

Core Science Revision Checklist

Biology B1

- Grouping organisms
- Classification
- Relationships between species
- Need for resources and competition
- Intensive farming advantages and drawbacks
- Indicator species
- Effects of heavy metals, pesticides, sewage and fertilisers.
- Food chains and food webs
- Pyramids of numbers and biomass
- Carbon and nitrogen cycles
- Genes and DNA
- Genetic profiling
- Inheritance
- Gametes and chromosomes
- Punnett squares
- GM crop technology
- Variation – continuous and discontinuous
- Sexual and asexual reproduction
- Gene mutations
- Gene therapy
- Heritable variation
- Natural selection
- Microbial resistance
- Sense organs
- Stimuli – light touch etc.
- Phototropism and gravitropism
- Sensitivity and reaction times
- Hormones – chemical messengers e.g. insulin
- Diabetes
- Be able to label skin diagram
- Negative feedback
- Food and energy
- Effects of alcohol and drug abuse

Chemistry C1

- Elements
- Structure of the atom
- Periodic table
- (i) Mendeleev
- (ii) Groups and periods
- (iii) Metals and non-metals
- Trends in groups
- Compounds
- Space filler diagrams
- Formula
- Metals ores
- Reduction
- Oxidation
- Displacement reactions

- Blast furnace raw materials and reactions
- Electrolysis/electrode/anode/
- cathode and electrolyte
- Electrode reactions
- Sustainability and recycling
- Uses of aluminium, copper and titanium related to their properties
- Alloys
- Nanoparticles – uses and hazards
- Electrolysis of water
- Hydrogen as a fuel
- Uses of chlorine, iodine, helium, neon and argon
- Fluoride and prevention of tooth decay
- For and against fluoridation
- pH scale
- reactivity series
- neutralisation
- Making salts
- Hydrocarbons
- Crude oil formation and separation into fractions
- Monomers, polymers and polymerisation
- Plastics uses and disposal
- Plate tectonics theory and evidence
- Formation of and composition of atmosphere
- Global warming
- Acid rain

Physics P1

- Generation of electricity
- Running , commissioning and decommissioning costs of power stations
- Environmental impact of electricity generation
- Density and its calculation
- Electrical distribution
- National grid and transformers
- $P = VI$ calculations
- Power and energy costs – kilowatt hour calculations
- Alternative energy sources.
- Energy transfer
- Sankey diagrams
- Energy efficiency
- Conduction, convection and radiation – heat transfer
- Wave characteristics and calculations
- Electromagnetic spectrum
- Thermal radiation and nature of surface
- Greenhouse effect
- Communication – infra red and microwaves
- Ionising radiation
- Radioactive decay
- Alpha, beta and gamma radiation
- Background radiation
- Distance scales in universe, solar system and galaxies
- Absorption spectrum and absorption lines

- Hubble and cosmological red shift
- Big bang model
- Cosmic Microwave background