

Topic Lists for Science

You can be tested on any of the content from Paper 1. Key component knowledge to focus on for the PPE in Nov is listed below.

Check you look at the correct column

	Combined Science Higher	Combined Science Foundation	Separate Science
Biology	Function and role of the heart Treatments for the heart Pathogens Vaccines Plant diseases Rate of photosynthesis Light intensity Practical Transport and movement through cells Diffusion, Active Transport and Osmosis Osmosis Required Practical Plant structure, and transport of material through a plant Respiration in plants Specialised cells and their adaptations Stem cells Microscopy and magnification	Plant and animal cell structure and organelle functions Bacterial cells What are stem cells Food tests Aerobic and Anaerobic respiration Function and role of the heart Treatments for the heart What are the different pathogens Viruses and Vaccinations Heart rate and exercise Osmosis practical Transport and movement through cells – Diffusion, Active Transport and Osmosis Photosynthesis, structure of a leaf Light intensity required practical Plant diseases	Types of pathogens – Symptoms and treatments Impacts of healthy living and diet Enzyme Required practical Types of Enzymes and what enzymes are Transport and movement through cells Osmosis, diffusion and active transport Light Intensity required practical Photosynthesis Plant structure and plant diseases Blood, Arteries, Veins and Capillaries Magnification Structure and function of the heart Aerobic and anaerobic respiration Stem cells – what are they, differences, advantages and disadvantages Red blood cells – structure Agar plate practical – foundation tier only Respiration in animals and plants
Chemistry	Electrolysis Calculating concentration Energy changes in reactions Models of atoms Atomic structure Group 7 Extracting metals Half equations Alloys	Models of atoms Atomic structure Isotopes Metallic bonding Ionic bonding Covalent bonding Allotropes of carbon Calculating relative formula mass Extracting metals	Development of Periodic table Atomic structure Group 0 Group 1 Group 7 Transition metals Isotopes Ionic bonding Allotropes of carbon

	<p>PH</p> <p>Covalent bonding</p> <p>Calculating bond energies</p> <p>Metallic bonding</p> <p>Polymers</p>	<p>Alloys</p> <p>Acids</p> <p>Energy change profiles</p> <p>Filtration</p> <p>Electrolysis</p> <p>Calculating concentration</p> <p>Energy changes in reactions</p>	<p>Polymers</p> <p>Oxidation and reduction</p> <p>Extracting metals</p> <p>Atom economy</p> <p>Nonparticles</p> <p>Electrolysis</p> <p>Fuel cells</p> <p>Covalent bonding</p> <p>Bond energies</p> <p>Acids and Alkalis</p> <p>Titration</p> <p>Percentage yield</p>
Physics	<p>Energy stores and transfers</p> <p>Renewable and non-renewable energy</p> <p>Efficiency</p> <p>Specific Heat Capacity</p> <p>Electricity: resistance; power; mains supply (50Hz); electrical safety; AC/DC</p> <p>Types of radiation</p> <p>Radioactive decay</p> <p>Half-life</p> <p>Density</p>	<p>Isotopes and Atomic Structure (P,E,N)</p> <p>Alpha, Beta and Gamma – properties</p> <p>Circuit Symbols</p> <p>Gravitational Potential Energy (use of equation)</p> <p>Kinetic Energy (use of equation)</p> <p>Mains supply (50Hz)</p> <p>Wiring a plug – Colour of wires and their function</p> <p>Specific Latent Heat equation</p> <p>Efficiency equation</p> <p>Energy Stores and transfers</p> <p>Pros and Cons of renewable energy</p> <p>Specific Heat Capacity Practical</p>	<p>Renewable v Non Renewable energy – positives and negatives of each</p> <p>Specific Heat capacity practical (method, variables, hazards & equation)</p> <p>Resistance in circuits</p> <p>Effects of carbon dioxide emissions.</p> <p>Isotopes</p> <p>Nuclear Fusion v Nuclear Fission</p> <p>Power output in parallel circuits</p> <p>Irradiation v contamination</p> <p>Nuclear decay and balancing equations</p> <p>Half Lives</p> <p>Specific latent heat and equation</p> <p>Pressure in gases</p> <p>Gravitational Potential energy v Kinetic energy (Equations)</p> <p>Spring constant equation</p>