a

Draw and label an atom. Include labels for the following: neutron, proton, electron.

True or false?

1. The radius of an atom is 0.1nm
2. Most of the mass is in the shell of the atom.

b

Fill in the table to show the charges and mass of the components of an atom.

Name	Charge	Relative Mass
proton		
neutron		
electron		

What is the overall charge of an atom?

Positive

Negative

No charge

c

A compound is 2 or more _____, chemically _____.

Which of the following are compounds?
Put a ring round them.

oxygen, salt water, magnesium oxide, sodium chloride, nitrogen

Why have you circled the ones you have?

_____

_____

d

What are the symbols for the following elements?

Element	Symbol
oxygen	
lithium	
sodium	
potassium	
helium	
carbon	
magnesium	

e

Complete the following diagram for sodium, include the atomic number and the atomic mass number.

Na

What is the mass number?

How do you calculate neutron number?

f

Isotopes are elements with a different number of _____ but the same number of _____, e.g. carbon 12 and carbon 14.

How can you use isotopes to calculate the relative atomic mass? Write down the equation.

g

Complete and balance the following equations. What is the name of the compound formed?

$Mg + O_2 \rightarrow MgO$

_____

$Be + S \rightarrow BeS$

_____

$Be + F_2 \rightarrow$

_____

$K + Cl_2 \rightarrow$

_____

h

Mixtures

Write the definition of a mixture. Give two examples.

_____

_____

_____

_____

_____

i

Name the compounds and the elements they contain.

NaCl - _____

MgO - _____

MgS - _____

FeS - _____

j

What is the ratio of the elements in the following compounds?

e.g. CaO = 1:1

$MgCl_2$ =

K_2O =

NaCl =

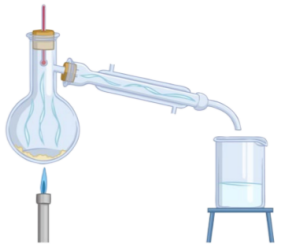
lithium fluoride =

sodium hydroxide =

k

Separating Mixtures

What are the following separation techniques?



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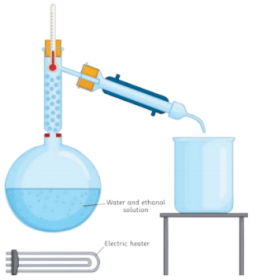


_____

What separation technique would you use to separate out different inks in pens?

_____

How can salt be collected using the process of crystallisation?

_____

_____

Sand and water can be separated by using a process called

_____

Describe, in 4 steps, how to collect salt from rock salt.

1. _____
2. _____
3. _____
4. _____

a

Complete the electronic structure diagrams for:

oxygen

magnesium

b

Describe why the noble gases are so unreactive.

The boiling points of the noble gases increase/decrease as you go down the group. (delete the wrong answer) Can you explain your answer?

c

Describe what happens to the reactivity of the alkali metals as you go down the group.

Why?

Complete the word and symbol equation for sodium reacting with water:

sodium + water → sodium hydroxide + _____

Na + _____ → NaOH + _____

d

List 3 halogens

_____, _____, _____,

How many electrons do they have in their outer shell?

Describe how the reactivity changes as you go down the group.

Write balanced symbol equations for the following reactions:

bromine + potassium iodide

chlorine + sodium iodide

fluorine + potassium chloride

e

Underline the properties of metals and circle the properties of non-metals:

Strong, low density, malleable, dull, good conductors of heat and electricity, high melting and boiling point, brittle, not good conductors of electricity.

f

James Chadwick discovered the...
(underline the correct answer)

proton

neutron

electron

g

Complete the following dot and cross diagrams for:

NaCl

MgO

h

Complete word equations for the following reactions:

sodium + chlorine →

lithium + iodine →

potassium + bromine →

i

How are the groups arranged in the periodic table?

How can you tell that the alkali metals are very reactive?

How can you tell the noble gases are unreactive?

j

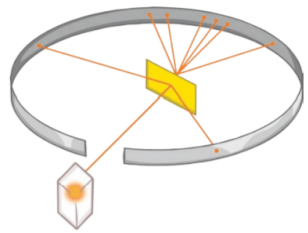
Describe the plum pudding model of the atom.

Draw a diagram.

Why did scientists believe this model?

k

Describe what the alpha scattering experiment showed scientists.



l

Niels Bohr discovered that

Why did Mendeleev leave gaps in the periodic table?

What happened to some of the gaps he left?