

Draw the arrangement of particles in a solid, liquid and gas in the boxes below.



solid liquid gas

Explain why solids cannot flow.

How can boiling points help to identify substances?

Define the following terms:

element:

compound

Complete the tables below.

Substance	Element or Compound?
oxygen	
hydrochloric acid	
carbon dioxide	
magnesium	

Name of Element	Chemical Symbol
oxygen	
potassium	
lithium	
magnesium	

Write the word equation for the following reaction:

magnesium + oxygen _____

State four observations you might make if a chemical reaction is occurring.

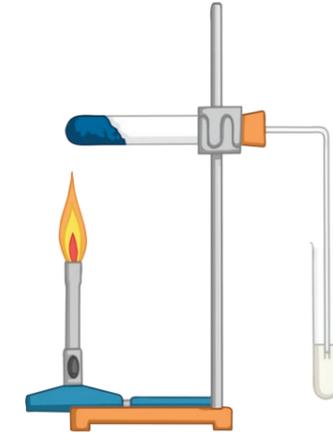
- _____
- _____
- _____
- _____

Give two examples of a physical change.

- _____
- _____

What is meant by conservation of mass?

The diagram shows thermal decomposition of a metal carbonate.



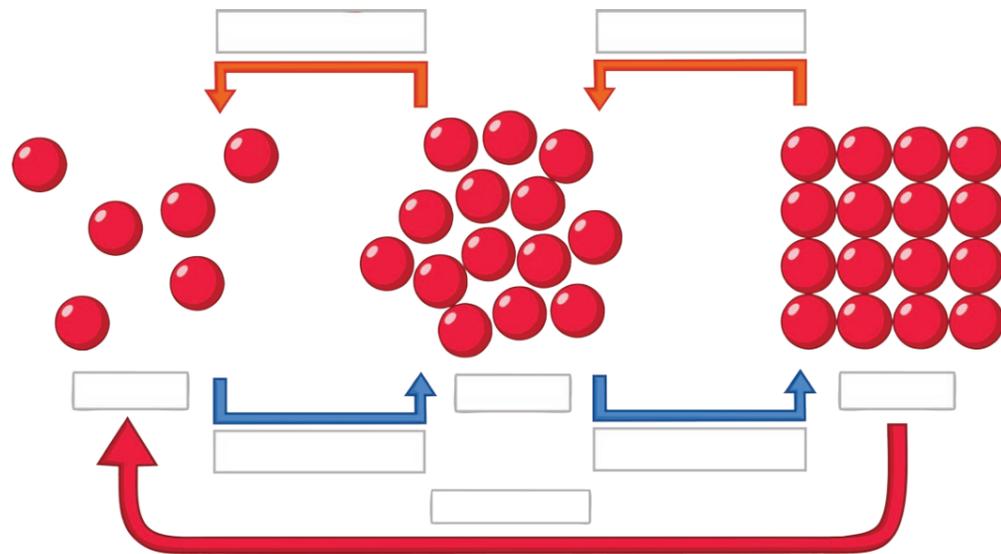
What will happen to the limewater as the metal carbonate is heated?

What does this show?

Choose the correct phrase.

An exothermic reaction **gives out/takes in** energy to its surroundings.

Substances can change from one state to another. Complete the diagram to label the processes.

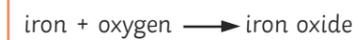
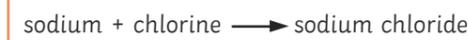


Explain the following terms.

sublimation:

diffusion:

For the equations below, circle the reactants and underline the products.



What is combustion?

Write an equation to show the complete combustion of methane.

What does the pH of a solution tell you?

Describe how copper sulfate crystals can be made from copper oxide and sulfuric acid.

Complete the table to show whether the following are metals or non-metals.

Element	Metal or Non-Metal?
oxygen	
magnesium	
neon	
lithium	

Name four physical properties of metals.

- _____
- _____
- _____
- _____

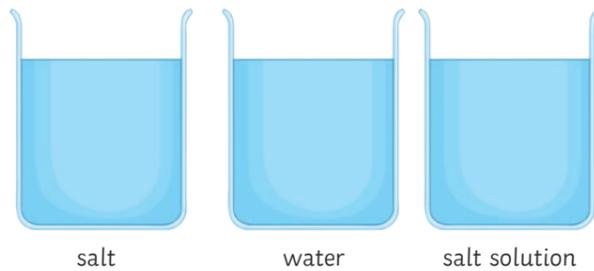
Fill in the gaps:

On the periodic table, vertical columns are called _____ and horizontal rows are called _____

Write yes or no as to whether a reaction will happen between...

- iodine + potassium chloride _____
 bromine + potassium iodine _____
 bromine + potassium chloride _____

In terms of particles, complete the beakers below to show what happens when salt is dissolved in water.

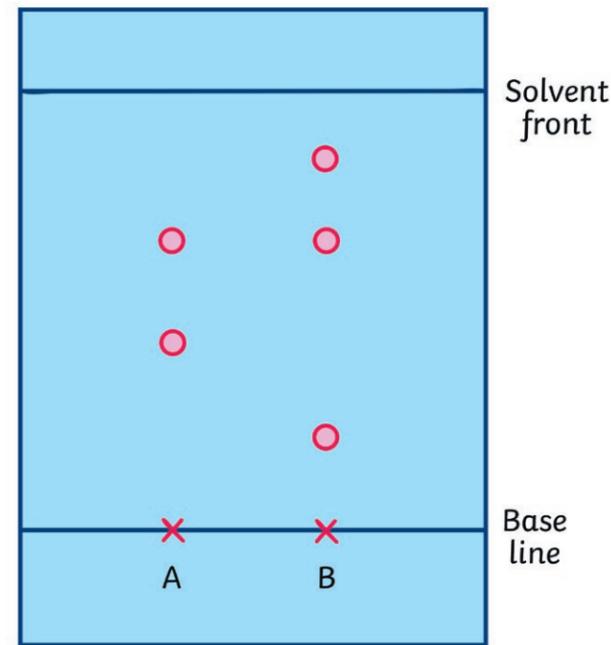


Define the following terms.

solvent: _____
 solute: _____

Describe the method used to obtain salt crystals from rock salt.

Look at the chromatogram.



Why is pencil used to draw the base line?

Which dye contains three different pigments?

Draw lines to match the reaction of the metal when added to acid.

magnesium	reacts vigorously
copper	reacts steadily
gold	no reaction
zinc	

What is the test for...

hydrogen? _____

oxygen? _____

carbon dioxide? _____

Complete the equations:

magnesium + hydrochloric acid _____

copper + sulfuric acid _____

Name the three main types of rocks and explain how they are formed.

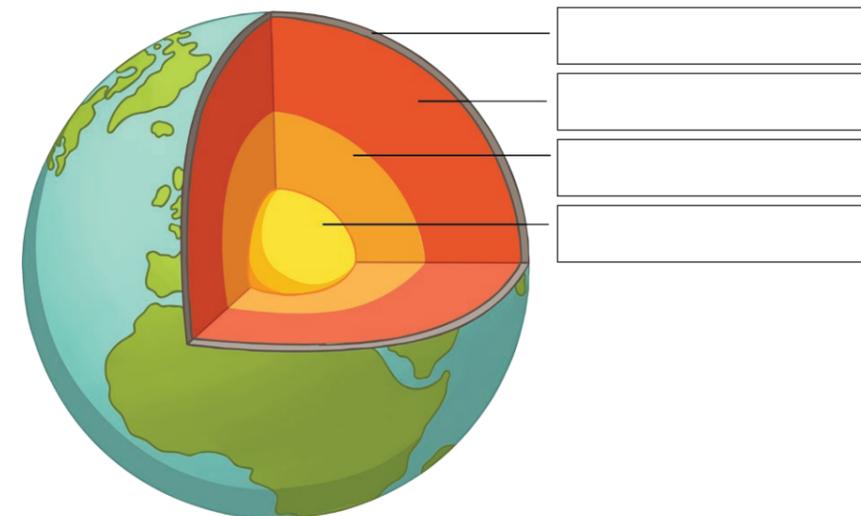
- _____
- _____
- _____

The carbon cycle is made up of four processes, what are they?

- _____
- _____
- _____
- _____

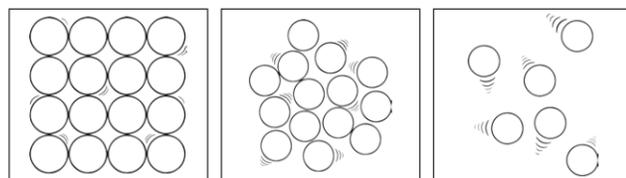
What are the impacts of climate change?

Use the following labels to label the diagram below: mantle, outer core, crust inner core.



The inner core consists of which two metals? _____

Draw the arrangement of particles in a solid, liquid and gas in the boxes below.



solid liquid gas

Explain why solids cannot flow.

The particles are packed tightly together and can only vibrate.

How can boiling points help to identify substances?

Each substance has a specific boiling point.

Define the following terms:

element:

Consists of one type of atom only.

compound

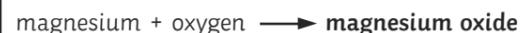
Contains two or more elements chemically combined.

Complete the tables below.

Substance	Element or Compound?
oxygen	element
hydrochloric acid	compound
carbon dioxide	compound
magnesium	element

Name of Element	Chemical Symbol
oxygen	O
potassium	K
lithium	Li
magnesium	Mg

Write the word equation for the following reaction:



State four observations you might make if a chemical reaction is occurring.

- change in temperature**
- bubbling/fizzing**
- smell**
- sparks**

Give two examples of a physical change.

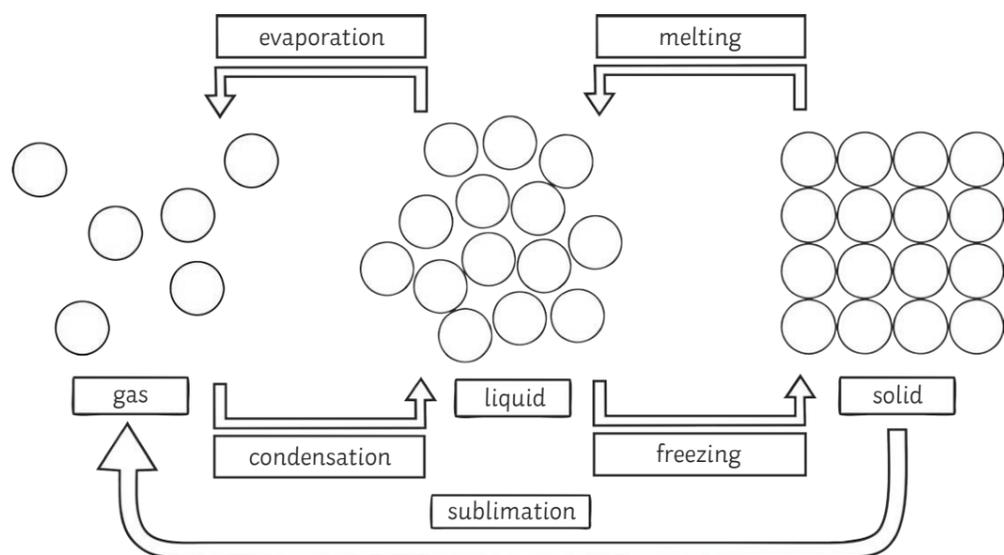
- melting chocolate**
- clay being moulded into a new shape**

Or any correct answer.

What is meant by conservation of mass?

mass of reactants = mass of products

Substances can change from one state to another. Complete the diagram to label the processes.



Explain the following terms.

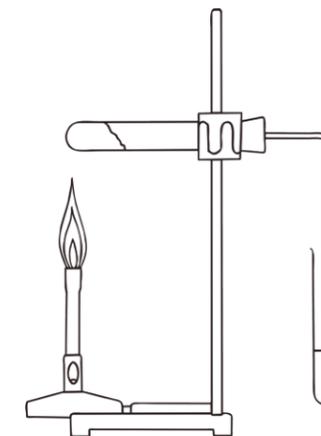
sublimation:

The change of state from a solid to a gas.

diffusion:

The movement of particles from a concentrated area to a less concentrated area.

The diagram shows thermal decomposition of a metal carbonate.



What will happen to the limewater as the metal carbonate is heated?

It will turn cloudy.

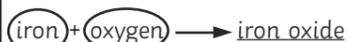
What does this show?

The production of carbon dioxide.

Choose the correct phrase.

An exothermic reaction **gives out/takes in** energy to its surroundings.

For the equations below, circle the reactants and underline the products.



What is combustion?

The burning of a substance.

Write an equation to show the complete combustion of methane.



What does the pH of a solution tell you?

How acidic or alkaline it is.

Describe how copper sulfate crystals can be made from copper oxide and sulfuric acid.

**Add copper oxide to sulfuric acid and stir;
filter to remove excess copper oxide;
evaporate the water by heating;
copper sulfate crystals will appear.**

Complete the table to show whether the following are metals or non-metals.

Element	Metal or Non-Metal?
oxygen	non-metal
magnesium	metal
neon	non-metal
lithium	metal

Name four physical properties of metals.

1. **conduct electricity**
2. **malleable**
3. **sonorous**
4. **ductile**

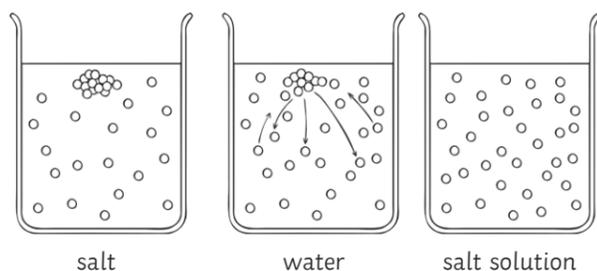
Fill in the gaps:

On the periodic table, vertical columns are called **groups** and horizontal rows are called **periods**.

Write yes or no as to whether a reaction will happen between...

- iodine + potassium chloride **no**
 bromine + potassium iodide **yes**
 bromine + potassium chloride **no**

In terms of particles, complete the beakers below to show what happens when salt is dissolved in water.



Define the following terms.

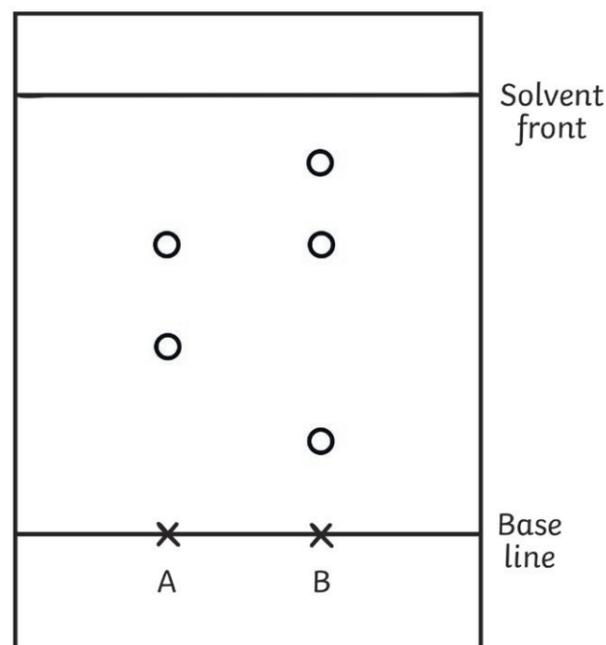
solvent: **The liquid in which something dissolves.**

solute: **The thing that dissolves.**

Describe the method used to obtain salt crystals from rock salt.

Crush the rock salt and add water. The salt will dissolve in the water. Filter the solution; the sand and rocky pieces collect in the filter paper. Pour salt water into an evaporating dish and heat with a Bunsen burner. The water evaporates and the salt crystals are left behind.

Look at the chromatogram.



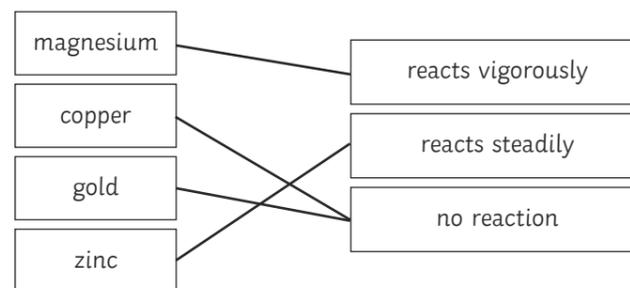
Why is pencil used to draw the base line?

It is insoluble.

Which dye contains three different pigments?

B

Draw lines to match the reaction of the metal when added to acid.



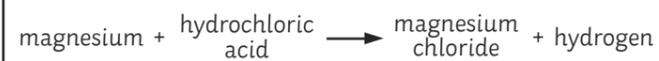
What is the test for...

hydrogen? **squeaky pop**

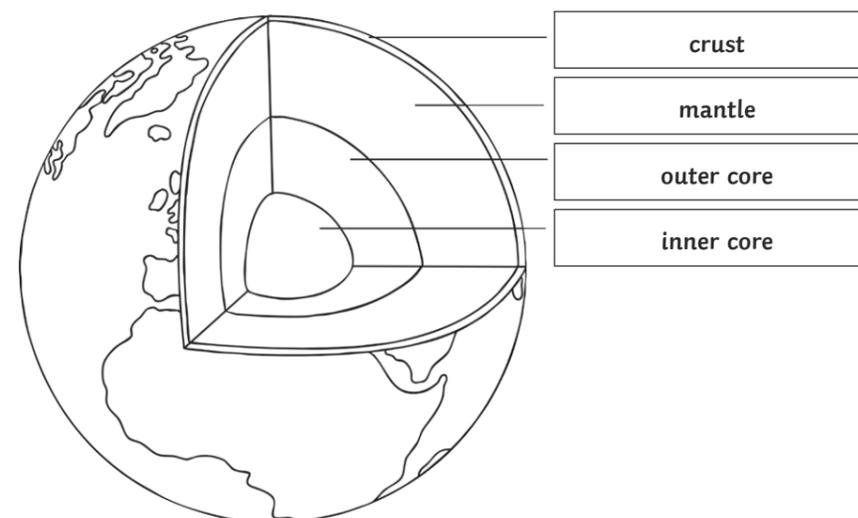
oxygen? **Relights a glowing spill.**

carbon dioxide? **Turns limewater cloudy.**

Complete the equations:



Use the following labels to label the diagram below: mantle, outer core, crust inner core.



The inner core consists of which two metals? **nickel and iron**

Name the three main types of rocks and explain how they are formed.

1. **Sedimentary: small pieces of rock cemented together.**
2. **Igneous: when liquid rock cools and solidifies.**
3. **Metamorphic: when sedimentary or igneous rocks have undergone high pressure and changed.**

The carbon cycle is made up of four processes, what are they?

1. **photosynthesis**
2. **combustion**
3. **respiration**
4. **decomposition**

What are the impacts of climate change?

Sea levels rising, floods, droughts, heat waves. Any other reasonable answers.