

YEAR 8 OVERVIEW 2020/21 - SCIENCE

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 8	Atomic Physics	Bonding & Molecules	Earth & Environment	Systems (1)	Drugs	Electricity & Magnetism
	<p>The model of the atom we have today is based on the work of John Dalton but other Scientists have contributed to our knowledge of the atom.</p> <p>Some atoms are stable, some are unstable. The unstable ones give out radiation which can be dangerous.</p>	<p>Some compounds involve non-metals chemically bonding together and some compounds involve a metal and a non-metal bonding together.</p> <p>Metals take part in important reactions with acids and with oxygen.</p>	<p>When animals and plants die, they form fossil fuels over millions of years. Fossil fuels, along with other useful resources can be extracted from the Earth for use by an increasingly large human population. Combustion of fossil fuels causes Global Warming.</p>	<p>A fertilised egg produces identical copies of itself to form a Zygote.</p> <p>The placenta exchanges substances between the mother & fetus. During labour, the uterus contracts & the cervix dilates.</p>	<p>Other lifestyle factors (drugs) can also affect other aspects of our health. Alcohol is a depressant that can affect the health of the Liver; recreational drugs can also have many psychological and physiological effects.</p> <p>Medicines also affect the body but are tested to ensure they are safe.</p>	<p>Resistance. Resistance rules in series and parallel circuit.</p> <p>Current through a wire creates a magnetic field.</p> <p>A current through a wire + a magnetic core = an electromagnet.</p>
	Atoms & Elements	Reactions & Energy	Cells	Systems (2)	Energy	Forces
	<p>In atoms, protons are positive, electrons are negative & neutrons are neutral.</p> <p>The Periodic Table contains all known elements and was developed by Dimitri Mendeleev. The Periodic Table contains elements that are metals and non-metals.</p>	<p>A metal + acid → salt + hydrogen A metal + oxygen → Metal Oxide</p> <p>Acids and Alkalis have a pH value between 1 – 14 Acids & Alkalis neutralise each other in a reaction.</p> <p>Complete combustion releases Carbon Dioxide and Water.</p> <p>Some reactions take in energy (endothermic). Some reactions give out energy (exothermic).</p>	<p>Respiration takes place in all cells. Cells can be prokaryotic or eukaryotic.</p> <p>Specialised Cells have <i>adaptations</i> for their functions: Examples are: Muscle Cells, Nerve Cells, Xylem and Phloem Cells, Root Hair Cells.</p> <p>Stem cells are non-specialised.</p> <p>Diffusion allows substances to move in & out of cells.</p> <p>Microscopes can be used to view cells.</p>	<p>The Alveoli have adaptations to facilitate gas exchange.</p> <p>Asthma is a respiratory condition.</p> <p>Lifestyle factors can affect our health.</p> <p>The Digestive System contains enzymes to break down food. Enzymes can be affected by temperature changes.</p>	<p>Energy resources can be renewable or non-renewable.</p> <p>Energy can be transferred through conduction, convection & radiation.</p> <p>Power = energy transferred / time</p>	<p>Forces are pushes or pulls. Forces can deform objects through stretching or squashing.</p> <p>There is a linear relationship between force and extension; Hooke's Law is a special case.</p> <p>Work done = force x distance.</p> <p>Power is a measure of the energy transferred over time – it is also a measure of the work done over time.</p>
		Natural World				
		<p>Plants compete for light, space, water & mineral ions. Animals compete for food, territory & mates. Plants & animals have adaptations which help them to compete.</p>				