



GRADE
8

Chemistry

Module 1

Building blocks



Express Publishing

Atoms

Atoms are the basic building blocks of all materials.



Elements

Elements are made up of one type of atom and cannot be broken down into anything simpler.

Each element has a symbol.

Hydrogen = H

Carbon = C



Elements



Bromine



Mercury



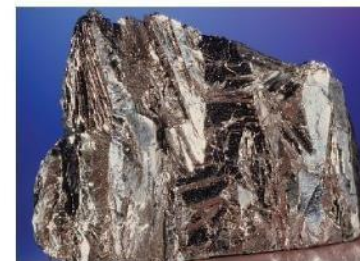
Carbon



Silver



Copper



Zinc

Answers to Question 1.7:

- a) Jewellery = Silver
- b) Mercury = Thermometers
- c) Copper = Plumbing



Molecules/Compounds

A Molecule is formed when two or more atoms join (bond) together chemically.

A Compound is when a molecule is made up of two or more different atoms. Water (H_2O) and Carbon dioxide (CO_2) are compounds because they are made up of more than one type of atom.

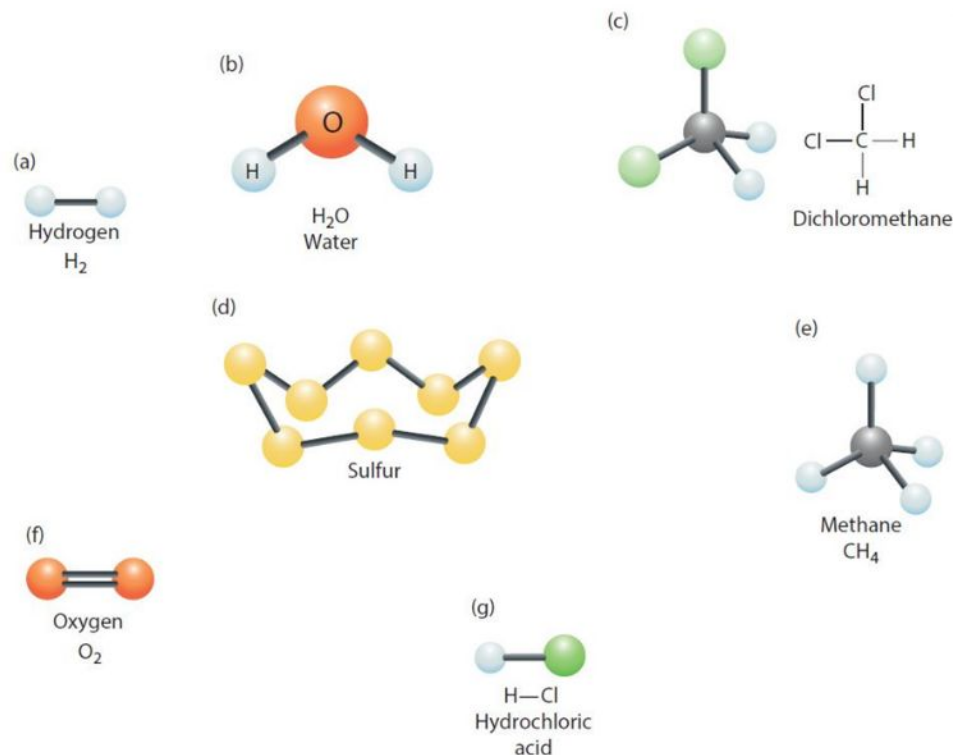


Molecules/Compounds

Answers for Question 1.9:

Elements = Hydrogen, Sulfur and Oxygen

Compounds = Water, Dichloromethane, Methane and Hydrochloric Acid

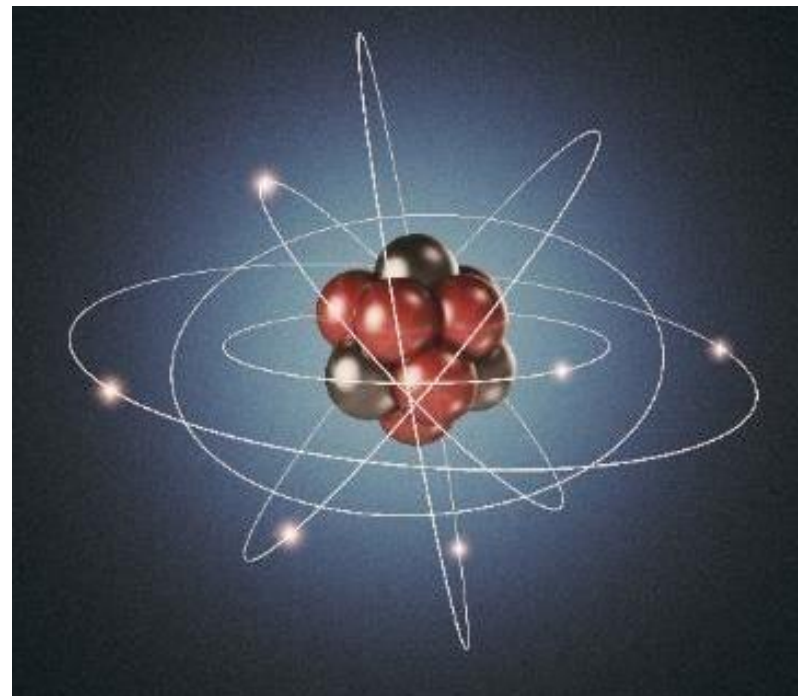


Structure of the Atom

The atom is made up of sub-atomic particles:

- protons
- neutrons
- electrons.

These three particles are different from each other.



Particle	Charge	Mass	Location
Proton	+1	1	Nucleus
Neutron	0	1	Nucleus
Electron	-1	Negligible	Shells

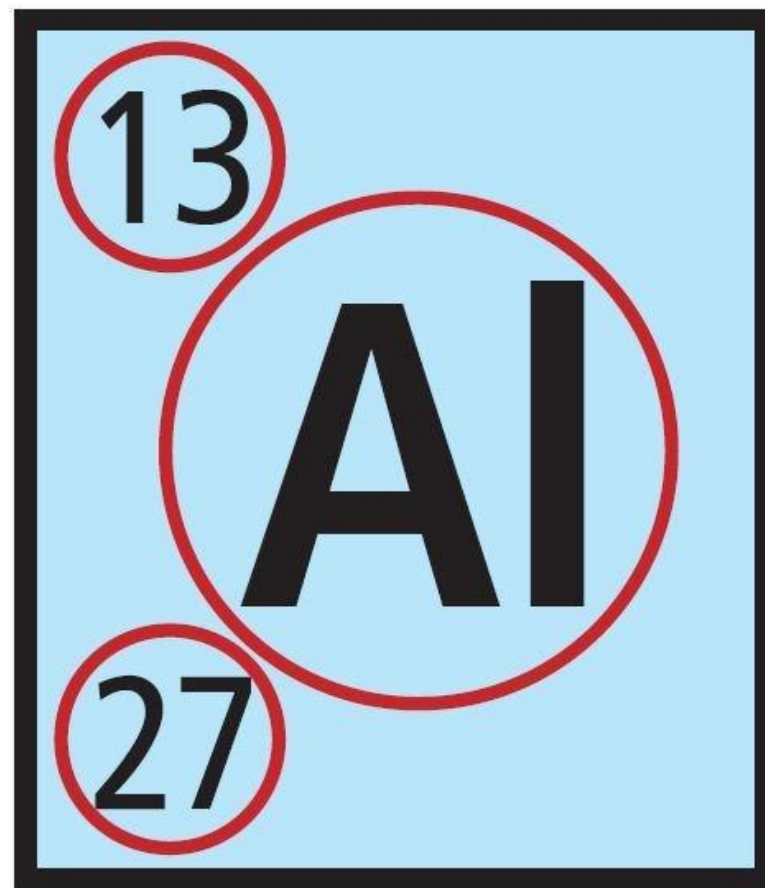


Atomic and Mass numbers

Each Atom has its own atomic and mass number.

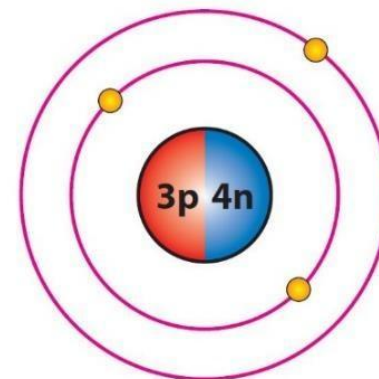
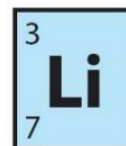
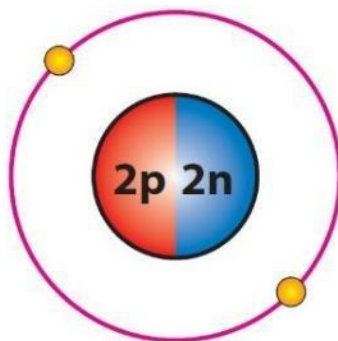
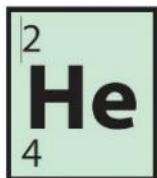
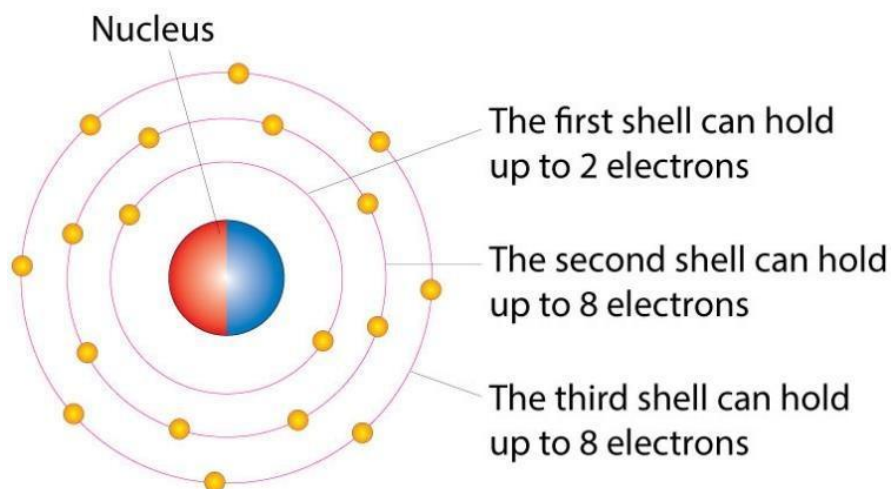
Atomic Number: This tells you how many protons (equal to number of electrons).

Mass Number: This tells you how many protons and neutrons.



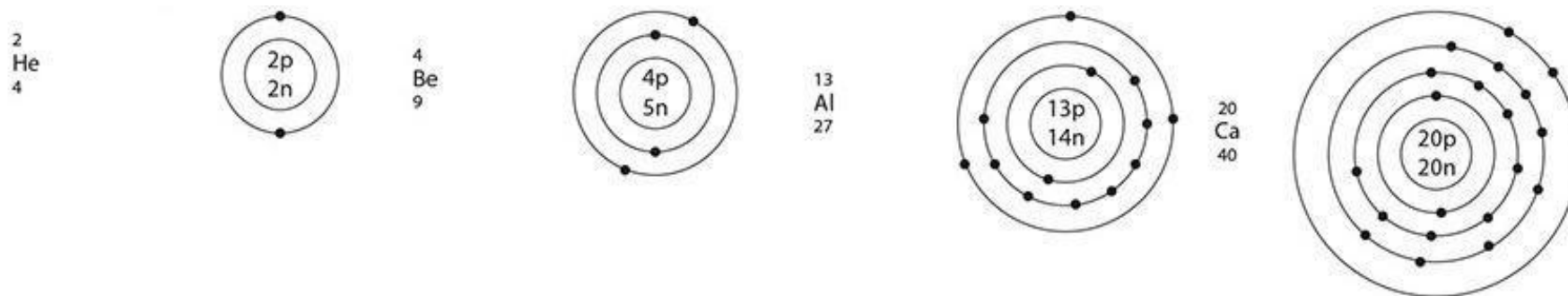
How electrons are arranged

Niels Bohr was the first person to suggest the idea of electron shells containing electrons orbiting the nucleus



How electrons are arranged

Solution to Question 1.18:



Atomic Bomb

US President Harry S Truman made the decision to use the atomic bomb against Japan during World War II.

A second Bomb called Fat Man was dropped on the city of Nagasaki on August 9 1945.

The elements used in the first bomb was Uranium and the element Plutonium was used in the second bomb.

166,000 people died in Hiroshima and 60,000 to 80,000 people died in Nagasaki.

Leukaemia appeared 2 years after the attacks and peaked 4–6 years later.

