



Year 8

Chemistry

Homework

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HWK 8C1: Compounds and Chemical Formulae

Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
atomic number	the number of protons (which equals the number of electrons) in an atom. It is sometimes called the proton number.
carbonate	A compound that includes carbon and oxygen atoms, as well as a metal element. There are three atoms of oxygen for every one atom of carbon.
chemical formula	A formula that shows the elements present in a compound and their relative proportions.
chemical symbol	A one- or two-letter code for an element that is used by scientists in all countries.
compound	Pure substances made up of atoms of two or more elements, strongly joined together.
element(s)	Substances that all other materials are made up of, and which contain only one type of atom. An element cannot be broken down into other substances.
hydroxide	A compound that includes hydrogen and oxygen atoms, as well as a metal element. There is one atom of oxygen for every one atom of hydrogen.
molecule	A group of two or more (up to thousands) atoms strongly joined together. Most non-metal elements exist either as small or giant molecules.
nitrate (chemistry)	A compound that includes nitrogen and oxygen atoms, as well as a metal element. There are three atoms of oxygen for every one atom of nitrogen.
Relative formula mass (Mr)	The relative formula mass of a substance made up of molecules is the sum of the relative atomic masses of the atoms in the numbers shown in the formula.
sulfate	A compound that includes sulfur and oxygen atoms. There are four atoms of oxygen for every one atom of sulfur.



Q1.

The chemical formulae for four acids are shown in the table below.

sulphuric acid	hydrochloric acid	nitric acid	ethanoic acid
H ₂ SO ₄	HCl	HNO ₃	CH ₃ COOH

- (i) Give the **name** of the element that is present in all four acids.
.....
1 mark
- (ii) Give the **names** of the two **other** elements present in sulphuric acid.
1.
1 mark
2.
1 mark
- (iii) How many atoms are there in the formula HNO₃ (nitric acid)?
.....
1 mark

Q2.

Gemstones called rubies are made from an aluminium compound with the formula Al₂O₃.

The chemical symbol for aluminium is Al.

- (i) Give the name of the element that is combined with aluminium in this compound.
.....
1 mark
- (ii) Suggest the name of the compound with the formula Al₂O₃.
.....
1 mark
- (iii) How many atoms are there in the formula Al₂O₃?
.....
1 mark



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HWK 8C2: Conservation of Mass

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
Clue mole (1 word)	A group of two or more (up to thousands) atoms strongly joined together. Most non-metal elements exist either as small or giant _____.	
Teen elm (1 word)	Substances that all other materials are made up of, and which contain only one type of atom. An _____ cannot be broken down into other substances.	
Cup mod no (1 word)	Pure substances made up of atoms of two or more elements, strongly joined together.	

Read through the new vocabulary and definitions below .

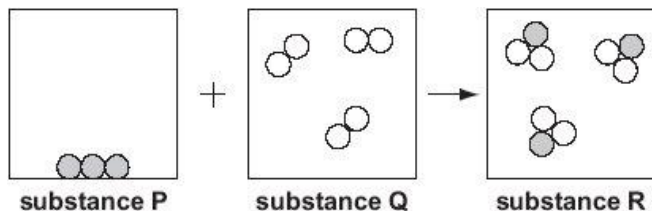
Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
atom	The smallest part of an element that can exist.
chemical reaction	A change in which atoms are rearranged to create new substances.
closed system	A system into or from which substances cannot enter or leave, such as a stoppered test tube.
conservation of mass	This law states that the total mass of the reactants equals the total mass of the products formed in a chemical reaction.
open system	A system into or from which substances can enter or leave, such as a reaction in an open test tube.
physical change	A change that is reversible, in which new substances are not made. Examples of physical changes include changes of state and dissolving.
product	A substance that is made in a chemical reaction.
reactant	A starting substance in a chemical reaction.
word equation	A way of representing a chemical reaction simply. The reactants are on the left of an arrow, and the products are on the right. The arrow means <i>reacts to make</i>



Q1.

The diagram below shows a model of a chemical reaction between two substances.



- (a) How can you tell from the diagram that a chemical reaction took place between substance P and substance Q?

.....

1 mark

- (b) Substance P is carbon.

Suggest what substances Q and R could be.

substance Q

substance R

2 mark

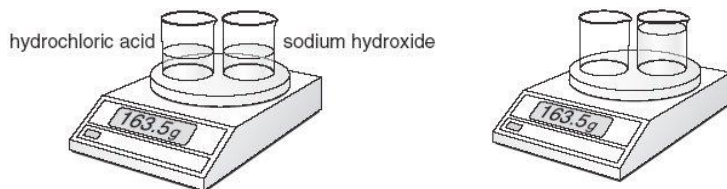
- (c) How does the diagram show that mass has been conserved in this reaction?

.....

1 mark

Q2.

In experiment 1, Molly put two beakers on a balance. One contained 20 cm³ of hydrochloric acid. The other contained 20 cm³ of sodium hydroxide solution. The total mass was 163.5 g.



She poured the acid onto the sodium hydroxide. They reacted.

Why did the reading on the balance **not** change?

.....

..... 1 mark



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HWK 8C3: Atoms and Isotopes

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
moat (1 word)	An _____ is the smallest part of an element that can exist.	
curd pot (1 word)	A _____ is the substance that is made in a chemical reaction	
canter at (1 word)	A _____ is the starting substance in a chemical reaction.	

Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
electron	a tiny particle with a negative charge. Electrons orbit the nucleus of atoms or ions in shells.
isotope	atoms that have the same number of protons but different number of neutrons, i.e., they have the same atomic number but different mass numbers.
mass number	the number of protons plus neutrons in the nucleus of an atom.
neutron	a dense particle found in the nucleus of an atom. It is electrically neutral, carrying no charge.
nucleus (of an atom)	the very small and dense central part of an atom that contains protons and neutrons.
proton	a tiny positive particle found inside the nucleus of an atom.
shell	an area in an atom, around its nucleus, where electrons are found.



Q1.

Figure 1 represents an atom of sulfur.

Figure 1



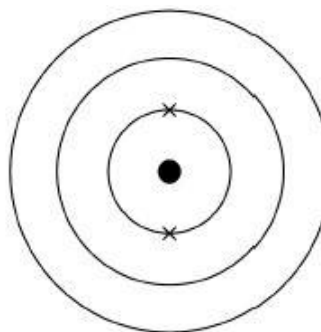
(a) Complete the table below.

1 mark

Particle	Number of particles in a sulfur atom
Electron	16
Neutron	
Proton	16

(b) Complete the electron shell diagram of the sulfur atom.

2 marks



Q2.

(a) Which sub-atomic particles are present in the nucleus of an atom?

_____ and _____

2 marks

(b) There are two isotopes of the element chlorine:



Describe, in terms of sub-atomic particles, **one** similarity and **one** difference between atoms of the two isotopes of chlorine.

Similarity

Difference

2 marks



Name: _____

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HWK 8C4: Groups of the Periodic Table

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
numbs mares (2 words)	The _____ is the number of protons plus neutrons in the nucleus of an atom.	
core lent (1 word)	A tiny particle with a negative charge. _____s orbit the nucleus of atoms or ions in shells.	
sun clue (1 word)	The _____ is a very small and dense central part of an atom that contains protons and neutrons.	

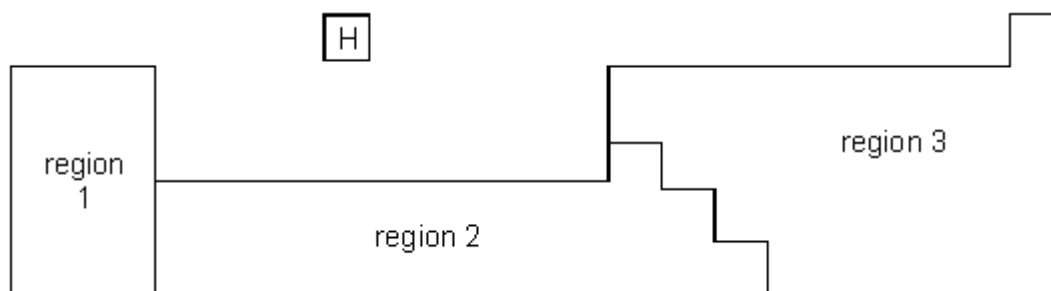
Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
alkali metals	The elements in the left column of the Periodic Table including lithium, sodium, and potassium. Also called Group 1.
chemical properties	Features of the way a substance reacts with other substances.
group	A column of the Periodic Table. The elements in a group have similar properties.
Group 0	Group 0 is on the right side of the Periodic Table. Group 0 elements include helium, neon, argon, and krypton. Also called the noble gases.
Group 1	The elements in the left column of the Periodic Table, including lithium, sodium, and potassium. Also called the alkali metals.
Group 7	Group 7 is second from the right of the Periodic Table. Group 7 elements include fluorine, chlorine, bromine, and iodine. Also known as the halogens.
halogen	The name for elements in the group that is second from the right of the Periodic Table. Halogens include fluorine, chlorine, bromine, and iodine. Also known as the Group 7 elements.
noble gases	The name for elements in the group on the right of the Periodic Table. Noble gases include helium, neon, argon, and krypton. Also known as the Group 0 elements.
period	A row of the Periodic Table. There are trends in the properties of the elements across a period.
Periodic table	A table which shows all the elements arranged in columns and rows. Elements with similar properties are grouped together.
physical properties	Features of a substance that can be observed without changing the substance itself.
trend	A pattern in properties, such as an increase or decrease.
unreactive	Elements that take part in few chemical reactions are unreactive.



Q1 The diagram shows an outline of part of the Periodic Table of Elements.



- (a) What is the name of the element with the symbol H?
 1 mark
- (b) In which regions of the Periodic Table are the following types of element found?
- (i) non-metals (such as oxygen and chlorine);
 region 1 mark
- (ii) very reactive metals (such as sodium and potassium);
 region 1 mark
- (iii) less reactive metals (such as copper and zinc).
 Region 1 mark
- (c) Why is copper sulphate **not** found in the Periodic Table?
 1 mark

Q2 The elements in group 7 of the periodic table are known as the halogens.

	melting point in °C	boiling point in °C	relative atomic mass	colour of element at room temperature, 20°C
fluorine	-220	-188	19	very pale yellow
chlorine	-101	-34	35.5	greenish yellow
bromine	-7	59	80	reddish brown
iodine	114	184	127	dark grey
astatine			210	

- (i) Predict the physical state of astatine at room temperature.
 1 mark
- (ii) Predict the colour of astatine at room temperature. (Circle the correct answer)
 colourless yellow brown black 1 mark



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HWK 8C5: Reactivity of Metals

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
ripe do (1 word)	A row of the Periodic Table. There are trends in the properties of the elements across a _____.	
virtue cane (1 word)	Elements that take part in few chemical reactions are _____.	
belong seas (2 words)	The name for elements in the group on the right of the Periodic Table. _____ include helium, neon, argon, and krypton. Also known as the Group 0 elements.	

Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
displace	A more reactive metal displaces – or pushes out – a less reactive metal from its compound.
displacement	Reaction where a more reactive metal takes the place of a less reactive metal in a compound.
metal	Elements on the left of the stepped line of the Periodic Table. Most metals are shiny, good conductors of electricity and heat, malleable and ductile, and solid at room temperature.
oxidation	A chemical reaction in which a substance combines with oxygen.
oxide	A substance made up of a metal or non-metal element joined to oxygen.
reactive	A substance is reactive if it reacts vigorously with substances such as dilute acids and water.
reactivity	The tendency of a substance to undergo a chemical reaction.
reactivity series	A list of metals in order of how vigorously they react.
reduction	A chemical reaction in which a substance loses oxygen.

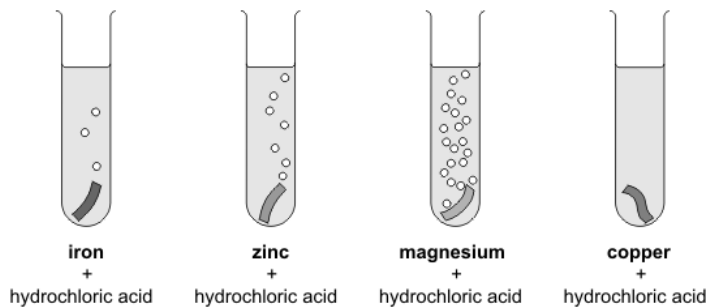


Q1.

Ruth put a piece of a different metal in each of four test tubes.

She poured 10 cm³ of hydrochloric acid onto each metal.

Look at the diagrams.



(i) How do these show if a metal reacts with the acid?

..... 1 mark

(ii) **On the lines below**, put the **four** metals in the order of how strongly they react with the acid.

most reactive

.....

.....

least reactive

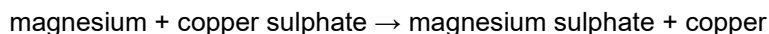
1 mark

Q2.

Part of the reactivity series of metals is shown below.

(a) Dan added a piece of magnesium to a solution of copper sulphate. A displacement reaction took place.

The word equation for the reaction is shown below.



Why is this called a displacement reaction?

.....
1 mark

most reactive	potassium
	sodium
	magnesium
	aluminium
	iron
	lead
least reactive	copper

(b) Look at each pair of chemicals in the table below. 2 marks

Use the reactivity series to predict whether a displacement reaction would take place. Write **yes** or **no** in the second column and give the reason for your decision.

pairs of chemicals	Does a displacement reaction take place? yes or no	reason
iron + sodium chloride		
magnesium + lead nitrate		



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HWK 8C6: Types of Reaction

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
crave tie (1 word)	A substance is _____ if it reacts vigorously with substances such as dilute acids and water.	
penciled mast (1 word)	A _____ reaction is one where a more reactive metal takes the place of a less reactive metal in a compound.	
taxi do ion (1 word)	_____ is a chemical reaction in which a substance combines with oxygen.	

Read through the new vocabulary and definitions below .

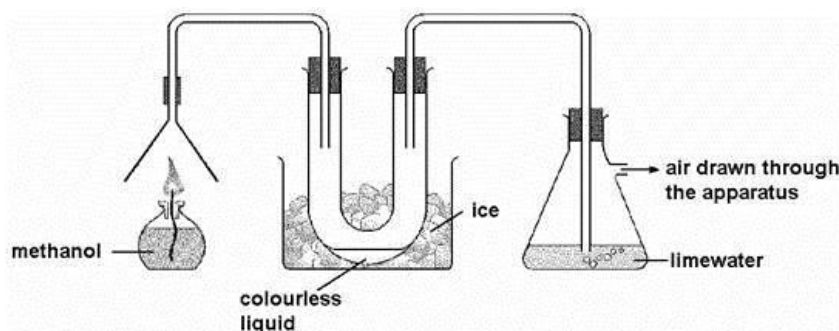
Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
carbon monoxide	A poisonous gas produced from carbon burning without enough oxygen.
combustion	A reaction of a substance with oxygen that gives out heat e.g. burning. Carbon dioxide and water are produced.
corrosion	A reaction in which a metal reacts with air and sometimes water to form a metal oxide or hydroxide.
fuel	A fuel is any compound that has stored energy. This energy is released when it burns.
incomplete combustion	The reaction when a substance burns in a limited supply oxygen. Carbon monoxide, soot and water are produced.
tarnish	A dull film on a metal's surface.
thermal decomposition	Thermal decomposition is the breakdown of a compound from heating into two or more different products.



Q1.

George used the apparatus below to find out what substances are produced when methanol burns.



As the methanol burned, two different gases were produced.

- (i) One of these gases condensed in the U-tube to give a colourless liquid. Give the name of this liquid.

..... 1 mark

- (ii) The other gas turned the lime water cloudy. Give the name of this gas.

..... 1 mark

Q2.

Four shiny iron nails are put in small sealed plastic boxes. The labels show what else is in the boxes.

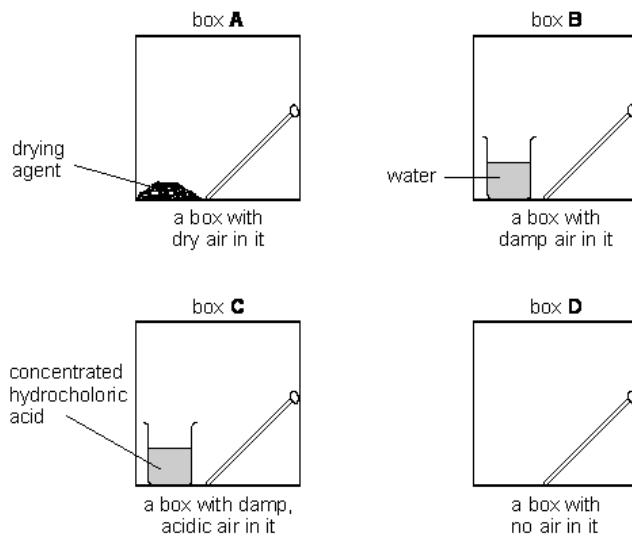
- (a) (i) In which **two** boxes will the iron **not** rust or corrode?

..... and

..... 2 marks

- (ii) In which box will the iron corrode the most?

..... 1 mark



- (b) Many parts of bicycles are made from iron or steel. These parts can rust easily, even indoors. Give **two** ways to stop these parts rusting.

1.

2.

2 marks



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HWK 8C7: Energy Changes in Reactions

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
trash in (1 word)	A dull film on a metal's surface is called a .	
Corn or iso (1 word)	_____ Is a reaction in which a metal reacts with air and sometimes water to form a metal oxide or hydroxide.	
combos unit (1 word)	_____ Is the reaction of a substance with oxygen that gives out heat e.g. burning. Carbon dioxide and water are produced.	

Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
Endothermic	A type of reaction in which energy from the surroundings is transferred to the products. This means the temperature of the surroundings decreases.
Exothermic	A type of reaction in which energy is transferred to the surroundings from the reactants. This means the temperature of the surroundings increases.



Q1.

This question is about energy changes.

- (a) Which of these items uses an endothermic reaction?

Hand warmer

Sports injury pack

Self-heating can

- (b) A student measured the temperature at the start and at the end of a reaction.

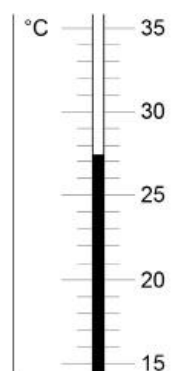
Name the apparatus used to measure the temperature.

1 mark

- (c) The diagram shows the temperature at the end of the reaction

Complete the table below.
Use the diagram to help.

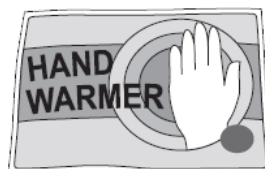
Temperature at start in °C	14.3
Temperature at end in °C	
Change in temperature in °C	



2 marks

Q2.

Hand warmers use chemical reactions.



- (a) The table shows temperature changes for chemical reactions **A**, **B** and **C**.

Reaction	Starting temperature in °C	Final temperature in °C	Change in temperature in °C
A	18	25	+ 7
B	17	_____	+ 5
C	18	27	+ 9

What is the final temperature for reaction **B**? Write your answer in the table.

1 mark

- (b) What name is given to reactions that heat the surroundings?

1 mark



Name:

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HWK 8C8: Reactions of Acids

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
chimed toner (1 word)	An _____ reaction is one in which energy from the surroundings is transferred to the products. This means the temperature of the surroundings decreases.	
toxic me her (1 word)	An _____ reaction is one in which energy is transferred to the surroundings from the reactants. This means the temperature of the surroundings increases.	

Read through the new vocabulary and definitions below .

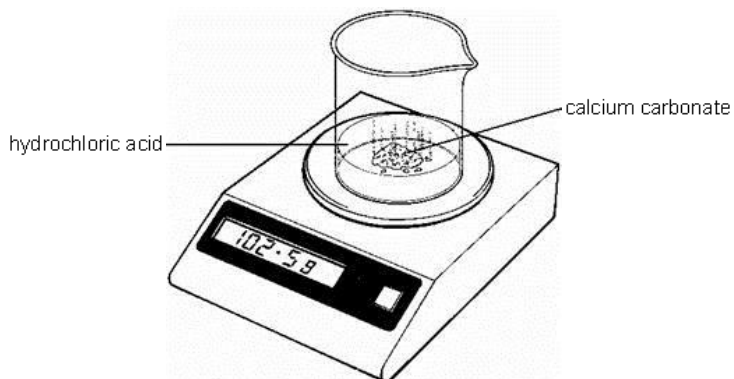
Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
acid	An acid is a solution with a pH value less than 7.
alkali	An alkali is a soluble base.
base	A substance that neutralises an acid – those that dissolve in water are called alkalis.
concentrated	A solution is concentrated if it has a large number of solute particles per unit volume (litre or cubic metre).
corrosive	A substance is corrosive if it can burn your skin or eyes.
dilute	A solution is dilute if it has a small number of solute particles per unit volume (litre or cubic metre).
irritant	A substance that makes your skin itch or swell up a little.
pH scale	The pH scale shows whether a substance is acidic, alkaline, or neutral. An acid has a pH between 0 and 7. An alkaline has a pH between 7 and 14. A solution of pH 7 is neutral.
strong acid	An acid in which all of the acid particles split up when it dissolves in water.
weak acid	An acid in which only some of the acid particles split up when it dissolves in water.
neutral	A liquid that is neither acidic nor alkaline and has a pH of 7.



Q1.

Ben put a beaker weighing 50 g on a balance. He added 50 g of dilute hydrochloric acid and 2.5 g of calcium carbonate to the beaker. The total mass of the beaker and its contents was 102.5 g.

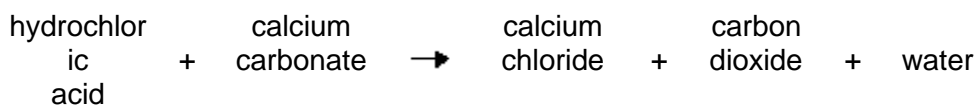


- (a) The hydrochloric acid reacted with the calcium carbonate. How could Ben tell that a chemical reaction was taking place in the beaker?

.....
.....

1 mark

- (b) The word equation for the reaction which took place is:



When the reaction stopped, the total mass had decreased from 102.5 g to 101.4 g.

Some water had evaporated from the beaker.

What else caused the drop in mass?

Use the word equation to help you answer the question.

.....
.....

1 mark

- (c) When the reaction stopped, Ben tested the contents of the beaker with universal indicator paper. The calcium carbonate had neutralised the acid. What is the colour of universal indicator paper in a neutral solution?

.....

1 mark

- (d) Metals react with acids.
What gas is produced when a metal reacts with an acid?

.....

1 mark



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HWK 8C9: Neutralisation

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
rule ant (1 word)	A _____ liquid is neither acidic nor alkaline and has a pH of 7.	
duel it (1 word)	A solution is _____ if it has a small number of solute particles per unit volume (litre or cubic metre).	
dragons tic (2 words)	A _____ _____ is one in which all of the acid particles split up when it dissolves in water.	

Read through the new vocabulary and definitions below .

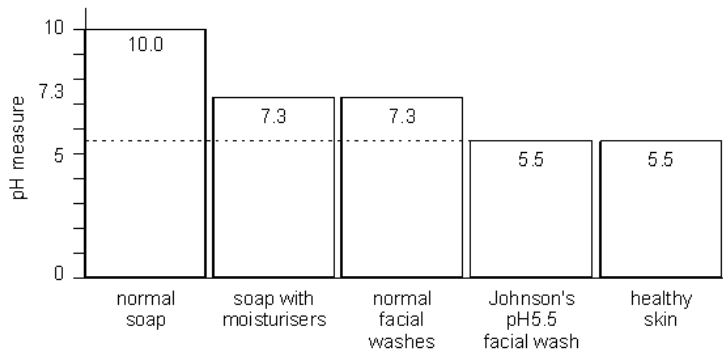
Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
indicator	Substances used to identify whether unknown solutions are acidic or alkaline. The colour of an indicator is different in acidic and alkaline solutions.
litmus	An indicator. Blue litmus paper goes red on adding acid. Red litmus paper goes blue on adding alkali.
universal indicator	An indicator that changes colour to show the pH of a solution. It is a mixture of dyes.
neutralisation	In a neutralisation reaction, an acid cancels out a base or a base cancels out an acid.
salt	A salt is a compound in which the hydrogen atoms of an acid are replaced by atoms of a metal element.



Q1.

The chart is taken from a bottle of *Johnson's pH5.5 Facial Wash*.



(a) From the information in the chart give:

(i) a substance which is almost neutral.

.....

1 mark

(ii) the substance which is most alkaline.

.....

1 mark

(b) Tick **one** box to describe Johnson's facial wash.

It is very alkaline.

1 mark

It is slightly alkaline.

It is neutral.

It is slightly acidic.

(c) A bee sting is acidic. Which **one** of the substances given in the chart would be best to neutralise the sting?

.....

1 mark

Q2.

Paul had four substances:

citric acid

copper sulphate

indigestion tablet

sugar

He dissolved 1 g of each substance in 20 cm³ of distilled water.

He used universal indicator to find the pH of each solution.

(a) Sugar solution does **not** change the colour of green universal indicator.

What does this tell you about sugar solution?

Tick the correct box.

It is an acid.

It is an alkali.

It is neutral.

It is sweet.

(b) Indigestion tablets neutralise acid in the stomach.

What does this tell you about indigestion tablets?

.....1 mark



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HWK 8C10: Speeding Up Reactions

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
Last (1 word)	A _____ is a compound in which the hydrogen atoms of an acid are replaced by atoms of a metal element	
Astronaut lie in (1 word)	In a _____ reaction, an acid cancels out a base or a base cancels out an acid.	
slum it (1 word)	An indicator. Blue _____ paper goes red on adding acid. Red _____ paper goes blue on adding alkali.	

Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
Concentration	The amount of a substance dissolved in a certain volume of liquid.
Surface Area	A measure of the total area that the surface of an object occupies.
Rate	How quickly something happens.
Variable	A factor that can change.



Q1.

Two groups of pupils investigated the factors affecting the time taken for an indigestion tablet to dissolve in 100 cm³ of water.

Group 1 recorded their results in the table opposite..

tablet	time taken to dissolve (s)
whole tablet	34
broken tablet	28
finely crushed tablet	22

(a) What factor did group 1 change as they carried out their investigation?

.....
1 mark

(b) Before the investigation, group 1 made a prediction. They found this prediction was supported by the results in the table.

What prediction did group 1 make?
.....
.....
1 mark

Group 2 investigated how the temperature of the water affects the time taken for a whole tablet to dissolve.

temperature of water (°C)	time taken to dissolve (s)
65	24
40	35
15	90
5	100

Here are their results:

(c) What factor did group 2 change as they carried out their investigation?
.....
1 mark

(d) What pattern do the results recorded by group 2 show?
.....
.....
1 mark

(e) Look at the results presented by group 1 and group 2.

Both groups used the same type of tablet.

Estimate the temperature of water used by group 1.

.....°C
1 mark



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HWK 8C11: Changes to the Atmosphere

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.
Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
bare vial (1 word)	A factor that can change.	
innocent actor (1 word)	The _____ is the amount of a substance dissolved in a certain volume of liquid	
fuse car area (2 words)	The _____ of an object is A measure of the total area that the surface of an object occupies.	

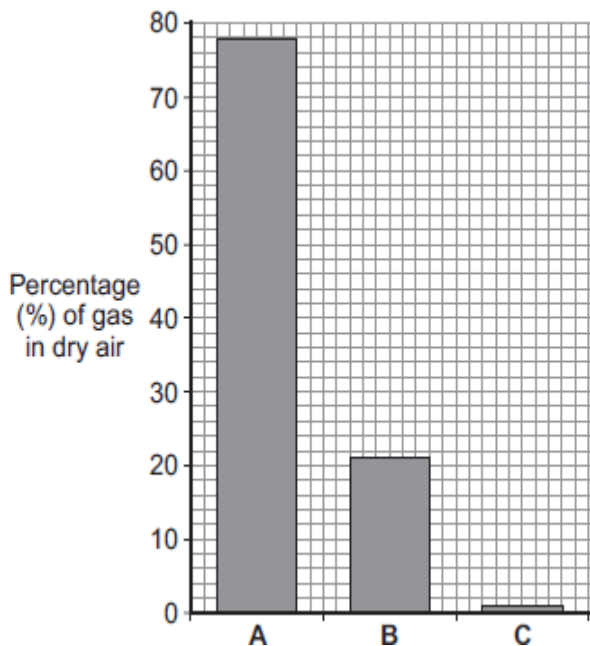
Read through the new vocabulary and definitions below .
Try to make sure you can spell and remember what each word means.

Scientific vocabulary	Definition
atmosphere	The mixture of gases surrounding the Earth.
carbon cycle	The carbon cycle shows carbon sinks and summarises how carbon and its compounds enter and leave the atmosphere and these sinks.
climate change	A long-term change in weather patterns.
fossil fuel	A fuel made from the remains of animals and plants that died millions of years ago. Fossil fuels include coal, oil, and natural gas.
global warming	The gradual increase in the average surface temperature of the Earth.
greenhouse effect	When energy from the Sun is transferred to the thermal energy store of gases in Earth's atmosphere. The greenhouse effect keeps the surface of the Earth warmer than it would otherwise be.
greenhouse gas	A gas that contributes to the greenhouse effect, such as carbon dioxide.
photosynthesis	The process plants and algae use to make their own food, glucose. In photosynthesis, carbon dioxide and water react together to make glucose and oxygen.
respiration	The process that transfers energy in plants and animals. In respiration, glucose reacts with oxygen to make carbon dioxide and water.



Q1 This question is about the Earth's atmosphere today.

(a) The bar chart shows the percentage by mass of the gases in dry air from the atmosphere.



(i) What percentage of the atmosphere is gas **A**?

..... %.

1 mark

(ii) Use gases from the box to answer this question.

bromine	hydrogen	nitrogen	oxygen
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Name gas **A** and gas **B** shown on the bar chart.

Gas **A**:

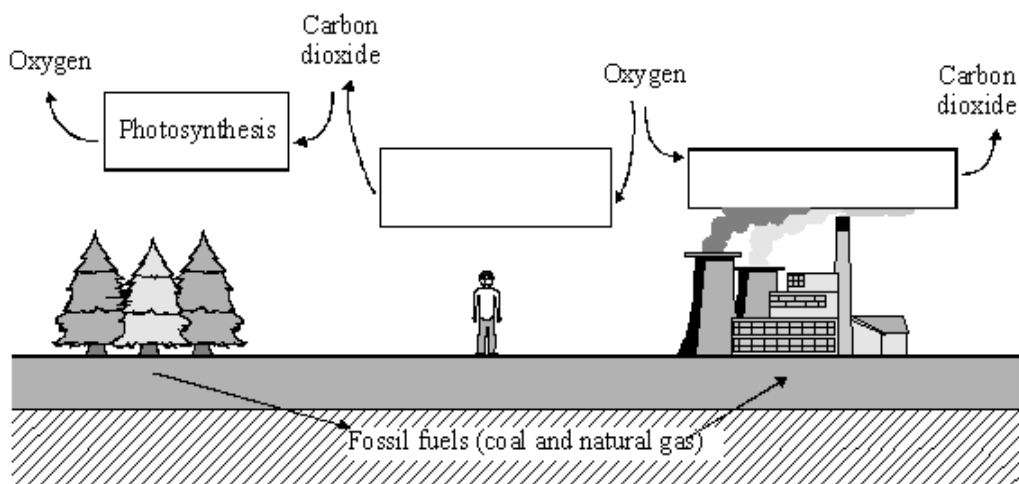
.....

Gas **B**:

.....

2 marks

Q2 In the carbon cycle the amounts of carbon dioxide and oxygen in the air are changed by several processes.



(a) The names of some processes are given in the box below.

combustion	decomposition	neutralisation
photosynthesis		respiration

Choose the correct process for each box in the diagram.

The first one has been done for you.

2 marks



Name:

Due Date

HWK 8C12: Lifecycle of a Product

Unscramble the anagrams of the vocabulary you learnt last time and write them in the box below.

Use the unscrambled words to complete the definition.

Anagram	Definition	Scientific vocabulary
cheating camel (2 words)	_____ is a long-term change in weather patterns	
reshape tom (1 word)	The _____ is the mixture of gases surrounding the Earth.	
fuss oil elf (2 words)	_____ were made from the remains of animals and plants that died millions of years ago. They include coal, oil, and natural gas.	

Read through the new vocabulary and definitions below .

Try to make sure you can spell and remember what each word means.

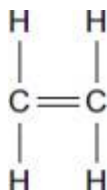
Scientific vocabulary	Definition
ceramic	A hard, durable, non-metallic material which is generally unaffected by heat e.g. china and glass
composite material	A mixture of two or more materials with contrasting properties, combined to produce a material with the properties of both.
electrolysis	Using electricity to split up a compound into its elements.
extraction	Separation of a metal from a metal compound.
natural resources	Materials from the Earth, its atmosphere, and the oceans, which act as raw materials for making a variety of products.
ore	A naturally occurring rock that contains enough of a mineral to make it worth getting the mineral – and then the metal it includes – out of the rock.
polymer	A molecule made by joining up thousands of smaller molecules in a repeating pattern. Plastics are synthetic polymers, and starch is a natural polymer.
recycling	Collecting and processing a material so that it can be used again.



Q1.

Crude oil is used to make useful substances such as alkenes and plastics.

(a) The alkene shown is ethene.



(i) Tick (✓) the correct formula for ethene.

1 mark

Formula	Tick (✓)
CH ₄	
C ₂ H ₄	
C ₂ H ₆	

(ii) Tick (✓) the name of the plastic formed when many ethene molecules join together.

1 mark

Name of plastic	Tick (✓)
Poly(ethene)	
Poly(ethenol)	
Poly(propene)	

(b) Draw a ring around the correct answer in the box to complete the sentence.

Plastic waste needs to be removed from beaches because it

1 mark

decomposes.
is reactive.
is not biodegradable.

(c) Suggest a problem caused by most plastics going to landfill sites.

.....
.....

1 mark

(d) Suggest **one** way of reducing the amount of plastics going to landfill sites.

.....
.....

1 mark