

Atoms, elements and compounds



Task 1: Atoms, molecules and elements

a) **Draw** a particle diagram to match the term.



atoms of two different elements



three elements that are molecules



a molecule composed of three elements

b) **Complete** the tables.

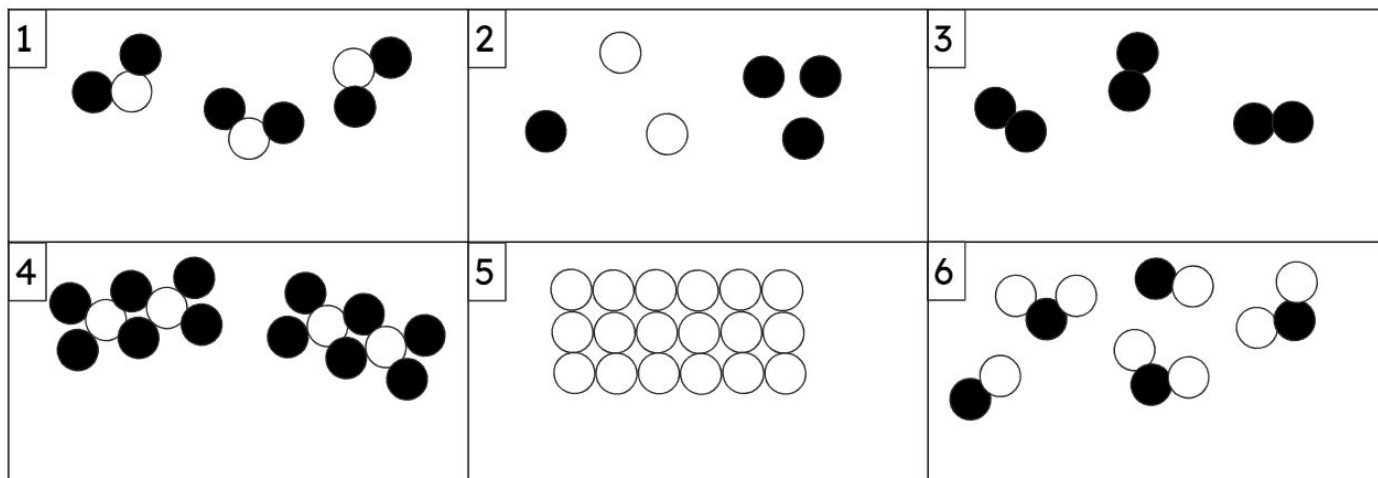
Name	Symbol
calcium	
	Li
magnesium	
	C
beryllium	

Name	Symbol
potassium	
	Al
fluorine	
	Cl
neon	



Task 2: Compounds

a) **Label** each image using two of the keywords below.



atoms

molecule

compound

element

b) **Which** boxes show mixtures?

c) **Explain** why the diagrams you selected are mixtures.

Task 3: Chemical reactions and naming products

a) **Give** the word and balanced symbol equations for the following reactions.

i) Calcium (Ca) reacting with chlorine (Cl_2) to make calcium chloride (CaCl_2).

ii) Potassium (K) reacting with sulfur (S) to produce potassium sulfide (K_2S).

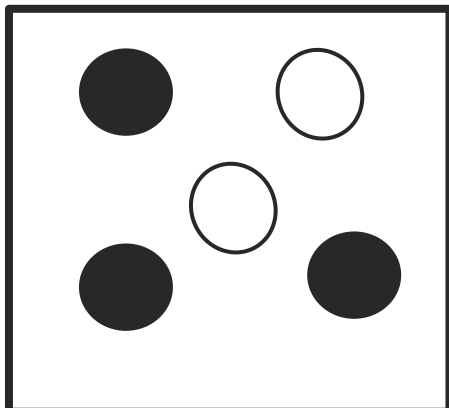
iii) Iron (Fe) reacting with oxygen (O_2) to produce iron oxide (Fe_2O_3).

Atoms present	Compound name	Formula
1 lithium, 1 bromine	lithium bromide	LiBr
1 potassium, 1 fluorine		
2 calcium, 1 iodine		
2 caesium, 1 oxygen		
1 nitrogen, 2 oxygen		
1 iron, 1 sulfur, 4 oxygen		

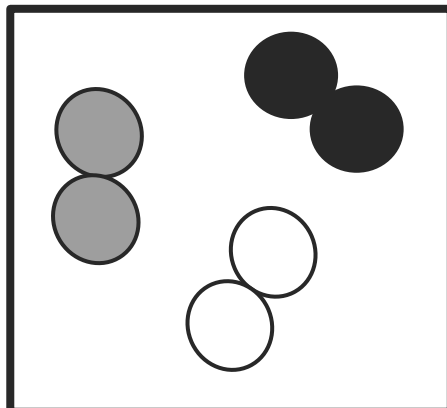


Task 1: Atoms, molecules and elements

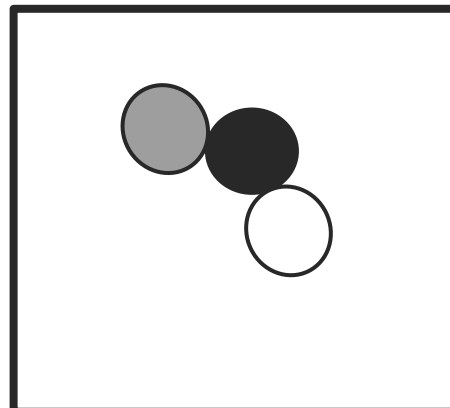
a) Draw a particle diagram to match the term.



atoms of two different elements



three elements that are molecules



a molecule composed of three elements

b) **Complete** the tables.

Name	Symbol
calcium	<i>Ca</i>
<i>lithium</i>	Li
magnesium	<i>Mg</i>
<i>carbon</i>	C
beryllium	<i>Be</i>

Name	Symbol
potassium	<i>K</i>
<i>aluminium</i>	Al
fluorine	<i>F</i>
<i>chlorine</i>	Cl
neon	<i>Ne</i>



Task 2: Compounds

a) **Label** each image using two of the keywords below.

1 <i>molecule compound</i>	2 <i>atom element</i>	3 <i>molecule element</i>
4 <i>molecule compound</i>	5 <i>molecule element</i>	6 <i>molecule compound</i>

atoms

molecule

compound

element

b) **Which** boxes show mixtures? *2 and 6*

c) **Explain** why the diagrams you selected are mixtures.

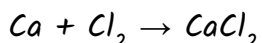
There are two different substances that are not chemically bonded together.

Task 3: Chemical reactions and naming products

a) **Give** the word and balanced symbol equations for the following reactions.

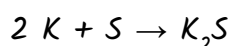
i) Calcium (Ca) reacting with chlorine (Cl₂) to make calcium chloride (CaCl₂).

calcium + chlorine → calcium chloride



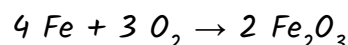
ii) Potassium (K) reacting with sulfur (S) to produce potassium sulfide (K₂S).

potassium + sulfur → potassium sulfide



iii) Iron (Fe) reacting with oxygen (O₂) to produce iron oxide (Fe₂O₃).

iron + oxygen → iron oxide



Atoms present	Compound name	Formula
1 lithium, 1 bromine	lithium bromide	LiBr
1 potassium, 1 fluorine	<i>potassium fluoride</i>	KF
2 calcium, 1 iodine	<i>calcium iodide</i>	Ca ₂ I
2 caesium, 1 oxygen	<i>caesium oxide</i>	Cs ₂ O
1 nitrogen, 2 oxygen	<i>nitrogen dioxide</i>	NO ₂
1 iron, 1 sulfur, 4 oxygen	<i>iron sulfate</i>	FeSO ₄