Topic Lists for Science

You can be tested on any of the content from Paper 2. Key component knowledge to focus on for the PPE in Feb is listed below.

All content in bold is higher only (in addition to the foundation content)

	Combined Science	Separate Science
Biology	• Water cycle • Desalination/water treatment • Hormones • The circulatory system • Plant transport system • Biomass • Food chains • Population methods • Carbon cycles • The blood • Red and white blood cell's structure/function • **Root hair cells** • **Hormones – fertility** • **The heart** • **Carbon in the atmosphere** • **Nitrogen cycle**	• Key concepts (paper 1 and 2) • Photosynthesis • Light intensity (inc practical) • Mineral ions & water absorption • Transpiration / translocation • Plant adaptation • Plant hormones • Animal Hormones • Metabolic rate • Menstrual cycle (inc hormones) • Thermoregulation & osmoregulation • The kidneys • Transport & exchange • Circulatory system • Heart • Cellular respiration / respiration rates • Ecosystems • Energy transfers • Abiotic factors / Biotic factors • Quadrats practical • Pollution • Parasitism / mutualism • Biodiversity & humans • Food security • Water cycle / carbon cycle / nitrogen cycle • Decomposition
Chemistry	• Groups in the periodic table – Group 1, 7 and 0 their properties.	Combined plus:

	• Rates of reaction and factors affecting their rate of reaction. • Catalysts • Calculating mass • Empirical formulae • Energy changes – Exothermic and endothermic • Hydrocarbons • Fractional distillation • Combustion and incomplete combustion • Changing atmosphere and climate change • Alkanes and Alkenes • Atomic number and mass number • Gas tests • Hazard symbols • Ionic bonding – sodium chloride • **Isotopes calculations**	• Alcohols and carboxylic acids • Polymers • Testing for ions • Bulk and surface properties of matter, including nanoparticles
Physics	• Structure of an atom • Magnetic materials • Magnetic field lines • **GPE and KE equation** • **Energy transfers** • **Circuit symbols** • **Calculating resistance** • **Types of resistors - graphs** • **Measuring density** • **Spring extension** • **Specific heat capacity** • **Features of a 3 pin plug** • **Magnetic fields (around a wire)** • **Flemings left hand rule** • **Magnetic flux**	• Forces doing work (work done and power) • Forces and their effects • Rotational forces (gears and levers) • Electricity and circuits: current, charge, pd, symbols, resistance, transferring energy, power, electrical safety • Static electricity • Magnetism and the motor effect • Electromagnetic induction, the national grid, transformers • The particle model: density, physical changes, specific heat capacity, specific latent heat, properties of gases • Forces and matter: elasticity, work done, forces on a spring, pressure, pressure in fluids, pressure of a column of fluid, upthrust

	Foundation only **<u>Foundation and Higher</u>** **Higher only**	