

1.1	<ul style="list-style-type: none"> Where did the gases in the early atmosphere come from? (1) 	<ul style="list-style-type: none"> Volcanoes
1.2	<ul style="list-style-type: none"> Name the two main gases in the Earth's early atmosphere (2) 	<ul style="list-style-type: none"> Carbon dioxide (1) and water vapour (1)
1.3	<ul style="list-style-type: none"> <i>Explain why it's difficult to be precise about how gases in the atmosphere have changed over time</i> 	<ul style="list-style-type: none"> Limited information available from different sources (1)/ open to different interpretation (1).
1.4	<ul style="list-style-type: none"> Describe how the oceans were formed (2) 	<ul style="list-style-type: none"> The Earth cooled to 100°C (1), water vapour in the atmosphere condensed to form oceans (1)
1.5	<ul style="list-style-type: none"> Describe three processes that reduced the level of carbon dioxide in the atmosphere (3) 	<ul style="list-style-type: none"> Carbon dioxide dissolves in oceans. (1) Locked up in sedimentary rocks. (1) (as shells made using the dissolved carbon dioxide in the ocean). Taken in by plants during photosynthesis and locked up in fossil fuels. (1)
1.6	<ul style="list-style-type: none"> <i>Explain how the level of oxygen in the atmosphere increased (2)</i> 	<ul style="list-style-type: none"> Plants evolved & produce oxygen (1) during photosynthesis (1)
1.8	a) Name the 3 main gases in the atmosphere today and their percentage abundance (3)	<ul style="list-style-type: none"> Nitrogen 78% (1), oxygen 21% (1) argon 1% (1)
1.7	a) Describe how to measure the amount of oxygen in the atmosphere today (3)	a) Heat up iron wool (or copper) in a boiling tube (1) connected to gas syringe (1). Measure decrease in volume of air in gas syringe (1). b) Volume of gas in syringe decreases as oxygen from air reacts with metal (1) to form metal oxide (1)
1.7	b) <i>I can explain why the experiment to measure oxygen content works (2)</i>	
1.9	a) Explain how volcanoes can effect the atmosphere (2) b) Identify and explain two ways humans are increasing the amount of carbon dioxide in the atmosphere (2)	a) Release carbon dioxide , this causes global warming (1). Acidic gases cause acid rain (1) b) Burning fossil fuels - releases carbon dioxide and causes global warming (1) Deforestation - cutting down trees so less carbon dioxide is taken in by photosynthesis (1)

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2.13	<p>a) Define an atom (1)</p> <p>a) How can how you recognise elements from diagrams and their names? (2)</p> <p>b) How can you recognise compounds from diagrams and their names</p>	<p>a) Smallest particle that makes up an element (1)</p> <p>b) Only made from one type of atom (1), found in the periodic table (1) and have one part names (1) eg oxygen</p> <p>c) Contain atoms from different elements (1) bonded together, (1) have two part names, eg calcium oxide</p>
2.13	<p>di) How many elements in the formula CaCO_3? (1)</p> <p>dii) Explain how to identify the number of elements in a chemical formula. (1)</p> <p>ei) How many atoms are there in CaCO_3?</p> <p>eii) Explain how to work out the number of atoms in a chemical formula. (1)</p> <p>f) Predict the mass of calcium oxide if 100g of calcium carbonate are heated and 44g of carbon dioxide is given off. Calcium carbonate \rightarrow calcium oxide + carbon dioxide</p>	<p>di) 3 elements in CaCO_3 as 3 capitals Ca = Calcium C = carbon O = oxygen</p> <p>dii) Count the number of CAPITAL LETTERS. Element symbols either have one CAPITAL letter, or one CAPITAL letter followed by a lower case letter.</p> <p>ei) 5 (1 calcium + 1 carbon + 3 oxygen)</p> <p>eii) If there is no number after a CAPITAL or the lower case letter following the CAPITAL there is only one atom of this element. If there is a number this means there is more than one atom- equal to the number. Numbers are always half way below the line.</p> <p>f) $100 - 44 = 56\text{g}$ (1) Mass of reactant (calcium carbonate) = 100g Mass of products (calcium oxide + carbon dioxide) must also equal 100g as mass must be conserved. $100 = 44 + ?$</p>
2.14	<p>a) Describe what happens when water is added to calcium oxide (2)</p> <p>b) Name the product formed when water is added to calcium oxide (1)</p>	<p>a) Heat is given off (1), a white crumbly solid is formed.(1)</p> <p>b) calcium hydroxide (1)</p>
2.15	<ul style="list-style-type: none"> Name solution formed when calcium hydroxide dissolves in water (1) 	<ul style="list-style-type: none"> Limewater (1)
2.16	<p>If you add 10g of copper chloride solution to 10g of sodium hydroxide what total mass of products will be formed? (1) Explain how you know (1)</p>	<p>20g of product (1) Mass of reactants = Mass of products $10 + 10 = 20\text{g}$ (1)</p>
2.17	<p>a) What type of chemicals are calcium oxide, calcium hydroxide and calcium</p>	<p>a) Alkalis (1) <i>blue or purple with universal indicator pH 8- 14</i></p>

	carbonate (hint think pH scale) (1) b) Why is powdered calcium carbonate spread on some farmers fields? (3)	b) Calcium carbonate is an alkali (1) neutralises acidic soil(1) crops grow better
2.18	a) Name the main gas that causes acid rain b) Describe how this gas is produced (2) c) Explain how acidic gases can be removed from waste gases from fossil fuel power stations. (2)	a) Sulfur dioxide (1) or nitrogen oxides b) Burning fossil fuels (1) (like petrol & coal) containing sulphur impurities (1) c) Pass acidic gases through containers of wet powdered calcium carbonate . (1) Gases dissolve in water and are neutralised by alkali . (1)