

## Science

	Year 7 The same 4 topics are taught each term however the order may vary	Year 8 The same 4 topics are taught each term however the order may vary	Year 9
A u t u m n 1	<p><b>Practical Skills</b> Lab safety Using and naming equipment Variables Handling data and making conclusions</p> <p><b>Cells</b> Using a microscope Animal and plant cells Specialised cells 7 Life Processes Nerve Cells Blood cells</p> <p><b>Acids</b> Safety and recognising hazard labels Acids and alkalis - the pH scale Neutralisation Acids and carbonates Acids and metals Acid rain</p>	<p><b>Life Support</b> Respiration Lung structures and gas exchange Heart and blood vessels Measuring fitness and heart disease The digestive system Food groups Making healthy choices</p> <p><b>Keeping Healthy</b> Microbes The immune system Hygiene and minimising infections Vaccinations Drugs and peer pressure Stem cells</p> <p><b>Heating and cooling</b> Thermal energy and how it flows Heat transfer by conduction, convection and radiation Conserving energy Space technology and re-entry temperatures</p>	<p><b>Electricity</b> Nature of electric current and voltage Current and voltage in series and parallel Resistance Ohm's law</p> <p><b>Life Processes &amp; Disease</b> 7 life processes Respiration Human reproduction Causes and treatments of diseases</p> <p><b>Chemical reactions</b> Acid Reactions Thermal decomposition reactions Oxidation reactions Endothermic and Exothermic reactions Catalysts</p>
A u t u m n 2	<p><b>Forces</b> Forces and how they are measured Balanced and unbalanced forces Friction Weight, mass and upthrust Calculating speed Forces involved in building</p> <p><b>Space</b> Why we have days and seasons The solar system</p>	<p><b>Moving around</b> Levers Pendulums Circular motion Acceleration and terminal velocity Pressure Inertia</p>	<p><b>Energy</b> Energy stores and transfers Conservation of energy Work GPE, EPE and KE calculations Energy dissipation Power</p> <p><b>Cells</b> Using a microscope Plant and animal cells Cell specialisation Transport between cells</p>

	<p>Phases of the moon Satellites The universe and the big bang Space exploration</p>		<p><b>Atomic Structure</b> History of the atom Structure of the atom Electronic structure Chemical equations Ions and Isotopes Separating mixtures</p>
S p r i n g 1	<p><b>Particles</b> Particles in solids, liquids and gases Properties of solids, liquids and gases Changes of state Dissolving Gas pressure and density</p> <p><b>Elements and Compounds</b> Element symbols and definition Metals and non-metals Compounds and mixtures Vital elements and compounds</p> <p><b>Electricity and Magnetism</b> Circuit symbols and circuits Series and parallel circuits Voltage Magnets Electromagnets</p>	<p><b>People and the Environment</b> Animal adaptations Competition and climate change Food webs Pyramids of number and biomass Chemicals in farming and bioaccumulation Sustainable fuels</p> <p><b>Shaping life</b> Animals behaviour for survival Learned behaviour Selective breeding Genetic engineering GM foods and intensive farming</p> <p><b>Periodic table</b> Elements Groups in the periodic table Noble gases The halogens Elements our body needs Silicon The development of the periodic table</p> <p><b>Metal reactions</b> Properties of metals and alloys Metals and water Metals and acid The reactivity series</p>	<p><b>Energy transfer by heating</b> Thermal conduction and insulators IR radiation Specific heat capacity Insulating buildings</p> <p><b>Cell Division</b> Mitosis Growth and division Stem cells Ethical questions surrounding stem cells</p> <p><b>The Periodic Table</b> Electronic structure Group 1 Group 7 Explaining trends</p>
	S p r i n g 2	<p>Discovering electricity</p> <p><b>Energy</b> Energy stores and transfers Conservation of energy Calculating GPE Energy in food Energy resources The energy crisis</p>	

		Recycling vs mining ore	
S u m m e r 1	<p><b>Reproduction</b>  Female and male sex organs  IVF  Fertilisation and embryo development  Development in the uterus  How offspring survive  The menstrual cycle  Debating IVF issues</p> <p><b>Differences</b>  Variation and biometrics  Inherited variation  Environmental variation  Continuous variation and correlations  Animal behaviour  Variation and sporting ability</p> <p><b>Classification</b>  Species and extinction  Classification of invertebrates, vertebrates and plants</p> <p><b>Chemical Reactions</b>  Reversible and irreversible reactions  Distillation and chromatography  Burning  Hydrocarbons  Photosynthesis  Climate change</p>	<p><b>Using elements</b>  Structures and properties of gases  The history of the atmosphere  The importance of molecular formulae  Polymers  Metallic and ionic bonding  Reduce, reuse recycle</p> <p><b>What's in rocks?</b>  Volcanoes and volcanologists  Igneous, metamorphic and sedimentary rock  Fossils  The rock cycle</p> <p><b>Light</b>  How light travels  Reflection, refraction, dispersion  Colour of light and how we see it  Lasers</p> <p><b>Sound</b>  How vibrations cause sound  The decibel scale and ear protections  Frequency and audible range  Echoes and ultrasound  How instruments produce sound  Supersonic speed and sonic booms</p>	<p><b>The digestive system</b>  Enzymes  Factors affecting enzyme action</p> <p><b>Structure and bonding</b>  States of matter  Atoms into ions  Ionic bonding  Ionic formulae  Covalent bonding  Bonding in metals</p>
S u m m e r 2			<p><b>The digestive system</b>  How the digestive system works  Making digestion efficient</p> <p><b>Structure and bonding</b>  States of matter  Atoms into ions  Ionic bonding  Ionic formulae  Covalent bonding  Bonding in metals</p>