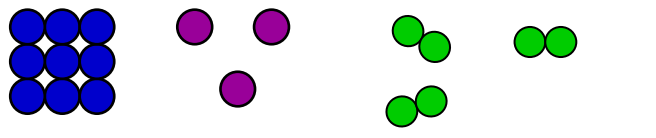


1. Key Words		
1	Element	a substance made up of only one type of atom.
2	Atom	the smallest part of an element that can still be recognised as that element
3	Compound	a substance made from different types of atoms that are chemically bonded together
4	Particle	A very small piece of material (matter) that makes up physical substances
5	Molecule	a particle with two or more atoms bonded together. Can be an element or a compound.
6	Mixture	an impure substance that contains different types of particles, not chemically joined together
7	Pure	All the particles are the same
8	Chemical Change	The process when one or more substances change into entirely new substances with different properties.
9	Physical Change	A change that affects one or more physical properties of a substance but does not change it to another substance.
10	Volume	The amount of 3 dimensional space something takes up
11	Bond	A force of attraction which holds particles together
12	State of matter	Matter is divided into three states: solid, liquid and gas
13	Melting	Change of state from solid to liquid
14	Freezing	Change of state from liquid to solid
15	Evaporation	Change of state from liquid to gas
16	Condensation	Change of state from gas to liquid

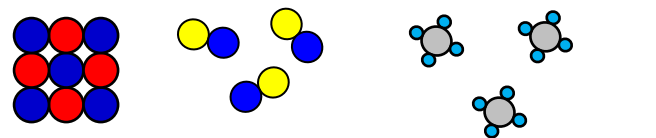
2. Elements and Compounds

We use diagrams to show whether a substance is an element or compound

Elements are made of one type of atom



Compounds are made of two or more types of atom bonded together



Touching atoms represent a chemical bond

4. Mixtures and Compounds

Mixture of elements		Compound
The elements are not bonded to each other	Are the elements bonded to each other?	The elements are bonded to each other
The elements still have their own properties	Properties	It has its own unique properties that are different to the elements
The atoms can be in any ratio	Formula	The formula is fixed with atoms in fixed ratios
It is easy to separate the elements as the atoms are not bonded to each other	Is it easy to separate the elements and why?	It is very hard to separate the elements as the atoms are bonded to each other
Filtration Distillation Chromatography Crystallisation	Some methods can be used to produce the elements	Thermal decomposition

3. The composition of the air

Gas	Percentage of the air
Nitrogen (N ₂)	78
Oxygen (O ₂)	21
Carbon dioxide (CO ₂)	0.035
Others	0.965

5. Properties of metals

1	Conduct electricity	Electrical current can go through it
2	Conduct heat	Transfers heat quickly
3	Malleable	Easily shaped
4	Strong	Doesn't break easily
5	Ductile	Can be stretched into wires
6	High melting point	Melts at a high temperature
7	Lustrous	Shiny when polished
8	Sonorous	Makes a ringing sound
9	Magnetic (only iron, steel, cobalt and nickel)	Attracted to magnets.

6. Metals and non-metals





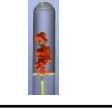
Metals

Non Metals

10. Properties of Solids, Liquids and Gases

1	Solids	Rigid
2		Fixed shape
3		Fixed volume
4		Cannot be squashed
5		Does not flow
6	Liquids	Not rigid
7		No fixed shape
8		Fixed volume
9		Cannot be squashed
10		Flow to fill the container
11	Gases	Not rigid
12		No fixed shape
13		No fixed volume
14		Can be squashed
15		Flow to fill the container

7. Signs of chemical changes

Fizzing	
Colour change	
Temperature change	
Smell	
New chemical is made, e.g precipitation	

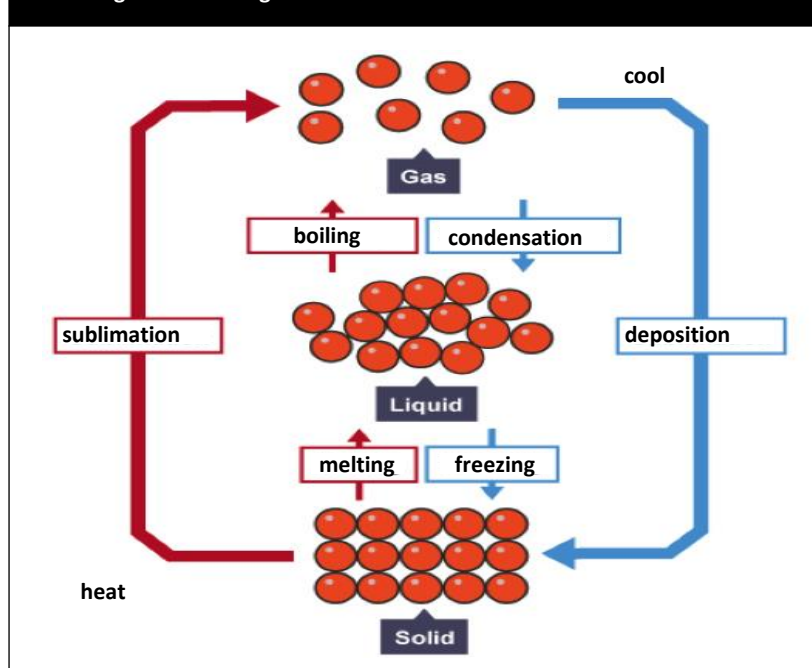
8. Physical and chemical changes

Physical changes	Chemical changes
Reversible	Irreversible
Appearance, shape or size of a substance may change	New substance made
No change in chemical identity (molecules)	

9. Physical Properties

1	Density
2	Mass
3	Volume
4	Colour
5	Smell
6	Hardness
7	Boiling Point
8	Melting Point
9	Malleability (the ability to be molded)
10	Solubility (the ability to be dissolved)

11. Change of State Diagram



12. Change of State Graph

