Students will read Pages 152-153 in the <a href="#">Trilogy Chemistry digital Textbook</a> on Kerboodle and make notes.</p> <p>No work submission required for this lesson.</p>	<p>29<sup>th</sup> June 2020</p>
<p>10</p>	<p>C.11.4 Global Climate Change</p> <p>C11.5 Atmospheric Pollutants</p>	<p><b><i>This will be work set if the everlearner free version is extended until the end of the academic year</i></b></p> <p><i>I can explain the possible effects of global climate change and why they are difficult to predict.</i></p> <p><i>I can explain possible methods to reduce greenhouse gas emissions.</i></p> <p><i>I can explain some of the problems in trying to reduce greenhouse gas emissions.</i></p> <p><i>I can explain how sulphur dioxide and nitrogen oxides are made when fossil fuels are combusted.</i></p>		<p>6<sup>th</sup> July 2020</p>

TRILOGY CHEMISTRY (DOUBLE SCIENCE)

		<p><i>I can describe the health impacts of atmospheric pollutants.</i></p> <p><i>I can use balanced symbol equations to show how atmospheric pollutants are formed.</i></p>		
11	<p>C12.1 Finite and Renewable Resources</p> <p>C12.2 Water safe to Drink</p>	<p><i>I can describe and classify a resource as finite or renewable when information is given.</i></p> <p><i>I can explain the use of natural, sustainable, and finite resources.</i></p> <p><i>I can interpret information from different formats including graphs, charts, tables, and prose.</i></p> <p><i>I can explain the method of obtaining potable water depends on the local conditions.</i></p> <p><i>I can explain reasons for filtration and sterilisation in water treatment.</i></p> <p><i>I can describe and explain in detail how to safely distil salty water.</i></p>		13 <sup>th</sup> July 2020
12	<p>C.12.3 Treating Waste Water</p> <p>C12.4 Extracting Metals from Ores</p>	<p><i>I can explain why waste water should be treated before it is released into the environment.</i></p> <p><i>I can describe the main processes in sewage treatment.</i></p> <p><i>I can explain the uses of sewage slurry.</i></p> <p><i>I can describe the processes of phytomining and bioleaching.</i></p>		20 <sup>th</sup> July 2020



TRILOGY CHEMISTRY (DOUBLE SCIENCE)

		<p><i>I can write balanced symbol equations to explain metal extraction techniques.</i></p> <p><i>I can explain the need for new ways of extracting metals (in particular copper).</i></p>		
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