Topic Lists for AQA Science (Combined and Triple)

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

Required practicals are italic and bold

Blue is extra higher content needed to know along side the rest of the topics added.

	Combined Science/Separate Science modules in Paper 1	**Higher and Foundation Combined Science Key points to revise**	**Sep science only Key points to revise**
Biology	Cell Biology Organisation Infection and Response Bioenergetics	Types of cells and adaptations Transport of materials across cells Digestion ***pH and enzymes – Required practical*** Photosynthesis – what is respiration, active transport, transpiration Heart and functions Arteries, Capillaries and Veins Function and structure of the lungs Non communicable diseases Communicable diseases ***Microscope – using a microscope – Required Practical*** Structure and function of a leaf Factors that affect the rate of photosynthesis Antibiotics and bacterial growth on agar plates required practical Use of stem cells and what these are.	Types of cells ***Osmosis required practical*** Example of viruses and body's defences to viruses Factors effecting the rate of ***photosynthesis required practical*** Malaria Mitosis Digestion Food tests Factors that effect enzymes ***pH and Enzyme required practical*** Plant organ system Meristem Clinical trials Structure of the heart Function and structure of veins , capillaries and arteries Coronary Heart Disease What is bacteria and examples Antibiotic and bacterial growth on agar required practical

			Use of Antibiotics Effects of exercise on the heart Anaerobic and aerobic respiration Monoclonal antibodies
Chemistry	Atomic structure and the Periodic Table Bonding Structure and the properties of matter Quantitative Chemistry Chemical Changes Energy Changes	Structure of an atom – electrons protons and neutrons , charge and mass Change of state Who discovered the atom and the history of the atom ***Temperature change required practical*** What is Endothermic and exothermic Ionic bonding – structure and formation Covalent bonding – structure and formation Giant covalent bonding – Structure and formation Electrolysis – what is it and what does it do What is produced at the different electrodes How is aluminium extracted from molten mixture using electrolysis Conservation of mass ***Investigating the volume of gas collected with different masses and concentration practical*** Calculate percentage mass Acidic and alkali solutions Calculate concentration	Structure of an atom – electrons protons and neutrons , charge and mass Change of state Acid and Alkali – how to test and what ions are present Carbon structure and properties Allotropes of carbon Properties of metals and non metals Alloys Graphite and Diamond – structure and properties Nanoparticals Reactivity of metals Ionic compounds – structure and properties ***What is electrolysis -how this is used and works*** Redox reactions Ionic Equations Plum pudding model Calculate relative formula mass Temperature change practical ***Making salt crystal practical form an acid and a base practical*** Reaction profiles Energy bonds Structure of polymers

		What are the properties of group 1 metals and how they react in water, oxygen, what colour flames Group 7 and 0 properties Know electrolysis in solution and the rule for halogens and if more reactive metal than hydrogen Know how to separate mixtures – evaporation, filtration, distillation What are redox reactions? Structure and properties of Graphite and Diamond	Titration of an acid and alkali Use of metals and their properties Ionic and half equations for electrolysis Elements in the Periodic table. Groups and their properties Displacement reactions Percentage atom economy
Physics	Energy Electricity Particle model of matter Atomic Structure	Types of radiation Alpha particle or Beta particle how these are represented in an equation Half life Gravitational Potential Energy Kinetic energy Specific Heat Capacity Change in state Specific Heat of Fusion Electrical Symbols ***Resistance of a wire practical*** What is resistance? Types of renewable and non renewable energy Series and Parallel Circuits National Grid Effects of pressure	Electrical circuits and components Types of resistance of different components (filament lamp and diode) Components in a circuit Gold leaf scattering experiment Types of radiation and properties Isotopes Half life Contamination and irradiation Nuclear fission and fusion Renewable and non renewable energy Elastic potential energy Gravitational energy Pressure and units National grid ***Specific heat capacity practical*** Potential difference Charge Flow Changes of state and what happens with these particles as it changes state Calculating radioactive decay Resistance of wire practical

			Resistance of other components – filament light bulb, diode History of an atom and its sub atomic particle discovery Effects on changing pressure