F4C2
Definition
-Element is a substance that consists of only one type of atom.
-A compound is a substance that contains two or more element that are chemically bonded together.
-Diffusion is the random movement of particles from a region of high concentration to a region of low concentration.
-Melting point is the constant temperature at which a pure solid changes into a liquid
-Boiling point is the constant temperature at which a pure liquid change in to a gas
-Proton number is the number of proton in the nucleus in an atom of that element.
-Nucleon number is the total number of protons and neutron in the nucleus of an atom.
-Isotopes are atoms of the same element with the same ..proton number/number of protons.. but different number of neutrons.
-Valence electron the electrons in the outermost shell of an atom
-Valence shell is the shell which is furthest from the nucleus

Matter=Atom,Molecule,Ion
State of matter=Solid,Liquid,Gas
Solid=particles are orderly/closely packed together | Strong forces between particles | vibrate and rotate in fixes position
Liquid=Closely but disorderly packed together | weaker than solid | moving freely through liquid
Gas=far apart in random arrangement | very weak forces | moving freely and random
Kinetic theory:
-All matter is made up of tiny particles
-particles are always in constant random motion(Brownian Motion)
Diffusion:States of matter ,temperature ,mass of particles
>Melting. >Vaporisation. >Sublimation
Solid Liquid Gas. Solid
Freezing<. Condensation<. Sublimation<

-Water bath is used to avoid directly heating process(naphthalene is highly flammable) & ensure even heating process(balance heating)
-If melting point/boiling point >100 C ,replace water bath by sand bath/oil bath

Super cooling may occur if a liquid is cooled too quickly.It's temperature falls below its ii normal freezing point with the appearance of solid.To avoid supercooling ,stir the malted naphthalene continuously when it is cooling.

Heating of a substance
In solid state
-When solid is heated ,temperature increase—>kinetic energy increase—>particles vibrate faster
In substance consists of a mixture solid and liquid
-Temperature remain constant(the heat energy absorbed is used to overcome the force of attraction between the particles)

Cooling of a substance
In gaseous state
-The substance losses heat to environment—>kinetic energy decrease—>temperature decreases
In a substance consists of a mixture of gas and liquid
-Heat energy lost to the environment is ..the same amount as the/exactly balance by the.. heat energy released ..as the particles attract one another to form a liquid/during the formation of forces of attraction between particles...

The modern atomic model(DocToR reBecCa)
John Dalton=atom
Joseph John Thomson=atom(electron)
Ernest Rutherford=Atom(Proton ,nucleus)
Neil Bohr=electron shells
James Chadwick=neutron

Isotopes=same chemical properties ,differ slightly in physical properties
Uranium-235=produce nuclear energy

Cobalt-60=treat cancer patient/kill cancer cells/to sterilise surgical instrument
Plutonium-238=to power a heart pacemaker
Iodine-131=treatment of thyroid diseases
Carbon-14=to study the path of carbon during the photosynthesis process
Phosphorus-32=to study the metabolism of phosphorus in plants(by using phosphate fertilisers that contain phosphorus-32)

Beta radiation=control the thickness of paper
Gamma radiation=detect whether the canned food or bottled drink is completely filled or only partially filled
Sodium-24=used to detect the leakage of underground pipes
Carbon-14=to determine the age of fossil