



Throughout the key stage the following topics are covered							
PAPER 1	<p><b>Topic: B1 Cells</b></p> <p>Using microscopes Animal and plant cells Diffusion Osmosis</p> <p><b>Topic: B2 Cell Division</b></p> <p>Cell Division Growth and differentiation Stem cells</p> <p><b>Topic: B3 (Organisation and the Digestive System)</b></p> <p>Tissues and organs Chemistry of food Human digestive system Catalysts and enzymes</p> <p><b>Topic: B4 Organising animals and Plants</b></p> <p>Heart and blood vessels Breathing and gas exchange Organ systems in plants Exchange of materials using transport systems in plants</p> <p><b>Topic: B5 Communicable Disease</b></p> <p>Health and disease Pathogens and disease Bacterial growth (T) Preventing infections Viral diseases Bacterial diseases Human defence responses Plant diseases (T)</p>	<p><b>Topic: B6 Preventing &amp; Treating Disease</b></p> <p>Vaccination Antibiotics &amp; painkillers Discovering drugs Developing drugs Making monoclonal antibodies (T) Use of monoclonal antibodies (T)</p> <p><b>Topic: B7 Non communicable diseases</b></p> <p>Cancer Smoking and the risk of disease Diet, exercise and disease Alcohol and other carcinogens</p> <p><b>Topic: B8 Photosynthesis Knowledge and skills</b></p> <p>Photosynthesis Rate of photosynthesis How plants use glucose Making the most of photosynthesis</p> <p><b>Topic: B9 Respiration</b></p> <p>Aerobic respiration The response to exercise Anaerobic respiration Metabolism and the liver</p>	<p><b>Topic: C1 Atomic Structure</b></p> <p>Chemical equations Separating mixtures Structure of the atom Ions and isotopes</p> <p><b>Topic: C2 The Periodic Table</b></p> <p>History of the periodic table Electronic structure Group 1 - Alkali Metals Group 7 – Halogens</p> <p><b>Topic: C3 Structure and Bonding</b></p> <p>Ionic Bonding Covalent bonding Ionic and covalent compounds Fullerenes and graphite</p> <p><b>Topic: C4 Chemical calculations</b></p> <p>Relative formula mass and moles Mass calculations and balanced equations Titration and titration calculations(T) Volumes of gases (T)</p>	<p><b>Topic: C5 Chemical changes</b></p> <p>Reactivity series Displacement reactions Extracting metals Salts from metals Making salts Acids/pH scale</p> <p><b>Topic: C6 Electrolysis</b></p> <p>Introduction to electrolysis Changes at the electrodes The extraction of aluminium Electrolysis of aqueous solutions</p> <p><b>Topic: C7 Energy changes</b></p> <p>Exothermic/endothermic reactions Energy profile diagrams Bond energy calculation Chemical cell, batteries and fuel cells (T)</p>	<p><b>Topic: P1 Energy</b></p> <p>Energy stores Energy and Work Gravitational Potential Energy Kinetic energy Energy and Power</p> <p><b>Topic: P2 Energy transfer</b></p> <p>Conduction, convection and infrared radiation Specific heat capacity</p> <p><b>Topic: P3 Energy resources</b></p> <p>Energy from Renewable resources Energy issues</p> <p><b>Topic: P4 Electricity</b></p> <p>Electric current, potential difference and resistance Series and parallel circuits</p>	<p><b>Topic: P5 Electricity</b></p> <p>Alternating current Electrical appliances and power Energy transfer and currents</p> <p><b>Topic: P6 Molecules and matter</b></p> <p>Density States of matter Changing state Specific latent heat Internal energy</p> <p><b>Topic: P7 Radioactivity</b></p> <p>Atoms and radiation Discovery and changes in the nucleus Alpha, beta and gamma radiation Activity and half life Nuclear radiation in medicine(T) Nuclear fission/fusion(T) Nuclear issues (T)</p>	
	PAPER 2	<p><b>Topic: B10 Human nervous system</b></p> <p>Principles of homeostasis Structure &amp; function of the nervous system Reflex actions The brain (T) The eye (T)</p> <p><b>Topic: B11 Hormonal coordination</b></p> <p>Principles of hormonal control</p>	<p><b>Topic: B14 Variation and evolution</b></p> <p>Evolution by natural selection Selective breeding Genetic engineering</p> <p><b>Topic: B15 Genetics and evolution</b></p> <p>Extinction Antibiotic resistance bacteria Classification</p>	<p><b>Topic: C8 Rates and equilibrium</b></p> <p>Effect of temperature, concentration, surface area and catalyst Reversible reactions Dynamic equilibrium Altering conditions</p> <p><b>Topic: C9 Crude oil and fuels</b></p> <p>Hydrocarbons Fractional distillation</p>	<p><b>Topic: C13 The Earth's atmosphere</b></p> <p>History of our atmosphere Our evolving atmosphere Greenhouse gases Global climate change Atmospheric pollutants</p> <p><b>Topic: C14 The Earth's resources</b></p> <p>Finite and renewable resources</p>	<p><b>Topic: P8 Forces in balance</b></p> <p>Vectors &amp; scalars Forces between objects Resultant forces Moments at work (T) Centre of mass Moments &amp; equilibrium (T) Parallelogram of forces Resolution of forces</p> <p><b>Topic: P9 Motion</b></p>	<p><b>Topic: P12 Wave properties</b></p> <p>The nature and properties of waves Reflection and refraction</p> <p><b>Topic: P13 Electromagnetic waves</b></p> <p>The electromagnetic spectrum Light, infrared, microwaves and radio waves Communications UV waves, x-rays, and gamma rays</p>

<p>Control of blood glucose levels Treating diabetes Human reproduction Hormones &amp; the menstrual cycle Artificial control of fertility Plant hormones (T)</p> <p><b>Topic: B12 Homeostasis in action (T)</b></p> <p>Controlling body temperature (T) Removing waste products (T) The human kidney (T) Kidney transplants (T)</p> <p><b>Topic: B13 Reproduction</b></p> <p>Types of reproduction Cell division in reproduction DNA &amp; the genome DNA structure &amp; protein synthesis (T) Gene expression &amp; mutation (T) Inheritance in action More about genetics Inherited disorders</p>	<p><b>Topic: B16 Adaptation, interdependence and competition</b></p> <p>The importance of communities Organisms in their environment Distribution and abundance Competition in plants and animals Adapt and survive Adaptation in plants and animals</p> <p><b>Topic: B17 Organising an ecosystem</b></p> <p>Feeding relationships Materials recycling The carbon cycle</p> <p><b>Topic: B18 Biodiversity and ecosystems</b></p> <p>The human population explosion Air, land and water pollution Deforestation and peat destruction Global warming Maintaining biodiversity</p>	<p>Combustion Cracking hydrocarbons</p> <p><b>Topic: C10 Organic reactions (T)</b></p> <p>Reactions of alkenes (T) Structures of alcohols, carboxylic acids &amp; esters (T) Reactions and uses of alcohols (T) Carboxylic acids and esters (T)</p> <p><b>Topic: C11 Polymers (T)</b></p> <p>Addition polymerisation (T) Condensation polymerisation (T) Natural polymers (T) DNA (T)</p> <p><b>Topic: C12 Chemical analysis</b></p> <p>Pure substances and mixtures Analysing chromatograms Testing for gases</p>	<p>Water safe to drink Treating waste water Extracting metals from ores Life cycle assessments Reduce, reuse, recycle</p> <p><b>Topic: C15 Using our resources</b></p> <p>Rusting Alloys Composites The Haber process</p>	<p>Distance time graphs Velocity time graphs Acceleration Stopping distances</p> <p><b>Topic: P10 Force and motion</b></p> <p>Force and acceleration Weight &amp; terminal velocity Forces &amp; braking Momentum Using the conservation of momentum (T) Impact forces (T) Forces &amp; elasticity</p> <p><b>Topic: P11 Force &amp; pressure (T)</b></p> <p>Pressure &amp; surfaces (T) Pressure in a liquid at rest (T) Atmospheric pressure (T) Upthrust &amp; floatation (T)</p>	<p>X-rays in medicine</p> <p><b>Topic: P14 Light (T)</b></p> <p>Reflection of light (T) Refraction of light (T) Light &amp; colour (T) Lenses (T)</p> <p><b>Topic: P15 Electromagnetism</b></p> <p>Magnetic fields of electric currents The motor effect Electromagnets in devices (T) The generator effect (T) The AC generator (T) Transformers (T)</p> <p><b>Topic: P16 Space (T)</b></p> <p>Formation of the Solar System (T) Life history of a star (T) Planets, satellites &amp; orbits (T) The expanding universe (T) The beginning and end of the universe (T)</p>
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