YEAR 10 **Autumn Term 1b: Organisation, Bonding & Structure, Energy**

THE MILTON KEYNES ACADEMY
Creative Education Trust

Key Vocabulary for Lessons

Digestive system	Organ system where food is digested and absorbed
Enzyme	Biological catalyst that speeds up the rate
Catalyst	A substance that speeds up the rate of another reaction but is not used up or changed itself
Carbohydrates	Molecules that contain only carbon, hydrogen, and oxygen. They provide the energy for the metabolism and are found in foods such as rice, potatoes, and bread
Protein	Molecules that contain carbon, hydrogen, oxygen, and nitrogen and are made of long chains of amino acids. They are used for building the cells and tissues of the body and to form enzymes
Lipids	Lipids include fats and oils and are found in foods such as butter, olive oil, and crisps. They are made of carbon, hydrogen and oxygen
Benedict solution	A bright blue chemical reagent that turns orange or red when warm with glucose
Biuret reagent	A test blue chemical reagent that turn purple in the presence of protein
Precipitate	Insoluble substance formed when two soluble substances react together
Active site	The site on an enzyme where reactants bind
Carbohydrase	Enzymes that speed up the breakdown of carbohydrates into simple sugars
Denatured	The breakdown of the molecular structure of a protein so it no longer functions
Substrate	A substance that changes during a reaction
Bile	Neutralises stomach acid to give a high pH for the enzymes from the pancreas and small intestine to work well. It is not an enzyme
Protease	Enzymes that speed up the breakdown of proteins into amino acids
Pace maker	A group of cells located in the right atrium that controls natural resting heart rate
Atrium	The upper chamber of the heart that receives blood from veins
Ventricle	The lower chamber of the heart that pumps blood out into the arteries
Haemoglobin	The red iron containing pigment found in red blood cells
Capillary	The tiny blood vessel with thin walls to allow for the transfer of substances between the blood and tissue

Lymphocytes	A type of white blood cell that produces antibodies
Alveolus	A small pocket in the lungs in which gases are exchanged between the air and the blood (Plural is alveoli)
Gas exchange	A process in which one gas diffuses across a membrane and another gas diffuses in the opposite direction
Diffusion	Net movement of particles from and area of higher concentration to area of lower concentration
Statins	Drugs use to lower blood cholesterol and improve the balance of high to low density lipoproteins in the blood
Stent	A small mesh tube use to widen blood vessels and allow blood to flow more easily
Cardiovascular disease	A disease in which the heart or the circulatory system does not function properly
Correlation	When two factors change in a similar pattern, we say they are correlated
Health	A state of complete physical, social and mental well-being
Non communicable	Diseases that are not infectious and cannot be passed on from one organism to the other
Cirrhosis	A disease of the liver, often caused by drinking a large amount of ethanol (alcohol) over a long period of time
Lifestyle	The way we live, such as our diet, whether we smoke tobacco and how much exercise we take. Lifestyle can affect whether we develop some disease
Risk factor	The combination of the chances of the hazard causing harm and the severity of that harm
Palisade mesophyll	Tissue contains a lot of chloroplast which carryout photosynthesis
Spongy mesophyll	Tissue contains some chloroplast for photosynthesis but has big air spaces and large surface area to make diffusion of gases easier
Epidermal tissue	Cells that form a surface layer in a plant or animal organ
Transpiration	The flow of water into a root, up the stem out of the leaves.
Translocation	The transport of sugars and other soluble compound in the phloem tissue of a plant
Potometer	A device used for measuring the rate of water uptake in plants

Element	A substance that cannot be broken down into any other substance
Ion	An ion is a charged particle that has lost or gained electrons
Charge	Atoms gain a positive or negative charge by losing or gaining electrons.

Bond	Bonds are the connections between atoms when they chemically combined.
Electrostatic attraction	It's the attractive force between two oppositely charged particles.
Molecule	A molecule is two or more atoms connected by chemical bonds
Intermolecular forces	Intermolecular forces are the attractive or repulsive forces between molecules.
Electron	An electron is a negatively charged subatomic particle
Delocalised	The electrons which are free to move in the spaces in-between the nuclei of metal atoms.
Lattice	A regular arrangement of ions that form a crystal.
Compressed	Pressed together, reduced in size or volume
Monomer	Small molecule, usually containing a C=C bond that join end to end with other monomers to make polymers
Polymers	A large molecule formed from many monomers bonded together.
Thermoset	property of a material becoming permanently hard and rigid when heated or cured
Conduct	Passing of energy, such as electricity or heat
Allotrope	Allotropes are different forms of an element in the same physical state.
Fullerene	Molecules of carbon atoms with hollow shapes

Biofuel	fuel taken from living or recently living materials
Carbon neutral	takes in as much carbon dioxide as is released
Closed system	no energy can enter or leave the system
Conclusion	statement describing the relationship between two variables suggested by collected data.
Conservation of energy	energy cannot be created or destroyed, can be transferred between stores
Demand	what is required
Dissipated	the energy that is not usefully transferred and stored in less useful ways
Efficiency	useful energy transferred by a device ÷ total energy supplied to the device
Energy	the ability to do work
Finite	an energy resource that is not renewable and that will run out.

Geothermal	energy from radioactive substances within the Earth
Hydroelectricity	electricity generated by falling water
Hypothesis	an idea linking two variables
Input energy	energy supplied to a device
Insulator	a poor conductor of heat or electricity
Joule	the unit of energy
National grid	network of cables and transformers used to transfer electricity from the power station to consumer
Nuclear fuel	fuel that releases energy due to nuclear fission
Nucleus	positively charged region at the centre of an atom, that contains protons and neutrons
Predictable	you know when something is going to happen
Prediction	statement on the believed nature of the relationship between two variables before data have been collected
Renewable	an energy resource that is always being replenished so it wont run out
Solar	energy from the sun
Specific heat capacity	the amount of energy needed to heat 1 kg of a substance up by 1 degree.
Supply	what can be provided
Thermal conductivity	describes the ease of which energy is transferred through a material
Useful energy	energy transferred to where it is wanted in the way that is wanted
Wasted energy	energy that is not usefully transferred
Work	the energy transferred by a force. Work done (joules, J) = force (newtons, N) x distance moved in the direction of the force (metres, m)
Variable	something which can change in an investigation

GCSE Pod Homework

- Homework will be set via GCSE Pod every week
- You will be given a set of questions alongside short videos.
- Each week will be a different discipline and will recap your prior learning.

Additional Opportunities

If you wish to further develop your skills and knowledge for GCSE Combined/triple Science, you can use the following links:

https://www.youtube.com/@Cognitoedu -Cognito

https://www.physicsandmathstutor.com/ - Past papers with mark schemes for all sciences (Exam board: AQA)