

Science Paper 1 RAG Rating – Combined Science (Trilogy) – HIGHER TIER

Codes refer to Kerboodle Science for Trilogy

Biology	Chemistry	Physics
<p>B1 – Cell Structure and Transport</p> <ul style="list-style-type: none"> • Microscopes and magnification • Animal, plant and bacterial cells • Specialised eukaryotic cells • Diffusion, osmosis and active transport <p>B2 – Cell Division</p> <ul style="list-style-type: none"> • Mitosis and growth • Stem cells and their use <p>B3 – Organisation and the Digestive System</p> <ul style="list-style-type: none"> • Tissues and organs • The digestive system and food tests • Enzymes and factors that affect their activity <p>B4 – Organising Animals and Plants</p> <ul style="list-style-type: none"> • Blood and blood vessels • Structure of the heart, valve replacement and artificial hearts • Breathing and gas exchange • Plant tissues, transport and transpiration in plants <p>B5 – Communicable Diseases</p> <ul style="list-style-type: none"> • Health, disease and pathogens; defences of the body • Examples of viral/bacterial/fungal diseases in animals/plants <p>B6 – Preventing and Treating Disease</p> <ul style="list-style-type: none"> • Vaccination; antibiotics; painkillers • Discovering new drugs and drugs trials <p>B7 – Non-Communicable Diseases</p> <ul style="list-style-type: none"> • Cancer • Risks of smoking, poor diet, lack of exercise and alcohol <p>B8 – Photosynthesis</p> <ul style="list-style-type: none"> • Photosynthesis equation and how it works in plants • Experiments to show photosynthesis or its rate • Effects of CO₂, temperature and light intensity on rate • How plants use glucose <p>B9 – Respiration</p> <ul style="list-style-type: none"> • Aerobic respiration • Effects of exercise • Anaerobic respiration • Role of the liver and metabolism 	<p>C1 – Atomic Structure</p> <ul style="list-style-type: none"> • Atoms and ions • Sub-atomic particles, electron configuration, isotopes • Separating mixtures, including simple fractional distillation and paper chromatography • History of the development of the atomic model <p>C2 – The Periodic Table</p> <ul style="list-style-type: none"> • History of the development of the Periodic Table • Chemical and physical properties of Groups 1 (Alkali Metals) and 7 (Halogens) • Trends in the Periodic Table <p>C3 – Structure and Bonding</p> <ul style="list-style-type: none"> • Particles and states of matter • Ionic substances and ionic bonding • Covalent substances and covalent bonding • Simple and giant covalent structures • Forms of carbon • Metals, alloys and metallic bonding <p>C4 – Chemical Calculations</p> <ul style="list-style-type: none"> • Calculating relative formula masses, reacting masses and moles • Using masses to balance equations • Expressing concentration of solutions <p>C5 – Chemical Changes</p> <ul style="list-style-type: none"> • Reactivity series • Displacement reactions • Ionic equations; half equations • Reactions of metals with oxygen, water, acids • Reactions of soluble and insoluble bases with acids • pH scale and indicators • Strong and weak acids <p>C6 – Electrolysis</p> <ul style="list-style-type: none"> • Electrolysis of molten ionic compounds or aqueous solutions • Prediction of products at each electrode • Extraction of aluminium <p>C7 – Energy Changes</p> <ul style="list-style-type: none"> • Describing exothermic and endothermic reactions • Uses of exo and endothermic reactions • Reaction profile diagrams • Bond energy calculations 	<p>P1 – Conservation and Dissipation of Energy</p> <ul style="list-style-type: none"> • Energy stores and transfers; conservation of energy • Energy transfer and work done • Calculations of gravitational potential energy changes, kinetic and elastic energy <p>P2 – Energy Transfer by Heating</p> <ul style="list-style-type: none"> • Energy transfer by conduction • Specific heat capacity • Heating and insulating buildings <p>P3 – Energy Resources</p> <ul style="list-style-type: none"> • Demand and supply of energy • Non-renewable energy sources (fossil fuel and nuclear power stations) • Renewable energy sources and electricity generation • Energy generation and the environment <p>P4 – Electric Circuits</p> <ul style="list-style-type: none"> • Current and charge • Potential difference and resistance • Components • Series and parallel circuits <p>P5 – Electricity in the Home</p> <ul style="list-style-type: none"> • Direct and alternating current • Cables and plugs • Electrical power • Appliances and efficiency <p>P6 – Molecules and Matter</p> <ul style="list-style-type: none"> • Density • Describing arrangement and behaviour of particles in solids/liquids/gas • Changes of state • Internal energy • Specific latent heat • Gas pressure and temperature <p>P7 – Radioactivity</p> <ul style="list-style-type: none"> • Atoms and radiation • Discovery of the nucleus • Alpha, beta and gamma radiation – different characteristics, hazards and uses • Activity and half-life