

## Brixham College: Year 10 CHEMISTRY

<b>Lesson</b>	<b>Summary of Content</b>	<b>Text book reference</b>	<b>Time</b>
<b>1</b>	<b>Atoms and sub-atomic particles:</b> Draw and label a diagram of the nuclear model of the atom (pg 22). Copy the table on the bottom of pg 22. Describe and explain why the overall electrical charge of atoms is always neutral. Define what an ion is. Answer the fact-recall and practice application questions in full sentences. Check your answers on pg 255.	pg 22-23	Sept
<b>2</b>	<b>Formula mass and moles:</b> Describe how to calculate relative formula mass. Answer the practice application question 1a-d on pg 105. Describe what the Avogadro constant represents. Describe what a mole is. <b>Higher Tier:</b> Write the formula to calculate moles of a substance. Work through the examples of how to calculate moles and mass. Answer the practice application questions on page 107. Check your answers on pg 255.	pg 104-105 pg 106-107	
<b>3</b>	<b>Elements, compounds and mixtures:</b> Describe what an element, a compound and a mixture is and the differences between them. Include labelled diagrams in your work (pg 24, 29-30 and 34). Answer the fact-recall and practice application questions on pg 26, 30 and 34 in full sentences. Check your answers on pg 255.	pg 24 pg 29-30 pg 34	
<b>4</b>	<b>Mixtures and formulations:</b> Describe what a pure substance is. Describe how the purity of a substance can be tested. Describe what a formulation is and give examples to illustrate your answer. Answer the fact-recall and practice application questions in full sentences. Check your answers on pg 272.	pg 198-199	Oct
<b>5</b>	<b>Required practical activity 6:</b> Chromatography Write a plan or method on how to carry out paper chromatography (pg 35). Draw a labelled diagram of paper chromatography. Answer the fact-recall and practice application questions in full sentences. Check your answers on pg 256.	pg 35-36	
<b>6</b>	<b>Chromatography analysis:</b> Describe the theory of chromatography. State the formula to calculate $R_f$ values. Describe how to identify substances using chromatography. Answer the fact-recall and practice application questions in full sentences (pg 202). Check your answers on pg 272.	pg 200-202	Nov
<b>7</b>	<b>Testing for gases:</b> Make flash cards on how to test for hydrogen, oxygen, carbon dioxide and chlorine (use one card for each); include drawings on your cards. Answer the practice application questions in full sentences (pg 203). Check your answers on pg 272.	pg 203	
<b>8</b>	<b>Review of learning:</b> Complete revision of the previous nine lessons by making mind maps; revision cards; revision poster. Use the checklist on pg 46 and pg 204 to identify the topics.	pg 46 pg 205	
<b>9</b>	<b>Practice and application of learning:</b> Complete specimen exam questions pg 48-49 and on pg 205 in full sentences. Check your answers on pg 256-257 and pg 272.	pg 48-49 pg 205	

## Brixham College: Year 10 CHEMISTRY

10	<b>Metals and acids:</b> Write a general equation for the reaction of metals and acids (pg 134). Describe how different metals react with acids, depending of their reactivity; include a drawing in your answer. Describe which salts are formed when metals react with different acids. Answer the fact-recall question and practice application questions 1-4. Check your answers on pg 265.	pg 134-136	
11	<b>Acids, bases and salts:</b> Describe how salts are formed from the reaction of acids with oxides and hydroxides; include the general equation and specific examples in your work. Describe how salts are formed from the reaction of acids with carbonates; include the general equation and specific examples in your work. Answer the practice application questions in full sentences (pg 132). Check your answers on pg 265.	pg 130-132	
12	<b>Required practical 1:</b> Making salts Describe how metal oxides react with acids (pg 130). Describe how you would make a soluble salt from an insoluble base; include a diagram in your answer (pg 132).	pg 131-132	
13	<b>The pH scale and neutralisation:</b> Describe what the pH scale is and how to test for pH; include a diagram in your answer. Describe what a neutralisation reaction is and include the general equation and the ionic equation in your work. Answer the fact-recall and practice application questions in full sentences (pg 126). Check your answers on pg 265.	pg 124-126	Dec
14	<b>Concentration:</b> Describe what concentration is. Describe how to calculate concentration. Answer the fact-recall and practice application questions in full sentences (pg 119). Check your answers on pg 264. <b>Higher tier: Strong, weak acids:</b> Describe what acid dissociation is. Describe the difference between strong and weak acids; use examples in your answer. Describe the effect of acid strength on reactivity and pH. Describe what the concentration of an acid is and how it is different from the strength of an acid. Answer the fact-recall and practice application questions in full sentences (pg 129). Check your answers on pg 265.	pg 118-119 pg 127-129	
15	<b>Review of learning:</b> Complete revision of the previous five lessons by making mind maps; revision cards; revision poster. Use the checklist on pg 148 to identify the topics.	pg 124-136	
16	<b>Practice and application of learning:</b> Complete specimen exam questions 1-5 pg 150-151 in full sentences. Check your answers on pg 266.	pg 150-151	
17	<b>What is crude oil?:</b> Describe what crude oil is (top of pg 191). Describe What hydrocarbons are; include a description of alkanes and alkenes. Answer the fact-recall questions 1 and 2 in full sentences (pg 190) and the fact-recall questions 1 and 2 in full sentences (pg 192). Check your answers on pg 271.	pg 188-189 pg 191-192	Jan
18	<b>Separating crude oil:</b> Describe what fractional distillation is; include a diagram in your answer. Answer the practice application questions in full sentences (pg 192). Check your	pg 191-192	

## Brixham College: Year 10 CHEMISTRY

	answers on pg 265.		
19	<b>Uses of crude oil fractions:</b> Describe the uses of crude oil fractions. Answer the fact-recall questions in full sentences (pg 193). Check your answers on pg 271.	pg 193	
20	<b>Properties of crude oil fractions:</b> Describe the properties of hydrocarbons. Describe how to test for an alkene.	pg 189	
21	<b>Combustion of fuels:</b> Describe the complete combustion of hydrocarbons; include equations in your answer. Answer the practice application questions in full sentences (pg 190). Check your answers on pg 271.	pg 189-190	Feb
22 and 23	<b>Atmospheric pollutants and their impact:</b> State what the products of combustion are. Describe the problems caused by the products of combustion. Answer the fact-recall and practice application questions in full sentences (pg 215). Check your answers on pg 273.	pg 214-215	
24	<b>Cracking, alkenes and polymers:</b> Describe what cracking is; include a diagram in your description. Describe and explain how cracking works. State what the products of cracking are; use a specific example to illustrate your answer. Answer the fact-recall and practice application questions in full sentences (pg 195). Check your answers on pg 271.	pg 194-195	
25 and 26	<b>The composition and evolution of the atmosphere:</b> Describe what the atmosphere is like today; include the percentages of the gases. Describe what the early atmosphere was like and how oceans formed. Describe how the carbon dioxide in the atmosphere decreased and oxygen in the atmosphere increased. These descriptions could be in the form of a story board or poster.	pg 206-208	
27	<b>Algae, plants and carbon in rocks:</b> Explain the evidence for the evolution of the atmosphere. Answer the fact-recall and practice application questions in full sentences (pg 208). Check your answers on pg 272.	pg 207-208	Mar
28	The page references relate to GCSE Combined Science <b>Biology</b> for the grade 9-1 course. <b>Water cycle:</b>		
29	The page references relate to GCSE Combined Science <b>Biology</b> for the grade 9-1 course. <b>Carbon cycle:</b>		
30 and 31	<b>Human activities, greenhouse gases and climate change:</b> State what greenhouse gases are and explain how they cause the greenhouse effect in the Earth's atmosphere; include a diagram in your answer. Describe and explain how human activity contributes to global warming. Describe what climate change is and the consequences of climate change. Describe how the risks of climate change are assessed. Answer the fact-recall questions in full sentences (pg 211). Check your answers on pg 273.	pg 209-211	
32	<b>Carbon footprint:</b> Describe what a carbon footprint is. Describe how carbon footprints can be reduced. Explain the problems with reducing carbon footprints. Answer the fact-recall and practice application questions in full sentences (pg	pg 212-213	Apr

## Brixham College: Year 10 CHEMISTRY

	213). Check your answers on pg 273.		
33	<b>Review of learning:</b> Complete revision of the previous thirteen lessons by making mind maps; revision cards; revision poster. Use the checklist on pg 196 and pg 216 to identify the topics.	pg 188-195 pg 206-215	
34	<b>Practice and application of learning:</b> Complete specimen exam questions pg 197 and pg 217 in full sentences. Check your answers on pg 271 and 273.	pg 197 pg 217	
35	<b>Resources and sustainability:</b> Describe what natural, renewable and finite resources are and give an example of each. Describe what sustainable development is. Describe the ways in which chemistry can be made more sustainable.	pg 218-220	May
36	<b>Water and water treatment:</b> Describe what potable water is. Describe what fresh water is and how it is treated; include a diagram in your work. Describe how sea water is treated to make it potable. Answer the fact-recall and application questions on pg 227. Check your answers on pg 274.	pg 226-227	
37	<b>Water and water treatment:</b> <b>Required practical 8:</b> Water purification Describe the process of distillation; include a diagram in your work (pg 40). Describe how the separation technique of distillation works. Describe how you could test the distilled water (pg 227).	pg 40 pg 227	
38	<b>Urban lifestyles, industrial processes and waste:</b> State the different sources of waste water. Describe the different stages of water treatment and include a diagram in your work. Answer the fact-recall questions on pg 229. Check your answers on pg 274.	pg 228-229	
39	<b>Phytomining, bioleaching and displacement: Higher tier:</b> Describe what bioleaching, phytomining are. Answer the fact-recall and application questions on pg 221. Check your answers on pg 274.	pg 218-220	June and July
40	<b>Life cycle assessments:</b> Describe what a life cycle assessment is. Describe the stages in a life cycle assessment. Describe some of the problems associated with life cycle assessments. Answer the application questions on pg 225. Check your answers on pg 274.	pg 223-225	
41	<b>Recycling:</b> Describe what it means to reuse and recycle. Make a table to summarise the reasons why we should recycle. Describe how glass is recycled. Answer the fact-recall questions on pg 222. Check your answers on pg 274.	pg 218-220	
42	<b>Review of learning:</b> Complete revision of the previous seven lessons by making mind maps; revision cards; revision poster. Use the checklist on pg 230-231 to identify the topics.	pg 218-229	
43	<b>Practice and application of learning:</b> Complete specimen exam questions on pg 232 in full sentences. Check your answers on pg 274.	pg 232	