



GRADE		DESCRIPTION
9	Mastering	BIOLOGY Carbon and nitrogen Cycles Blood donations
	Secure	CHEMISTRY Empirical formula Moles Using moles to balance equations order of magnitude calculations
	Developing	PHYSICS Algebra in circuit calculations Ratios and proportional reasoning
8	Mastering	BIOLOGY Causes of variation /Indicators of pollution/Protein synthesis/Genetic engineering and gene therapy Cloning /Decay and recycling/Excretion and the kidney/Life in the soil and water/DNA fingerprinting Biofuels and brewing
	Secure	CHEMISTRY Orders of magnitude/Standard form/properties of ionic compounds/Fullerenes/conservations of mass neutralisation of acid and salt production/preparing a pure, dry soluble salt from an insoluble oxide strong and weak acids/electrolysis of aqueous solutions/solution concentration/concentration, temperature and pressure on equilibrium/extraction of metal through electrolysis
	Developing	increasing atmospheric oxygen levels/waste water treatment/ratios, fractions and percentages PHYSICS Investigating specific heat capacity/Scalars and vectors/Static electricity/UV and IR radiation Radio wave and microwave communication/Practical ways to increase energy efficiency Significant figure calculations



<p>7</p>	<p>Mastering</p> <p>Secure</p> <p>Developing</p>	<p>BIOLOGY Homeostasis of blood glucose and temperature/Plant hormones/Inherited disorders/Blood Enzyme limiting factors/Mitosis and meiosis/Concerns over GM crops/Osmosis/Cardiac cycle Respiratory system diseases/Transplants/Disease transmission</p> <p>CHEMISTRY Particle size/Chromatography in forensics/ionic compounds/giant covalent structures Developing the periodic table/amounts of substances in equations/oxidation and reduction electron transfer/electrolysis/monitoring and controlling reactions/calculating rate of reaction reversible reactions/equilibrium/determining rate of reaction from a tangent extractions of metals and alternatives to electrolysis/fractional distillation and petrochemicals IMF's/Cracking alkenes</p> <p>PHYSICS Specific latent heat/Momentum/Springs and Hookes law/Potential energy/Resistance/Power and energy transfer/Difference between potential difference and current/Compasses/Energy transfer/Gamma and x-rays/Microwaves/Nuclear equations/Half-life/Irradiation/Dissipation of energy/Electricity in the home</p>
<p>6</p>	<p>Mastering</p> <p>Secure</p> <p>Developing</p>	<p>BIOLOGY Immunisation/Evolution/Sustainability/Respiration/Selective breeding/Sampling techniques Leaf structure/Photosynthesis and limiting factors/Intensive farming/Heart repairs and pacemakers Bacteria, viruses and fungi/Water pollution</p> <p>CHEMISTRY Chromatography/Chemical bonds/Polymer structures/Diamond and graphite/balancing equations molar masses and limiting reactants/soluble salts/pH and neutralisation/Reaction trends and predicting reactions/measuring rate of reaction/catalysts/crude oil, alkanes and hydrocarbons/hydrocarbon properties/Earths early atmosphere/green house gases/analysis and purification of water samples</p> <p>PHYSICS Internal energy/specific heat capacity/Velocity-time graphs/Forces/Investigating circuits/Using formula Conductor forces/Transverse and longitudinal waves/Electromagnetic spectrum/Investigating wave fronts Radioactive decay/Energy and power/Energy efficiency/Keeping safe on the road</p>



<p>5</p>	<p>Mastering</p> <p>Secure</p> <p>Developing</p>	<p>BIOLOGY Describing the immune system and disease prevention The eye/Energy flow through the food chain/Pollution/DNA and mutations/Diffusion/Plant minerals Organic farming/Gas exchange and the respiratory system/Fertility and fetal screening Uses of bacteria and microorganisms</p> <p>CHEMISTRY Researching atomic structure/Formulations/Electron structure/Properties of metals and alloys mass changes in reactions/reaction profiles/energy changes of reactions/reactions of metals with acids Group 1/Group 7/investigation into factors affecting rate of reaction/reducing resource use properties of gases in the atmosphere/carbon footprints/potable water</p> <p>PHYSICS Discovery of atom structure/Resultant forces/Newton’s third law/Energy transfer/Series and parallel circuits/Control circuits/Magnetism and magnetic forces/Motors/Describing waves/Using and rearranging equations/Reflection, refraction and wave fronts/Back ground radiation/Hazards of radiation Work done and energy transfer/Transmitting electricity</p>
<p>4</p>	<p>Mastering</p> <p>Secure</p> <p>Developing</p>	<p>BIOLOGY The nervous system/Food pyramids/Competition and interdependence/Enzymes and uses in medicine Circulatory system/Transport and respiration in plants/Digestion/Human growth</p> <p>CHEMISTRY Relative charges and masses/relative formula mass/Metallic bonding/Periodic table/atoms, formula and equations/Group 0/Reactivity series/rate of reaction and collision theory/life cycle and recycling/ human activities and links to climate change/atmospheric pollutants from fuels</p> <p>PHYSICS Investigating density/Particle motion in gases/Calculation of motion/Forces and motion/Electric charge and currents/Potential difference/Practical investigation into wave properties/Atomic structure Uses of radiation Investigating kinetic energy/Energy resources</p>



3	<p>Mastering</p> <p>Secure</p> <p>Developing</p>	<p>BIOLOGY Variation/Grouping organisms and classification/Organism adaptations/Plant structure The skeleton, muscles and joints</p> <p>CHEMISTRY Atomic structure/Subatomic particles/Mixtures/test for gases/endothemic and exothermic reactions predicting reactants and products</p> <p>PHYSICS Density/Interpreting graphs/Acceleration/Work done/Measuring wave speed/Global energy supplies</p>
2	<p>Mastering</p> <p>Secure</p> <p>Developing</p>	<p>BIOLOGY Describing health and fitness/Drugs/Feeding relationships</p> <p>CHEMISTRY Purity Metals and non-metals</p> <p>PHYSICS Particle model and changes of state Drawing graphs Speed Power Simple circuits</p>
1	<p>Mastering</p>	<p>BIOLOGY Tobacco and alcohol</p> <p>CHEMISTRY Three states of matter</p>



Science Topics

	Secure	elements and compounds
	Developing	