

Edexcel core science revision C1 – Topic 1 'The Earth's atmosphere'

Where did the gases in the early atmosphere come from? (1)	Name the two main gases in the Earth's early atmosphere (2)	<i>Explain why it's difficult to be precise about how gases in the atmosphere have changed over time</i>
Describe how the oceans were formed (2)	Describe three processes that reduced the level of carbon dioxide in the atmosphere (3)	<i>Explain how the level of oxygen in the atmosphere increased (2)</i>
Name the 3 main gases in the atmosphere today and their percentage abundance (3)	Describe how to measure the amount of oxygen in the atmosphere today (3)	<i>Explain the experiment to measure oxygen content</i>
Explain how volcanoes can affect the atmosphere	Identify and explain two ways humans are increasing the amount of carbon dioxide in the atmosphere	Write the word and balanced symbol equation for the reaction of copper and oxygen

Edexcel core science revision C1 – Topic 1 'The Earth's atmosphere' answers

<p>Where did the gases in the early atmosphere come from? (1)</p> <p style="color: red;">Volcanoes</p>	<p>Name the two main gases in the Earth's early atmosphere (2)</p> <p style="color: red;">Carbon dioxide (1) and water vapour (1)</p>	<p><i>Explain why it's difficult to be precise about how gases in the atmosphere have changed over time</i></p> <p style="color: red;">Limited information available from different sources (1)/ open to different interpretation (1).</p>
<p>Describe how the oceans were formed (2)</p> <p style="color: red;">The Earth cooled to 100°C (1), water vapour in the atmosphere condensed to form oceans (1)</p>	<p>Describe three processes that reduced the level of carbon dioxide in the atmosphere (3)</p> <p style="color: red;">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)</p>	<p><i>Explain how the level of oxygen in the atmosphere increased (2)</i></p> <p style="color: red;">Plants evolved & produce oxygen (1) during photosynthesis (1)</p>
<p>Name the 3 main gases in the atmosphere today and their percentage abundance (3)</p> <p style="color: red;">Nitrogen 78% (1), oxygen 21% (1) argon 1% (1)</p>	<p>Describe how to measure the amount of oxygen in the atmosphere today (3)</p> <p style="color: red;">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).</p>	<p><i>Explain why the experiment to measure oxygen content works and proves the value of 21%</i></p> <p style="color: red;">Volume of gas in syringe decreases as oxygen from air reacts with metal (1) to form metal oxide (1)</p>
<p>Explain how volcanoes can affect the atmosphere</p> <p style="color: red;">Release carbon dioxide, this causes global warming (1). Acidic gases cause acid rain (1)</p>	<p>Identify and explain two ways humans are increasing the amount of carbon dioxide in the atmosphere</p> <p style="color: red;">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)</p>	<p>Write the word and balanced symbol equation for the reaction of copper and oxygen</p> <p style="color: red;">Copper + oxygen → copper oxide</p> <p style="color: red;">$2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$</p>

Edexcel core science revision C1 – Topic 2 ‘Materials from the Earth’

<p>Name an igneous rock (1)</p> <p>Describe how igneous rocks are formed (2)</p> <p><i>Explain what affects the size of crystals (2)</i></p>	<p>Name a sedimentary rock (1)</p> <p>Describe how sedimentary rocks are formed (3)</p> <p>Explain how to recognise sedimentary rocks (2)</p>	<p>Name a metamorphic rock (1)</p> <p>Describe how metamorphic rocks are formed (2)</p> <p><i>Describe how marble is formed (2)</i></p>
<p>Name the main chemical present in limestone, chalk and marble (1)</p> <p>Describe some uses of limestone that are commercially important (2)</p>	<p>Recall one reason why people may be in favour of a limestone quarry in their community (1)</p> <p>Identify reasons why people may not be in favour of a limestone quarry in their community (2)</p> <p>Evaluate both sides of the argument and justify your opinion (3)</p>	<p>What is meant by a thermal decomposition reaction? (2)</p>
<p>Complete the word equations for thermal decomposition of these compounds below: Calcium carbonate →</p> <p>Sodium carbonate →</p>	<p>Explain why some metal carbonates decompose more easily than others.(1)</p>	<p>Complete the balanced symbol equations for thermal decomposition of these compounds below: Calcium carbonate →</p> <p>Sodium carbonate →</p>

Edexcel core science revision C1 – Topic 2 ‘Materials from the Earth’ answers

<p>Name an igneous rock (1) <i>Granite / basalt/ (1)</i></p> <p>Describe how igneous rocks are formed (2) <i>Molten rock/ magma/ lava cools</i></p> <p>Explain what affects the size of crystals (2) <i>Solidifies- forms a solid</i> <i>Fast cooling (on outside of Earth) causes small crystals <u>and</u> slow cooling (inside Earths crust) cause large crystal</i></p>	<p>Name a sedimentary rock (1) <i>Limestone/ sandstone/ chalk (1)</i></p> <p>Describe how sedimentary rocks are formed (3) <i>Small bits of rock (sediment) sink the bottom of the sea (1) compressed by more sediment falling from above (1) over millions of years (1)</i></p> <p>Explain how to recognise sedimentary rocks (2) <i>Fossils (1) - due to compressed organisms. Erodes easily (1) – due to soft rounded grains.</i></p>	<p>Name a metamorphic rock (1) <i>Marble/ slate/ quartz (1)</i></p> <p>Describe how metamorphic rocks are formed (2) <i>Heat(1) and pressure (1) caused when tectonic plates move</i> <i>Describe how marble is formed (2)</i> <i><u>limestone (1) is heated and compressed (1) by movements of the Earths tectonic plates</u></i></p>
<p>Name the main chemical present in limestone, chalk and marble (1) <i>calcium carbonate</i></p> <p>Describe some uses of limestone that are commercially important (2) <i>Used in the formation of cement (1)/ concrete (1)/ glass (1)</i></p>	<p>Recall one reason why people may be in favour of a limestone quarry in their community (1) <i>More jobs (1)- more money for local people</i></p> <p>Identify reasons why people may not be in favour of a limestone quarry in their community (2) <i>Dust pollution (1)/ noise pollution (1) / destroys plant and animal habitats(1)/ spoils view (1)</i></p> <p>Evaluate both sides of the argument and justify your opinion (3) <i>The main advantage is making more jobs and bringing money to the local area.(1)</i> <i>However the quarry will mean an increase in level of dust & noise pollution as well as spoiling the view. (1)</i> <i>Over all I think.....give reasons, use clues in given text.</i></p>	<p>What is meant by a thermal decomposition reaction? (2) <i>Heat (1) is used to break down (1) a chemical into several products</i></p>
<p>Complete the word equations for thermal decomposition of these compounds below: Calcium carbonate → <i>Calcium → Calcium oxide + carbonate carbon dioxide</i></p> <p>Sodium carbonate → <i>Sodium → Sodium oxide + carbonate carbon dioxide</i></p>	<p>Explain why some metal carbonates decompose more easily than others.(1) <i>The higher the metal is in the reactivity series the longer it takes for the metal carbonate to decompose. (1) (For example- sodium carbonate takes longer to decompose than copper carbonate)</i></p>	<p>Complete the balanced symbol equations for thermal decomposition of these compounds below: Calcium carbonate → <i>CaCO₃ → CaO + CO₂</i> Sodium carbonate → <i>Na₂CO₃ → CO₂ + Na₂O</i></p>

Edexcel core science revision C1 – Topic 2 ‘Materials from the Earth 2’

<p>Plan an experiment to find out which metal carbonate decomposes the fastest. Include equipment used (2) Independent variable (1) Dependent variable (1) Control variables (2)</p>	<p>Define an atom (1)</p> <p>How can you recognise elements from diagrams and their names? (2)</p> <p>How can you recognise compounds from diagrams and their names</p>	<p>Name CaCO_3</p> <p>How many elements in the formula CaCO_3? (1)</p> <p>How many elements in the formula CaCO_3? (1)</p>
<p>What type of chemicals are calcium oxide, calcium hydroxide and calcium carbonate (hint think pH scale) (1)</p> <p>Why is powdered calcium carbonate spread on some farmers fields? (3)</p>	<p>Name the main gas that causes acid rain (1)</p> <p>Describe how this gas is produced (2)</p> <p>Explain how acidic gases can be removed from waste gases from fossil fuel power stations. (2)</p>	<p>Explain how to work out the number of atoms in a chemical formula. (1)</p> <p>Explain how to identify the number of elements in a chemical formula. (1)</p>
<p>Predict the mass of calcium oxide if 100g of calcium carbonate are heated and 44g of carbon dioxide is given off.</p> <p>Calcium carbonate \rightarrow calcium oxide + carbon dioxide</p>	<p>What is meant by the term conservation of mass?</p>	<p>Describe what happens when water is added to calcium oxide (2)</p> <p>Name the product formed when water is added to calcium oxide (1)</p> <p>Name solution formed when calcium hydroxide dissolves in water (1)</p>

Edexcel core science revision C1 – Topic 3 'Acids'

<p>Name the acid produced in the stomach (1)</p> <p>Give two reasons why there is acid in our stomachs (2)</p> <p>Describe what indigestion is and explain how it can be treated (3)</p>	<p>Plan an experiment to find the best indigestion remedy.</p> <p>List the equipment needed (2)</p> <p>Identify the independent variable (1)</p> <p>Identify the dependent variable (1)</p> <p>Identify some control variables (2)</p>	<p>Name 3 types of metal compounds that can neutralise acids (3)</p>
<p>Complete the word equations for the neutralisation reactions below (3)</p> <p>Sodium oxide + nitric acid →</p> <p>Copper hydroxide + sulfuric acid →</p> <p>Zinc carbonate + hydrochloric acid →</p>	<p>In a neutralisation reaction what will the salt end in if:</p> <p>Hydrochloric acid is used? (1)</p> <p>Nitric acid is used? (1)</p> <p>Sulfuric acid is used? (1)</p>	<p>a) What is electrolysis? (1)</p> <p>b) Name the products made when electrolysis is carried on hydrochloric acid (2)</p>
<p>Plan an investigation into the electrolysis of dilute hydrochloric acid.</p> <p>Name equipment used (2)</p> <p>Describe how to set up equipment – a labelled diagram could be used. (2)</p> <p>Describe what measurement could be taken (1)</p>	<p>Name a product from the electrolysis of sea water (1)</p>	<p>Name the hazard associated with chlorine gas (1)</p> <p>Describe how to reduce hazards associated with large scale production of chlorine gas. (1)</p> <p>I can name two uses of chlorine gas (2)</p>
<p>Name the products formed when electrolysis is carried out on water (2)</p>	<p>Describe the test for chlorine gas (1)</p>	<p>Describe the test for hydrogen gas (1)</p>

Edexcel core science revision C1 – Topic 3 'Acids' answers

<p>Name the acid produced in the stomach (1) Stomach acid</p> <p>Give two reasons why there is acid in our stomachs (2) Kill bacteria and help digestion</p> <p>Describe what indigestion is and explain how it can be treated (3) Too much acid in the stomach; take alkaline indigestion medicine; to neutralise the acid</p>	<p>Plan an experiment to find the best indigestion remedy. List the equipment needed (2) Identify the independent variable (1) Identify the dependent variable (1) Identify some control variables (2) Conical flask, burette, measuring cylinder, acid, universal indicator – or pH meter, balance- see picture 3.3 (2) Type of indigestion remedy pH Same volume of acid, same mass of remedy, same temperature, same conc. Of acid</p>	<p>Name 3 types of metal compounds that can neutralise acids (3) Metal oxides (1) Metal hydroxides (1) Metal carbonates</p>
<p>Complete the word equations for the neutralisation reactions below (3) Sodium oxide + nitric acid → Sodium nitrate + water Copper hydroxide + sulfuric acid → copper sulphate + water Zinc carbonate + hydrochloric acid → zinc chloride + water</p>	<p>In a neutralisation reaction what will the salt end in if: Hydrochloric acid is used? (1) chloride Nitric acid is used? (1) nitrate Sulfuric acid is used? (1) Sulphate</p>	<p>a) What is electrolysis? (1) b) Name the products made when electrolysis is carried on hydrochloric acid (2) a) A process that uses electricity to decompose (break down) a compound (1) (it must be direct current electricity) b) hydrogen gas (1)& chlorine gas (1)</p>
<p>Plan an investigation into the electrolysis of dilute hydrochloric acid. Name equipment used (2) Describe how to set up equipment – a labelled diagram could be used. (2) Describe what measurement could be taken (1) Power pack, leads, crocodile clips, beaker, carbon rods (electrodes), acid, gas collection tubes. Connect DC power supply to 2 carbon rods, put rods in a beaker of hydrochloric acid, as shown below. Measure volume of gas given off (1)</p>	<p>Name two uses of chlorine gas Bleach (1), polyvinyl chloride (a type of plastic) (1)</p>	<p>Name the hazard associated with chlorine gas (1) Describe how to reduce hazards associated with large scale production of chlorine gas. (1) Toxic (can kill you) (1) Ensure the gas does not escape, sealed container</p>
<p>Name the products formed when electrolysis is carried out on water (2) Hydrogen gas (1), oxygen gas (1)</p>	<p>Describe the test for chlorine gas (1) Blue litmus paper goes red then white (1)</p>	<p>Describe the test for hydrogen gas (1) Lit splint makes a squeaky pop (1) Describe the test for oxygen gas (1) Glowing splint is relit (1)</p>

Edexcel core science revision C1 – Topic 4 ‘Obtaining and Using metals’

<p>a) What name is given to rocks that metals can be extracted from (1)</p> <p>b) Explain why some metals are found as pure elements (1)</p> <p>c) Name a metal that is found as the pure element</p>	<p>Name two methods used to extract metals from their ores and give examples of metals extracted by each method (4)</p>	<p>Explain how the method used to extract a metal is related to its position in the reactivity series</p>
<p>Explain why electrolysis is more expensive than reduction with carbon(2)</p>	<p>Describe how to carry out an investigation into methods for extracting metals from its ore</p> <p>Name equipment needed (2)</p> <p>Describe how to set up the experiment (2)</p> <p>What would you record and what would this tell you about the reactivity of the metal?(2)</p>	<p>Define the terms oxidation and reduction (2)</p>
<p>Describe how a metals reactivity is linked to its position in the reactivity series. (1)</p>	<p>Describe the advantages of recycling metals (4)</p>	<p>Name a use for each metal below and link this to a property of the metal:</p> <p>Aluminium (1)</p> <p>Copper (1)</p> <p>Gold (1)</p> <p>Steel (1)</p>

Edexcel core science revision C1 – Topic 4 'Obtaining and Using metals' answers

<p>What name is given to rocks that metals can be extracted from (1) ore</p> <p>Explain why some metals are found as pure elements (1) Some metals are so unreactive they do not form compounds</p> <p>Name a metal that is found as the pure element Gold</p>	<p>Name two methods used to extract metals from their ores and give examples of metals extracted by each method (4)</p> <p>Reduction with carbon (1), example iron (1) and electrolysis (1), example aluminium (1)</p>	<p>Explain how the method used to extract a metal is related to its position in the reactivity series</p> <p>Metals below carbon in the reactivity series are extracted by reduction with carbon (1), metals above carbon are extracted using electrolysis</p>
<p>Explain why electrolysis is more expensive than reduction with carbon(2)</p> <p>Fuel burnt to produce heat to melt the ore (1) AND uses electricity to power the electrolysis</p>	<p>Describe how to carry out an investigation into methods for extracting metals from its ore Name equipment needed (2) Describe how to set up the experiment (2) What would you record and what would this tell you about the reactivity of the metal?(2) Bunsen burner, tripod, gauze, crucible, metal oxide, carbon powder Measure set mass of metal oxide and carbon powder into the crucible. Put crucible on tripod over Bunsen burner and heat. Has a reaction taken place producing a metal? If yes the metal is less reactive than carbon.</p>	<p>Define the terms oxidation and reduction (2)</p> <p>Oxidation is gaining oxygen (1), (eg carbon is oxidised to carbon dioxide) Reduction is the loss of oxygen (1) (eg Iron oxide is reduced to iron)</p>
<p>Describe how a metals reactivity is linked to its position in the reactivity series. (1)</p> <p>The lower in the reactivity series a metal is the less likely it is to corrode.(1) (eg gold is unreactive and does not corrode)</p>	<p>Describe the advantages of recycling metals (4)</p> <p>Saves raw materials & helps to preserve metal ores (1), less energy used to recycle (1), less waste goes to land fill (1), less carbon dioxide produced as less fuel burnt to release energy (1)</p>	<p>Name a use for each metal below and link this to a property of the metal:</p> <p>Aluminium (1) Copper (1) Gold (1) Steel (1) Drink cans- unreactive/ Aeroplanes- low density (1) Wires- good conductor of electricity Pipes- unreactive (1)</p>

Edexcel core science revision C1 – Topic 4 ‘Obtaining and Using metals 2’

Explain why aluminium is used as a material	What is the definition for an alloy?	b) Describe two properties that make alloys more useful than pure metals
Draw a diagram to show why alloys are harder than pure metals	Describe how alloying changes the properties of gold and explain why this is useful (2)	Describe special properties of shape memory alloys
Give an example of uses of smart or shape memory alloys like nitinol and explain how their properties link to the use.	Write the word equation for the reduction of iron oxide	Write the symbol equation for the reduction of iron oxide

Edexcel core science revision C1 – Topic 4 'Obtaining and Using metals 2' answers

<p>Explain why aluminium is used to make plane bodies?</p> <p style="color: red;">Low density/lightweight; increased fuel economy</p>	<p>What is the definition for an alloy?</p> <p style="color: red;">Mixture of metals (1)</p>	<p>b) Describe two properties that make alloys more useful than pure metals</p> <p style="color: red;">Stronger (1) better resistance to corrosion(1)</p>
<p>Draw a diagram to show why alloys are harder than pure metals</p> <p style="color: red;">Different sized atoms from different elements (1), distort the regular layered structure (1), so its' harder for layers of atoms to slide past each other (1)</p>	<p>Describe how alloying changes the properties of gold and explain why this is useful (2)</p> <p style="color: red;">Gold alloy is stronger than pure gold (1), jewellery keeps it's shape better (1)</p>	<p>Describe special properties of shape memory alloys</p> <p style="color: red;">They change shape when heated or cooled past a threshold temperature (1)</p>
<p>Give an example of uses of smart or shape memory alloys like nitinol and explain how their properties link to the use.</p> <p style="color: red;">Braces for teeth (1) heat of mouth changes metal shape to pull teeth into position (1)/ Stent- tube for keep a blood vessel open (1)- heat of body makes tube keep it's shape (1)/ glasses frames (1)- return to original shape when heated slightly</p>	<p>Write the word equation for the reduction of iron oxide</p> <p style="color: red;">Iron oxide + carbon → iron + carbon dioxide</p>	<p>Write the symbol equation for the reduction of iron oxide</p> <p style="color: red;">$2\text{Fe}_2\text{O}_3 + 3\text{C} \rightarrow 4\text{Fe} + 3\text{CO}_2$</p>

Edexcel core science revision C1 – Topic 5 'Fuels (hydrocarbons and combustion)'

<p>Give a definition for a hydrocarbon (2)</p> <p>Describe what crude oil is made up of (it's composition) (1)</p>	<p>Name the process used to separate crude oil into useful chemicals (1)</p> <p>Explain how fractional distillation works (3)</p>	<p>Name the 6 main fractions of crude oil and say what they are used for (6)</p>
<p>Describe how hydrocarbon molecule size effects the: boiling point (1) ease of ignition (1) viscosity (1)</p>	<p>Name the two products formed in the complete combustion of a hydrocarbon. (2)</p> <p>Explain why combustion is an example of an oxidation reaction(1)</p> <p>Why are combustion reactions useful? (1)</p>	<p>Describe the chemical test for carbon dioxide</p>
<p>Name two products formed in the incomplete combustion of hydrocarbons</p>	<p>Explain why carbon monoxide and carbon are formed in the incomplete combustion of hydrocarbons</p>	<p>Name a problem caused by carbon monoxide gas (1)</p> <p>Describe two problems caused by incomplete combustion of hydrocarbons in appliances (2)</p>
<p>I can name the impurity in hydrocarbon fuels that causes acid rain (1)</p> <p>I can name the main gas that causes acid rain (1)</p> <p><i>Bonus write a word equation</i></p> <p>I can describe some of the effects of acid rain (1)</p>	<p>Name 3 gases that cause global warming (3)</p> <p>Explain how theses gases cause global warming</p> <p>Describe how human activities cause gases in the Earths atmosphere to vary</p>	<p>Name two methods scientists are using to try and reduce the level carbon dioxide in the atmosphere today</p>

Edexcel core science revision C1 – Topic 5 'Fuels (hydrocarbons and combustion)' answers

<p>Give a definition for a hydrocarbon (2) Describe what crude oil is made up of (it's composition) (1)</p> <p style="color: red;">Compound (1) made from hydrogen and carbon atoms only (1) Mixture of hydrocarbon molecules</p>	<p>Name the process used to separate crude oil into useful chemicals (1) Explain how fractional distillation works (3)</p> <p style="color: red;">Fractional distillation (1) Heat crude oil to evaporate the oil(1), then cool to condense (1) separating chemicals depending on their boiling points (1)</p>	<p>Name the 6 main fractions of crude oil and say what they are used for (6)</p> <p style="color: red;">Gases, used in domestic heating and cooking (1) Petrol, used as fuel for cars (1) Kerosene, used as fuel for aircraft (1) Diesel oil, used as fuel for some cars and trains (1) Fuel oil, used as fuel for large ships and in some power stations Bitumen, used to surface roads and roofs (1)</p>
<p>Describe how hydrocarbon molecule size effects the: boiling point (1) ease of ignition (1) viscosity (1)</p> <p style="color: red;">Larger molecules have higher boiling points Smaller molecules are more flammable (burn more easily) Larger molecules are more viscous (sticky/ hard to pour)</p>	<p>Name the two products formed in the complete combustion of a hydrocarbon. (2) Explain why combustion is an example of an oxidation reaction(1) Why are combustion reactions useful? (1)</p> <p style="color: red;">Carbon dioxide (1) & water (1) Hydrogen and carbon <u>gain oxygen</u> (1) They release heat energy (1)</p>	<p>Describe the chemical test for carbon dioxide Bubble the gas through lime water (1)/ it goes cloudy (1) a) carbon monoxide (1)/ carbon (1)</p>
<p>Name two products formed in the incomplete combustion of hydrocarbons</p> <p style="color: red;">Carbon monoxide is a poison (1)/ Carbon or soot</p>	<p>Explain why carbon monoxide and carbon are formed in the incomplete combustion of hydrocarbons</p> <p style="color: red;">Lack of oxygen (1) hydrocarbon can't be fully oxidised</p>	<p>Name a problem caused by carbon monoxide gas (1) Describe two problems caused by incomplete combustion of hydrocarbons in appliances (2)</p> <p style="color: red;">Toxic/ takes place of oxygen in your blood/ can kill you (1) Carbon monoxide is a poison (1)/ Carbon or soot makes buildings dirty and causes global dimming (1)</p>
<p>I can name the impurity in hydrocarbon fuels that causes acid rain (1) I can name the main gas that causes acid rain (1) Bonus write a word equation I can describe some of the effects of acid rain (1)</p> <p style="color: red;">Sulfur (1) Sulfur dioxide (1) Sulphur + oxygen → sulphur dioxide Destroys trees, kills fish and corrodes buildings</p>	<p>Name 3 gases that cause global warming (3) Explain how these gases cause global warming Describe how human activities cause gases in the Earth's atmosphere to vary</p> <p style="color: red;">Carbon dioxide/ Methane/ water vapour (3) Green house gases trap sun's energy in the atmosphere/ keeping Earth warmer Burning fossil fuels / cutting down trees</p>	<p>Name two methods scientists are using to try and reduce the level carbon dioxide in the atmosphere today</p> <p style="color: red;">Iron seeding of oceans (1)/ converting carbon dioxide into hydrocarbons (1)</p>

Edexcel core science revision C1 – Topic 5 ‘Fuels (alternatives)’

<p>Name some possible alternatives to fossil fuels</p>	<p>Describe how the ethanol is made</p>	<p>Explain why alternative biofuels are important</p>
<p>Evaluate the advantages and disadvantages of replacing fossil fuels with biofuels. (4)</p>	<p>Explain the properties that make a good fuel (4)</p>	<p>Write the word equation to show the reaction that takes place in a hydrogen fuel cell.</p> <p>Bonus mark write the balanced symbol equation</p>
<p>Identify advantages of using the hydrogen fuel cell in cars instead of petrol.</p> <p>I can identify disadvantages of using the hydrogen fuel cell in cars instead of petrol.</p>	<p>Name 3 non-renewable fossil fuels found in crude oil (3)</p> <p>b) Name a non-renewable fossil fuel found in natural gas (1)</p>	<p>Identify variables to control when carrying out a test to compare the heat released by burning different fuels</p>

Edexcel core science revision C1 – Topic 5 'Fuels (alternatives)' answers

<p>Name some possible alternatives to fossil fuels</p> <p style="color: red;">ethanol/ biodiesel / hydrogen (1)</p>	<p>Describe how the ethanol is made</p> <p style="color: red;">From fermentation of sugar beet. (1) The process is carbon neutral</p>	<p>Explain why alternative biofuels are important</p> <p style="color: red;">Reduces demand for petrol</p>
<p>Evaluate the advantages and disadvantages of replacing fossil fuels with biofuels. (4)</p> <p style="color: red;">Advantages: Biofuels are renewable (1)/ plants take in carbon dioxide when grown, this is released when fuel burned (1) (carbon neutral). Disadvantages: Growing crops takes up land(1) so less land for growing food, food prices could increase (1)</p>	<p>Explain the properties that make a good fuel (4)</p> <p style="color: red;">How flammable- The more easily it burns the better. (1) Amount of smoke produced- less smoke is better (1) Heat energy released- more heat make a better (1) How easy it is to transport- the easier the better. Liquids are better for cars (1)</p>	<p>Write the word equation to show the reaction that takes place in a hydrogen fuel cell.</p> <p style="color: red;">Hydrogen + oxygen → water</p> <p>Bonus mark write the balanced symbol equation</p> <p style="color: red;">$2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$</p>
<p>Identify advantages of using the hydrogen fuel cell in cars instead of petrol.</p> <p style="color: red;">Only waste product is water/ Can be made from renewable water using electrolysis</p> <p>I can identify disadvantages of using the hydrogen fuel cell in cars instead of petrol.</p> <p style="color: red;">Difficult to store gases as they take more space/ can be made from non-renewable oil this releases carbon dioxide</p>	<p>Name 3 non-renewable fossil fuels found in crude oil (3)</p> <p style="color: red;">petrol (1) kerosene (1) and diesel oil (1)</p> <p>Name a non-renewable fossil fuel found in natural gas (1)</p> <p style="color: red;">Methane (1)</p>	<p>Identify variables to control when carrying out a test to compare the heat released by burning different fuels</p> <p style="color: red;">Same volume of water to be heated/ same mass of fuel/ fuel is same distance from the water/ water is heated in the same size tube or beaker</p>

Edexcel core science revision C1 – Topic 5 'Polymers and cracking'

<p>Draw diagrams to represent the alkanes: Methane CH₄ Ethane C₂H₆ Propane C₃H₈</p>	<p>Draw diagrams to represent the alkenes: Ethene C₂H₄ Propene C₃H₆</p>	<p>What happens to hydrocarbons during cracking? (2)</p> <p>Why is cracking important?</p>
<p>Describe how to crack liquid paraffin in the laboratory. Draw a diagram if it helps (2)</p>	<p>What is a monomer? (1)</p> <p>What is a polymer? (1)</p>	<p>Name the polymer formed and draw the repeat unit of the polymer for</p> <ol style="list-style-type: none">propeneChloroethenetetrafluoroethene
<p>Use and properties of</p> <ol style="list-style-type: none">poly(ethene)poly(chloroethene)PTFE	<p>I can define the term biodegradable (1) I can recall three ways of disposing of plastics (2)</p>	<p>Identify and evaluate the advantages and disadvantages of recycling plastic</p> <p>Identify and evaluate the advantages and disadvantages of burning plastic</p> <p>Identify and evaluate the advantages and disadvantages of making biodegradable plastic</p>

Edexcel core science revision C1 – Topic 5 'Polymers and cracking' answers

<p>Draw diagrams to represent the alkanes: Methane CH₄ Ethane C₂H₆ Propane C₃H₈</p>	<p>Draw diagrams to represent the alkenes: Ethene C₂H₄ Propene C₃H₆</p>	<p>What happens to hydrocarbons during cracking? (2)</p> <p style="color: red;">Large hydrocarbons are broken into smaller alkanes (1) and alkenes (1)</p> <p>Why is cracking important? Large hydrocarbon alkanes are poor fuels (1)/ and are in less demand (1)/ Smaller hydrocarbon alkanes are in high demand (1)/ as they are better fuels (1)/ Alkenes are used to make plastics (1)</p>
<p>Describe how to crack liquid paraffin in the laboratory. Draw a diagram if it helps (2)</p> <p style="color: red;">Liquid paraffin is heated so it evaporates (1) & breaks into smaller molecules that are gases. Gases are collected under water. (1)</p>	<p>What is a monomer? (1)</p> <p style="color: red;">An alkene/ unsaturated hydrocarbon</p> <p>What is a polymer? (1)</p> <p style="color: red;">A long chain molecule made from a repeating structure</p>	<p>Name the polymer formed and draw the repeat unit of the polymer for</p> <ol style="list-style-type: none"> 1. propene 2. Chloroethene 3. tetrafluoroethene
<p>Use and properties of</p> <ol style="list-style-type: none"> 1. poly(ethene) Plastic bags/ plastics bottles/ cling film/ insulation for electrical wires (1) Flexible/cheap / good insulator (1) 2. poly(chloroethene) Window frames/ pipes/ insulation for electrical wires (1) Tough/ cheap/ good insulator (1) 3. PTFE Non stick coatings/ Containers for corrosive chemicals (1) Tough/ slippery/ resistant to corrosion (1) 	<p>Define the term biodegradable (1)</p> <p style="color: red;">Material breaks down overtime (1)</p> <p>Recall three ways of disposing of plastics (2)</p> <p style="color: red;">Bury in land fill (1) burn (1) recycle (1)</p>	<p>Identify and evaluate the advantages and disadvantages of recycling plastic</p> <p style="color: red;">Advantages: Less waste goes to land fill/ Conserves raw materials/ less energy is used/ Less carbon dioxide gas given off</p> <p style="color: red;">Disadvantages: Expensive to sort out plastics from other waste</p> <p>Identify and evaluate the advantages and disadvantages of burning plastic</p> <p style="color: red;">Advantages: Less waste goes to land fill/ Releases heat energy (1)/ used to generate electricity (1)</p> <p style="color: red;">Disadvantage: Could release harmful gases</p> <p>Identify and evaluate the advantages and disadvantages of making biodegradable plastic</p> <p style="color: red;">Advantage: Breaks down into harmless chemicals in the ground/ reduces waste going to landfill</p> <p style="color: red;">Disadvantages: More expensive to make</p>