

Atom	The smallest part of an element can exist
Chemical formula	A formula that shows the number of atoms of each element in a compound
Chemical symbol	A one- or two- letter code for an element that is used by scientists in all countries
Compound	A substance made up of atoms of two or more different elements chemically bonded
Element	A substance made of one type of atom
Molecule	A group of two ore more atoms, strongly joined together
Periodic Table	A table of all the elements, in which elements with similar properties are grouped together

- A substance made up of atoms of two or more different elements chemically bonded.
- can be broken down into other substances.

Oxygen	= O
Chlorine	= Cl
Sodium	= Na
Hydrogen	= H
Aluminium	= Al
Gold	= Au
Copper	= Cu
Potassium	= K



Box 4: Molecules

A molecule is more than one atom chemically joined together. Molecules can be made up from:

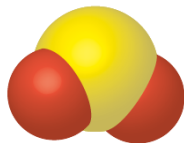
Several of the same type of atom (elements)

e.g. oxygen gas O_2



Two or more types of atoms (compounds)

e.g. sulfur dioxide SO_2



Box 5: Chemical Formulae

A chemical formula tells you the relative number of atoms of each element that is in the compound.

H_2O two hydrogen atoms and one oxygen atom.

$MgCl_2$ two chlorine atoms and one magnesium atom.

$NaOH$ one sodium atom, one oxygen atom, and one hydrogen atom

$CuSO_4$ one copper, one sulfur and four oxygens

$Ca(OH)_2$ one calcium, two oxygens and two hydrogens

When you are writing chemical formulae, write the numbers:

- to the right of their chemical symbol, just below the line.
- smaller than the chemical symbols.

Box 6: Naming compounds

In a compound made of a metal and a non-metal, the name of the metal comes first. For example, iron bromide, magnesium fluoride

If the non-metal atom is oxygen, it is called oxide. If the non-metal atom is chlorine, it is called chloride. For example, copper oxide, sodium chloride

In a compound made of a non-metal and oxygen, oxygen comes second and is called monoxide if there is one oxygen atom or dioxide for two oxygen atoms. For example, carbon monoxide, sulfur dioxide

Box 7: Key Skills

Identify the chemical symbols of elements

Use the Periodic Table to find elements

Determine the chemical formula of compounds and elements

Box 8: Pathways

Previous knowledge: Particle model

Future links: Periodic table, atomic structure, quantitative chemistry

Careers: materials science, chemist, research scientist, metal workers, science technicians, electricians, engineers

Box 9: Cross curricular links

Physics – particle model, atomic structure

Maths – ratio