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Glue on this side

Chemical Literacy

1	I can describe why elements have the names/symbols they have
2	I can define the following terms: atom; element; compound; mixture
3	I can identify atoms, elements, compounds and mixtures from diagrams
4	I can write and understand a word equation
5	I can write and understand a symbol equation
6	I can balance symbol equations

1	atom	The smallest part of an element that can exist.
2	chemical symbol	A one- or two-letter code for an element that is used by scientists in all countries.
3	compound	Pure substances made up of atoms of two or more elements, strongly joined together.
4	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.
5	chemical properties	Features of the way a substance reacts with other substances.
6	group	A column of the Periodic Table. The elements in a group have similar properties.
7	Group 1	The elements in the left column of the Periodic Table, including lithium, sodium, and potassium. Also called the alkali metals.
8	period	A row of the Periodic Table. There are trends in the properties of the elements across a period.
9	trend	A pattern in properties, such as an increase or decrease.

Pupils have studied the periodic table in Y8 and should have basic knowledge and understanding of word and symbol equations.

This topic has been written to introduce our students to describe chemical reactions which will be imperative when entering KS4. *This topic has been written by the HoS for Chemistry to try and ensure that all students have a good start to KS4 with a good understanding of these fundamental topics.*

This topic supports the general teaching of GCSE Chemistry. Pupils will gain confidence in constructing word and symbol equations, and to quickly use the periodic table.

Careers::
Chemist
Chemistry
teacher

This models an element.
There is only one type of atom.

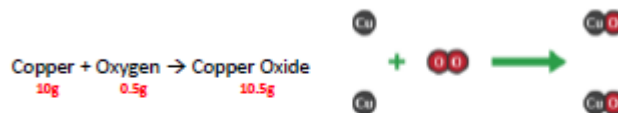


This models a compound.
There are two different elements chemically combined together.

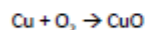


This models a mixture. There are two or more different elements which are not chemically combined.

No atoms are created or destroyed in a chemical reaction. Instead, they just join together in a different way than they were before the reaction, and form products. This means that the total mass of the products in a chemical reaction will be the same as the total mass of the reactants.

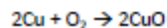


A balanced equation gives more information about a chemical reaction because it gives the symbols and formulae of the substances involved.



The above equation is not balanced because there is one copper atom on both sides of the arrow, but two oxygen atoms on the left hand side, and only one on the right.

You need to adjust the number of units of some substances until you have equal numbers of atoms on both sides of the arrow. You cannot change the formulae of a substance (you can't change the small number).



The changes in a chemical reaction can be modelled using equations. In general we write:

Reactants → Product

The reactants are shown to the left of the arrow, and the products are shown to the right of the arrow. The arrow tells us a chemical reaction has taken place.



The iron and oxygen react together (reactants) to produce iron oxide (product).

Metal + Non-Metal (which contain two elements)

1. The **metal** always goes first.
2. The ending of the **non-metal** changes to 'ide'.



To name compounds which have a metal, non-metal and oxygen (three or more elements)

1. The **metal** always goes first.
2. The ending of the **non-metal** changes to 'ate'.



The Marketing Table

																H																	He
Li	Be															B	C	N	O	F	Ne												
Na	Mg															Al	Si	P	S	Cl	Ar												
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr																
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe																
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn																
Fr	Ra	Ac																															

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 Religion—mainstream:

