

Big Ideas	Biology - Structure & Function of Living Organisms, Material Cycles & Energy, Interactions & Interdependencies Chemistry - Matter, Chemical Reactions, Earth Physics - Energy, Motion & Forces, Waves, Electricity & Electromagnetism, Matter				
	Year 7	Year 8	Year 9	Year 10	Year 11
<b>Unit 1</b>	Physics - Energy <ul style="list-style-type: none"> <li>- Energy stores and transfers</li> <li>- Conservation of energy</li> <li>- Energy in food</li> <li>- Calculating power</li> <li>- Electrical appliances</li> <li>- Non-renewable energy</li> <li>- Renewable energy</li> </ul> Physics - Particle Model <ul style="list-style-type: none"> <li>- Solids, liquids &amp; gases</li> <li>- Conservation of mass</li> <li>- Solutions</li> <li>- Diffusion</li> <li>- State Changes</li> <li>- Concentration</li> </ul> Biology - Interdependence <ul style="list-style-type: none"> <li>- Food chains &amp; Food webs</li> <li>- Interdependence</li> <li>- Adaptations</li> <li>- Classification</li> <li>- Ecosystems</li> </ul>	Biology - Respiration <ul style="list-style-type: none"> <li>- Photosynthesis</li> <li>- Respiration</li> <li>- Exercise</li> <li>- Fermentation</li> </ul> Physics - Current <ul style="list-style-type: none"> <li>- Current</li> <li>- Measuring current</li> <li>- Parallel circuits</li> <li>- Electromagnetism</li> </ul> Biology - Plants and Photosynthesis <ul style="list-style-type: none"> <li>- Photosynthesis</li> <li>- Adaptations of leaves</li> <li>- Reproduction in plants</li> <li>- Gas exchange in plants</li> <li>- Uses of plant food</li> <li>- Variation in plants</li> <li>- Maintaining biodiversity with seed banks</li> </ul> Chemistry - Atomic Structure <ul style="list-style-type: none"> <li>- Ionic bonding</li> <li>- Covalent bonding</li> <li>- Metallic bonding</li> </ul> Biology - Transport <ul style="list-style-type: none"> <li>- Respiratory system</li> <li>- Smoking</li> <li>- Circulatory system</li> <li>- Transport in plants</li> </ul>	Biology - Human Systems <ul style="list-style-type: none"> <li>- Circulatory system</li> <li>- Respiratory system</li> <li>- Gas exchange</li> <li>- Digestive system</li> <li>- Enzymes</li> </ul> Chemistry - Separating Mixtures <ul style="list-style-type: none"> <li>- Filtration</li> <li>- Distillation</li> <li>- Chromatography</li> <li>- Atoms, mixtures &amp; compounds</li> <li>- Atomic structure</li> <li>- Electronic structure</li> </ul> Physics - Electrical Circuits <ul style="list-style-type: none"> <li>- Series &amp; Parallel</li> <li>- Circuit diagrams</li> <li>- Current</li> <li>- Charge</li> </ul>	Chemistry - Reactions of Metals <ul style="list-style-type: none"> <li>- Structure of a metal</li> <li>- Metals as ions</li> <li>- Reactivity series</li> <li>- Investigating reactivity</li> <li>- Extraction of metals</li> </ul> Biology - Organisation in Plants <ul style="list-style-type: none"> <li>- Plant organisation</li> <li>- Transpiration</li> <li>- Translocation</li> <li>- Stomata</li> <li>- Structure of the leaf</li> </ul> Physics - Particle Model of Matter <ul style="list-style-type: none"> <li>- Density</li> <li>- Internal energy</li> <li>- Specific heat capacity</li> <li>- Specific latent heat</li> <li>- Pressure</li> </ul> Biology - Infectious Diseases <ul style="list-style-type: none"> <li>- Communicable diseases</li> <li>- Pathogens</li> </ul> Physics - Energy Resources <ul style="list-style-type: none"> <li>- Non-renewables</li> <li>- Renewables</li> <li>- Trends in energy use</li> </ul> Physics - Mains electricity <ul style="list-style-type: none"> <li>- Direct &amp; alternating potential difference</li> <li>- Mains electricity</li> <li>- Energy transfers</li> <li>- National grid</li> </ul>	Biology - Sampling & Recycling Resources <ul style="list-style-type: none"> <li>- Sampling Techniques</li> <li>- Carbon cycle</li> <li>- Water cycle</li> </ul> Biology - Biodiversity <ul style="list-style-type: none"> <li>- Deforestation</li> <li>- Protecting Biodiversity</li> <li>- Climate change</li> <li>- Pollution</li> </ul> Chemistry - Rate & Extent of Chemical Change <ul style="list-style-type: none"> <li>- Collision Theory</li> <li>- Catalysts</li> <li>- Rates of Reaction</li> <li>- Dynamic Equilibrium</li> </ul> Biology - Homeostasis <ul style="list-style-type: none"> <li>- Menstrual cycle</li> <li>- Fertility</li> <li>- Contraception</li> <li>- Blood glucose control</li> <li>- Diabetes</li> <li>- Adrenaline and thyroxine</li> <li>- Nervous system</li> <li>- Reaction times</li> </ul> Physics - Forces & Motion <ul style="list-style-type: none"> <li>- Distance and displacement</li> <li>- Speed</li> <li>- Acceleration</li> </ul> Physics - Forces and Braking <ul style="list-style-type: none"> <li>- Reaction times</li> <li>- Stopping distances</li> <li>- Momentum</li> </ul>

<b>Unit 2</b>	<p>Physics - Forces</p> <ul style="list-style-type: none"> <li>- Forces</li> <li>- Measuring forces</li> <li>- Newton's Laws</li> <li>- Work done</li> </ul> <p>Chemistry - Elements</p> <ul style="list-style-type: none"> <li>- Elements &amp; compounds</li> <li>- Periodic table</li> <li>- Metals &amp; non-metals</li> </ul> <p>Biology - Organisation</p> <ul style="list-style-type: none"> <li>- Organisation</li> <li>- Skeletons &amp; Joints</li> <li>- Muscles</li> <li>- Nervous System</li> <li>- Digestive System</li> <li>- Diet</li> </ul>	<p>Chemical Reactions</p> <ul style="list-style-type: none"> <li>- Combustion</li> <li>- Thermal Decomposition</li> <li>- Oxidation</li> <li>- Displacement reactions</li> <li>- Acids &amp; Alkalis</li> <li>- Neutralisation reactions</li> <li>- Reactions of acids</li> <li>- Catalysts</li> <li>- Endothermic reactions</li> <li>- Exothermic reactions</li> </ul> <p>Earth</p> <ul style="list-style-type: none"> <li>- Composition of the Earth</li> <li>- Rock Cycle</li> <li>- Carbon cycle</li> <li>- Composition of the atmosphere</li> <li>- Chemical analysis</li> <li>- Human production of carbon dioxide</li> <li>- Climate change</li> </ul> <p>Forces and Elasticity</p> <ul style="list-style-type: none"> <li>- Deforming objects</li> <li>- Stretching and compressing</li> <li>- Measuring changes in elasticity</li> <li>- Linear relationships</li> <li>- Hooke's Law</li> <li>- Work done and energy changes on deformation</li> </ul>	<p>Chemistry - Periodic Table</p> <ul style="list-style-type: none"> <li>- Development of the periodic table</li> <li>- Metals &amp; non metals</li> <li>- Metallic bonding</li> <li>- Metals as alloys</li> <li>- Group 1</li> <li>- Group 7</li> <li>- Group 0</li> </ul> <p>Physics - Resistance</p> <ul style="list-style-type: none"> <li>- Modelling resistance</li> <li>- Resistors</li> <li>- Series &amp; Parallel circuits</li> <li>- Investigating resistance</li> </ul> <p>Biology - Organisation in Plants</p> <ul style="list-style-type: none"> <li>- Plant organisation</li> <li>- Transpiration</li> <li>- Translocation</li> <li>- Stomata</li> <li>- Structure of the leaf</li> </ul>	<p>Chemistry - Reactions of Acids</p> <ul style="list-style-type: none"> <li>- Acids &amp; bases</li> <li>- Reactions of acids</li> </ul> <p>Biology - Immune Response</p> <ul style="list-style-type: none"> <li>- Immune system</li> <li>- Immune response</li> <li>- Vaccinations</li> <li>- Development of drugs</li> </ul> <p>Physics - Atomic Structure</p> <ul style="list-style-type: none"> <li>- Atom</li> <li>- Isotopes</li> <li>- Development of the model of the atom</li> <li>- Radioactive decay</li> <li>- Nuclear radiation</li> <li>- Nuclear equations</li> <li>- Half life</li> <li>- Radioactive contamination</li> </ul> <p>Chemistry - Energy Changes</p> <ul style="list-style-type: none"> <li>- Endothermic</li> <li>- Exothermic</li> <li>- Reaction profiles</li> <li>- Bond energies</li> </ul> <p>Chemistry - Quantitative Chemistry</p> <ul style="list-style-type: none"> <li>- Chemical formulae</li> <li>- Balancing Equations</li> <li>- Conservation of mass</li> <li>- Relative Formula Mass</li> <li>- Concentration</li> <li>- Mole</li> <li>- Reacting masses</li> <li>- Limiting reactants</li> <li>- Empirical formula</li> </ul>	<p>Biology - Inheritance</p> <ul style="list-style-type: none"> <li>- DNA</li> <li>- Reproduction</li> <li>- Meiosis</li> <li>- XY Chromosomes</li> <li>- Genetic crosses</li> <li>- Inherited disorders</li> </ul> <p>Physics - Waves</p> <ul style="list-style-type: none"> <li>- Transverse</li> <li>- Longitudinal</li> <li>- Investigating waves</li> <li>- Wave behaviour</li> <li>- EM Waves</li> <li>- Refraction</li> <li>- Uses of EM Waves</li> <li>- Infrared radiation</li> </ul> <p>Biology - Variation &amp; Evolution</p> <ul style="list-style-type: none"> <li>- Variation</li> <li>- Evolution</li> <li>- Selective breeding</li> <li>- Genetic engineering</li> <li>- Fossils</li> <li>- Antibiotic resistant bacteria</li> <li>- Classification</li> </ul> <p>Chemistry - Organic Chemistry</p> <ul style="list-style-type: none"> <li>- Alkanes</li> <li>- Alkenes</li> <li>- Fractional distillation</li> <li>- Cracking</li> </ul> <p>Chemistry - Using Resources</p> <ul style="list-style-type: none"> <li>- Finite &amp; Renewable</li> <li>- Recycling</li> <li>- Life cycle assessments</li> <li>- Potable water</li> <li>- Waste water</li> </ul> <p>Physics - Magnetism &amp; Electromagnetism</p> <ul style="list-style-type: none"> <li>- Permanent magnets</li> <li>- Induced magnets</li> <li>- Magnetic fields</li> <li>- Electromagnetism</li> <li>- Motor effect</li> <li>- Electric motors</li> </ul>

Unit 3	Biology - Organisation - Organisation - Skeletons & Joints - Muscles - Nervous System - Digestive System - Diet Physics - Magnetism & Charge - Magnetism - Magnetic fields - Earth - Static electricity - Simple circuits - Parallel Circuits Chemistry - Compounds & Mixtures - Chemical & physical changes - Word equations - Pure & Impure substances - Separating Techniques Biology - The Cell - Animal cells - Plant cells - Microscopes - Magnification - Specialised cells Physics - Space - Scale of the universe - Solar system - Models of the solar system - Rotation and orbits - Eclipses - Seasons - Gravity Biology - Reproduction - Types of reproduction - Male reproductive system - Female reproductive system - Menstrual cycle - Fertilisation - Development of the foetus - Healthy births - Puberty	Physics - Waves - Sound - Waves - Light - Sight Biology - Health & Disease - Communicable disease - Culturing microorganisms - Immune system - Vaccinations - Antibiotics - Drugs - Plant diseases Physics - Speed - Newton's Laws - Speed - Distance-time graphs Biology - Biodiversity - Ecology - Biotic and Abiotic factors - Importance of Biodiversity - Deforestation - Climate change - Plastic - Sampling Biology - Genetics - Heridity - Discovery of DNA - Extracting DNA - Variation - Investigating variation - Natural selection - Extinction	Physics - Mains Electricity - Direct & alternating potential difference - Mains electricity - Energy transfers - National grid Physics - Energy - Stores & Systems - Kinetic energy - Potential energy - Specific heat capacity - Conservation of energy - Reducing energy transfers - Efficiency Chemistry - Covalent & Ionic Bonding - Chemical bonds - Ionic bonds - Ionic compounds - Covalent bonds - Covalent compounds - States of matter	Chemistry - Electrolysis - Electrolysis - Electrolysis of aqueous solutions - Molten electrolysis - Half equations Forces and Interactions - Scalar & Vector - Contact and non contact - Gravity - Free body force diagrams Chemistry - Chemical Analysis - Chromatography - Tests for common gases - Purity and formulations Physics - Forces & Elasticity - Elasticity - Investigating limits of proportionality Chemistry - Chemistry of the atmosphere - Early atmosphere - Greenhouse gases - Climate change - Carbon footprints - Air pollution Biology - Ecology - Competition - Abiotic & biotic factors - Adaptations - Food chains	Countdown Curriculum  Biology 1 Exam Chemistry 1 Exam Physics 1 Exam Biology 2 Exam Chemistry 2 Exam Physics 2 Exam