Science Paper 1 RAG Rating – Combined Science (Trilogy) - FOUNDATION TIER

Codes refer to Kerboodle Science for Trilogy

Biology	Chemistry	Physics
B1 – Cell Structure and Transport • Microscopes and magnification • Animal, plant and bacterial cells • Specialised eukaryotic cells • Diffusion, osmosis and active transport **B2 – Cell Division** • Mitosis and growth • Stem cells and their use **B3 – Organisation and the Digestive System** • Tissues and organs • The digestive system and food tests • Enzymes and factors that affect their activity **B4 – Organising Animals and Plants** • Blood and blood vessels • Structure of the heart, valve replacement and artificial hearts • Breathing and gas exchange • Plant tissues, transport and transpiration in plants **B5 – Communicable Diseases** • Health, disease and pathogens; defences of the body • Examples of viral/bacterial/fungal diseases in animals/plants **B6 – Preventing and Treating Disease** • Vaccination; antibiotics; painkillers • Discovering new drugs and drugs trials **B7 – Non-Communicable Diseases** • Cancer • Risks of smoking, poor diet, lack of exercise and alcohol **B8 – Photosynthesis** • Photosynthesis equation and how it works in plants • Experiments to show photosynthesis or its rate • Effects of CO_2, temperature and light intensity on rate • How plants use glucose **B9 – Respiration** • Aerobic respiration • Effects of exercise • Anaerobic respiration • Metabolism	**C1 – Atomic Structure** • 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 **C2 – The Periodic Table** • 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 **C3 – Structure and Bonding** • 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 **C4 – Chemical Calculations** • Calculating relative formula masses • Expressing concentration of solutions **C5 – Chemical Changes** • Reactivity series • Displacement reactions • Reactions of metals with oxygen, water, acids • Reactions of soluble and insoluble bases with acids • pH scale and indicators **C6 – Electrolysis** • Electrolysis of molten ionic compounds or aqueous solutions • Prediction of products at each electrode • Extraction of aluminium **C7 – Energy Changes** • Describing exothermic and endothermic reactions • Uses of exo and endothermic reactions • Reaction profile diagrams	**P1 – Conservation and Dissipation of Energy** • Energy stores and transfers; conservation of energy • Energy transfer and work done • Calculations of gravitational potential energy changes, kinetic and elastic energy • Efficiency **P2 – Energy Transfer by Heating** • Energy transfer by conduction • Specific heat capacity • Heating and insulating buildings **P3 – Energy Resources** • 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 **P4 – Electric Circuits** • Current and charge • Potential difference and resistance • Components • Series and parallel circuits **P5 – Electricity in the Home** • Direct and alternating current • Cables and plugs • Electrical power • Appliances and efficiency **P6 – Molecules and Matter** • Density • Describing arrangement and behaviour of particles in solids/liquids/gas • Changes of state • Internal energy • Specific latent heat • Gas pressure and temperature **P7 – Radioactivity** • Atoms and radiation • Discovery of the nucleus • Alpha, beta and gamma radiation – different characteristics, hazards and uses • Activity and half-life