Key Words
Science
Year 9

Name_____Class_____

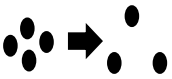
This contains all the keywords and their definitions you'll need for

Year 9 Science

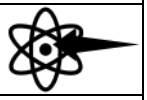
You can make additional notes on the pages to help you understand them.

This keyword list should be on your desk and used every lesson.

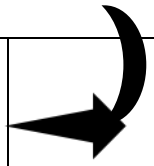
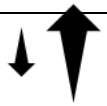
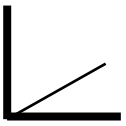
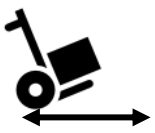
9BB – Biological Systems

Aerobic respiration	A chemical reaction which uses oxygen to break down glucose and release energy	
Allele	A version of a gene - e.g there are blue, brown and green alleles for the eye colour gene	
Alveoli	Tiny air sacs in the lungs where gas exchange occurs	
Anaerobic respiration	A chemical reaction which does not use oxygen to break down glucose	
Antagonistic	Muscles that create movement in pairs when one contracts and the other relaxes	
Asthma	A respiratory condition marked by attacks of spasm in the bronchi of the lungs	
Cilia	Tiny hairs on cells that beat to move substances along. Found in the trachea.	
Diaphragm	A dome-shaped sheet of muscle which separates the thorax from the abdomen	
Diffusion	The passive movement of particles from an area of high concentration to an area of lower concentration	
Exhale	Breathing out	
Intercostal muscles	Muscles situated in between the ribs that create and move the chest wall	
Ligament	Joins bones to bones at joints	
Tendon	Joins muscles to bones to allow the muscle to pull on the bone	
Chromosome	A long strand of DNA	
Genotype	The genetic make up of an organism	
Phenotype	The observable physical characteristics of an organism	
Homozygous	When the alleles are the same for a characteristic – e.g BB or bb	
Heterozygous	Two different alleles for the same characteristic – e.g Bb	

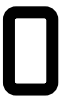
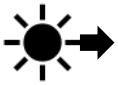
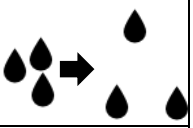
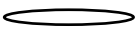
9CR – Reactivity

Alkali	A soluble base	
Alloy	A mixture of metals	
Base	Any chemical capable of neutralising an acid to product a salt	
Displacement	When a more reactive metal takes the place of a less reactive metal in a compound	
Ductile	Property of metals that allows them to be stretched out into thin wires	
Electron	One of the particles in an atom. Has a negative charge	e^-
Hydrochloric	Acid found in the stomach and used in labs – the formula is HCl	HCl
Ion	An atom that has lost or gained at least one electron	 e^-
Malleable	Property of metals that allows them to be shaped	
Nucleus	Region in the centre of the atom where the protons and neutrons are found	
Neutron	A neutral particle found inside the nucleus of the atom	n
Oxidised	When a substance chemically joins with oxygen	+ O_2
Ore	An ore is a source that contains enough metal to be economical to extract	
Period	The rows in the periodic table	
Proton	A positively charged particle found inside the nucleus of an atom	p^+
Reduction	When oxygen is removed from a compound	- O_2
Relative atomic mass	The combined mass of the protons and neutrons in an atom	$n^=$ 
Relative formula mass	The combined mass of all of the atoms shown in a compound's chemical formula	
Sonorous	Property of metal that allows it to make a ringing noise when it is hit	
Sulphuric	Acid with the formula H_2SO_4	H_2SO_4

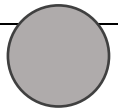
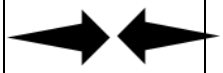
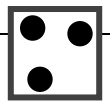
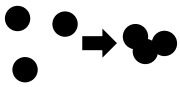
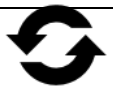
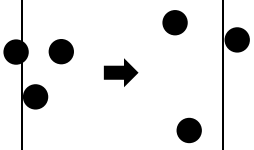
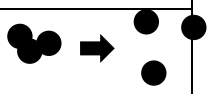
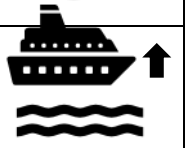
9PF – Forces in Action

Deformation	When an object is changed in shape or size due to a force being applied	
Elastic	Describes a property that means an object will return to its original shape and size as too much force has been applied	
Extension	How much longer an object gets	
Lever	Simple machine consisting of a bar that turns around a fixed pivot	
Machine	A device that alters the size of a force or the direction in which it acts	
Moment	The turning effect of a force	
Pivot	The point around which a lever turns	
Proportional	A relationship where when one variable increases by a set amount, another variable increases by a fixed value.	
Repeatable	When results are repeated by the same group of people and the same or same data and/or same conclusion	
Reproducible	When different groups of people do the same experiment and get the same data and/or same conclusion	
Spring Constant	A number for a spring telling us the size of its extension per unit of force applied	k
Work done	The energy transferred when a force moves an object	

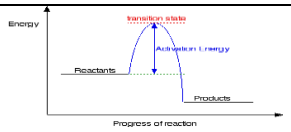
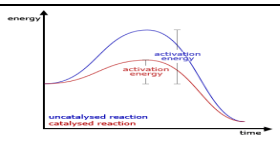
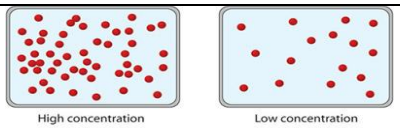
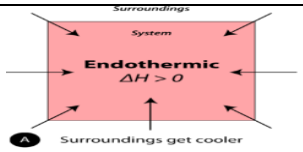
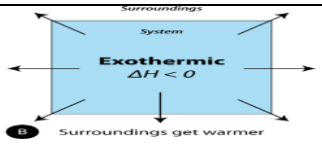
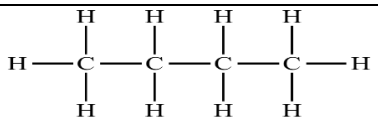
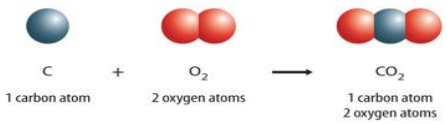
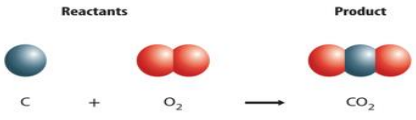
9BP – Plants and Photosynthesis

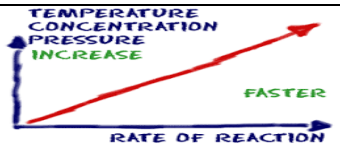
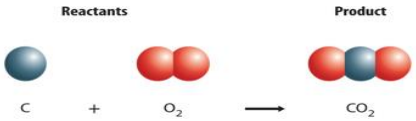
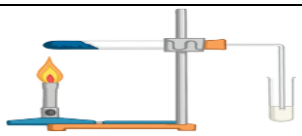
Active Transport	Process by which roots absorb mineral ions from the soil using energy from respiration	
Cellulose	Plant cell walls are made of tough cellulose, which support the cell and allow it to keep its shape.	
Chloroplasts	A green disc found in plant cells where photosynthesis takes place to produce glucose	
Chlorophyll	The green pigment in chloroplasts that absorbs the energy transferred by light waves, for photosynthesis	
Glucose	The sugar produced by photosynthesis and needed for respiration.	
Osmosis	The diffusion of water from an area of high water concentration to an area of lower water concentration	
Photosynthesis	Production of glucose using light energy.	
Starch	A polymer carbohydrate that is made by the joining together of glucose molecules.	
Stomata	Tiny pores in the lower surface of a leaf, which, when open, allow gases to diffuse into and out of the leaf. Singular is stoma.	
Phloem	Plant tissue that carries dissolved sugars from the leaves around the plant	
Pollinator	Insects such as bees that help plant reproduction by pollinating plants	
Producer	An organism such as a plant that makes its own food using photosynthesis.	
Transpiration	The flow of water into a root, up the stem and out of the leaves.	
Xylem	Plant tissue that transports water in a plant.	

9PM – Matter

Atmosphere	The layers of gases surrounding our planet.	
Brownian Motion	The random movement of particles due to collisions with other particles in a fluid	
Compress	Push into a smaller space – e.g when gases are compressed, the particles are pushed closer together	 
Concentration	The mass of dissolved substance per unit volume of solvent	
Condensation	Changing state from a gas to a liquid	
Convection	Rising hot air or liquids due to lower densities as there is more space between the particles	
Density	A measure of the mass of a substance per cm^3	g/cm^3
Diffusion	The passive movement of a substance from an area of high concentration to an area of low concentration because of Brownian motion	
Evaporation	Changing state from a liquid to a gas	
Fluid	Any material that can flow – e.g. liquids and gases	
Pascal	Unit for pressure. 1Pa = $1N/m^2$	Pa
Pressure	Force exerted over an area	
Upthrust	Upwards force exerted by a liquid on an object floating in it	

9CE – Energetics and Rates

Key Word	Definition	Diagram
Activation Energy	The minimum amount of energy needed to start a reaction	
Catalyst	A substance that speeds up a reaction without taking part or being used up	
Combustion	The process of burning something in the presence of oxygen–e.g. wood, coal, petrol	
Concentration	The measure of how many particles are dissolved per cm^3	
Endothermic	A chemical reaction that takes in energy from its surroundings	
Exothermic	A chemical reaction that transfers energy to its surroundings	
Hydrocarbon	A compound containing hydrogen and carbon **only**	
Oxidation	When a chemical joins oxygen to form a new compound	
Products	The chemicals produced in a reaction	

Rate of Reaction	A measure of the change in product or reactant over time during a reaction	
Reactants	The chemical taking part in a reaction	
Thermal Decomposition	When a compound is broken down using heat	

Key Point

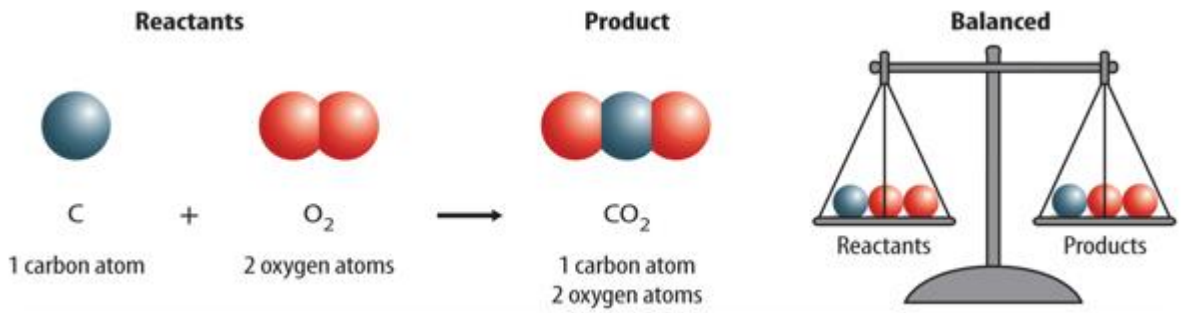
In a chemical reaction, the mass of reactants is always equal to the mass of the products. These can be scaled up or down proportionally.

For example:

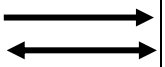
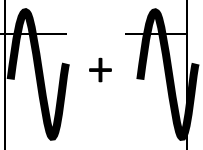
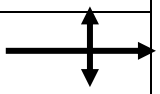
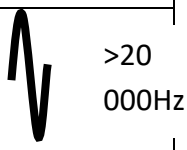
Copper + oxygen ⟶ copper oxide

64 g + 32g ⟶ 96g

6.4g + 3.2g ⟶ 9.6g (everything divided by 10)



9PS – Sound

Amplitude	The maximum displacement of a wave from rest	
Frequency	The number of waves that pass a point per second	Hz
Longitudinal	Where the vibration causing the wave is parallel to direction the wave travels	
Loudspeaker	Turns an electrical signal into a sound pressure wave	
Mechanical wave	A wave that transfers energy through matter, from particle to particle	
Microphone	Turns a sound wave into an electrical signal	
Range	The lowest and highest values in a data set	
Superposition	Where two waves travel through the same medium at the same time. The displacement is the sum of their amplitudes.	
Transverse	Where the vibration causing the wave is perpendicular to the direction the wave travels	
Ultrasound	Sound waves with frequencies higher than humans can detect (above 20kHz)	
wavelength	The distance between any two identical points on a wave diagram