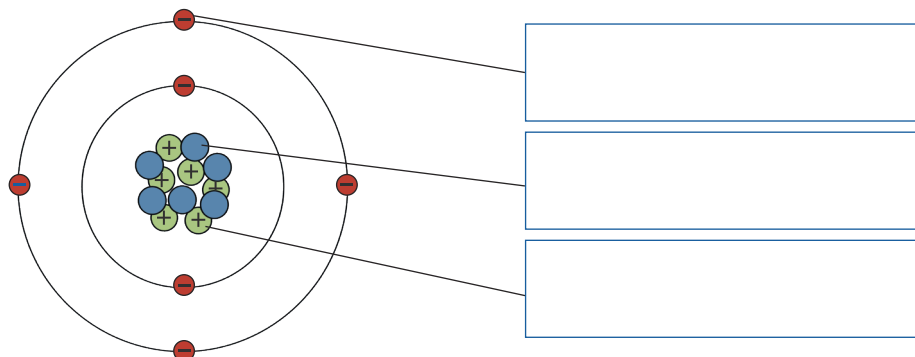


Atoms, Elements and Compounds

Atoms are tiny particles which make up all substances and matter. They contain a central nucleus made up of neutral neutrons and positively charged protons. Negatively charged electrons orbit the nucleus.

1. Label the diagram of the atom.



An element is made up of only one type of atom. There are around 100 different elements, which can all be found on the periodic table.

A compound is formed when two or more different atoms are chemically bonded together. For example, water (H_2O) is a compound made up of hydrogen and oxygen atoms. Compounds can be represented by their chemical formula; this shows the number of atoms of each element present in the compound.

2. Complete the table below. The first row has been done for you.

You might find it helpful to use a periodic table for this question.


Name of Substance	Chemical Formula	Number of Atoms of Each Element
water	H_2O	2 × hydrogen, 1 × oxygen
		1 × magnesium, 1 × oxygen
carbon	C	
		2 × oxygen
methane	CH_4	
		1 × iron
glucose	$C_6H_{12}O_6$	
		1 × hydrogen, 1 × chlorine
sulfur dioxide	SO_2	

3. Sort the following substances into the table. Each substance should be written into one column only.

- | | | |
|-------------------|-------------------|-----------------|
| aluminium | copper sulfate | sodium chloride |
| boron | hydrogen | sulfur |
| carbon dioxide | hydrogen peroxide | tin |
| calcium carbonate | magnesium | zinc oxide |

Elements	Compounds

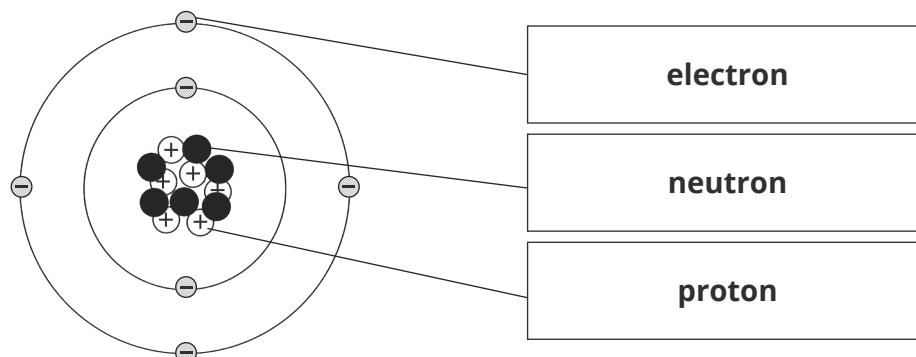
4. For each of the substances below, draw a particle diagram to represent one molecule of the substance. Use the key shown below. The first one has been done for you.

water H ₂ O	carbon dioxide CO ₂	ammonia NH ₃
		
oxygen O ₂	hydrogen H ₂	<div style="border: 1px solid black; padding: 5px;"> <p>Key</p> <ul style="list-style-type: none"> oxygen carbon hydrogen nitrogen </div>

Atoms, Elements and Compounds **Answers**

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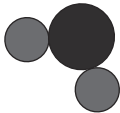













Name of Substance	Chemical Formula	Number of Atoms of Each Element
water	H_2O	2 × hydrogen, 1 × oxygen
magnesium oxide	MgO	1 × magnesium, 1 × oxygen
carbon	C	1 × carbon
oxygen	O₂	2 × oxygen
methane	CH_4	1 × carbon, 4 × hydrogen
iron	Fe	1 × iron
glucose	$C_6H_{12}O_6$	6 × carbon, 12 × hydrogen, 6 × oxygen
hydrogen chloride	HCl	1 × hydrogen, 1 × chlorine
sulfur dioxide	SO_2	1 × sulfur, 2 × oxygen

3. Sort the following substances into the table. Each substance should be written into one column only.

aluminium	copper sulfate	sodium chloride
boron	hydrogen	sulfur
carbon dioxide	hydrogen peroxide	tin
calcium carbonate	magnesium	zinc oxide

Elements	Compounds
aluminium	carbon dioxide
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