

Atoms and the Periodic Table Knowledge Organiser

Key Words

atom	The smallest part of an element that can exist.
bond	An attraction between atoms or molecules that enables the formation of chemical compounds.
chemical formula	A series of chemical symbols showing the number of atoms of each element in a compound.
chemical reaction	A process that involves rearrangement of atoms to produce new substances.
chemical symbol	A letter or series of letters used to represent an element, e.g. C for carbon, Na for sodium.
compound	A substance made up of two or more different elements chemically bonded together.
element	A substance made of only one type of atom.
mixture	A substance consisting of two or more substances not chemically combined together.

Elements

An element is a substance that cannot be broken down into other substances. The smallest part of an element that can exist is an atom.

Each element is represented by a symbol. The first letter of the symbol is always capitalised, any following letters are lower case.

The symbols for the elements are arranged on the periodic table.

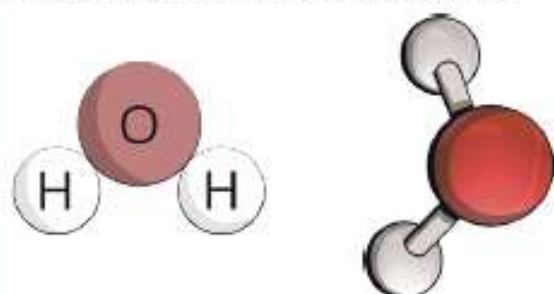
atomic mass	→ 23
element symbol	→ Na
element name	→ Sodium
atomic number	→ 11

Mixtures

Compounds

A compound is a substance made when two or more elements are chemically bonded together.

A compound can be represented by a diagram. The atoms are shown touching each other or joined by a stick that represents a bond.



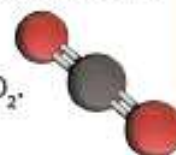
Water is a compound made from one oxygen atom and two hydrogen atoms. Its formula is H_2O .

Compound Formulae

The formula of a compound tells you:

- which elements the compound is made from.
- how many atoms of each element there are.

Carbon dioxide has the formula CO_2 .



C is the symbol for carbon. There are no subscript numbers after the C, so we know there is only one atom of carbon in the compound.



O is the symbol for oxygen. There is a subscript 2 after the O, so we know there are two atoms of oxygen in the compound.