

AQA GCSE Combined Science: Trilogy (Higher) - Topics by Paper

BIOLOGY

Paper 1

1. Cell Biology

- Animal and plant cells
- Microscopy and magnification
- Specialised cells
- Methods of transport (inc osmosis RP)
- Mitosis and cell cycle
- Cell specialisation and differentiation
- Stem cells



Notes



Videos



Flashcards

2. Organisation

- Organ systems, inc digestive system
- Food tests
- Enzymes and RP
- Components of the blood
- Blood vessels
- Heart and treatments
- Gas exchange
- Leaf adaptations
- How plants transport materials and use active transport
- Transpiration and factors affecting this



Notes



Videos



Flashcards

3. Infection and Response

- Communicable and non-communicable diseases
- Different pathogens
- Human defence systems inc white blood cells
- Vaccinations
- Antibiotics and painkillers
- Discovery and development of drugs



Notes



Videos



Flashcards

4. Bioenergetics

- Plant adaptations
- Photosynthesis and factors affecting RP
- How plants use glucose
- Economics of photosynthesis



- Aerobic respiration
- Anaerobic respiration
- Response to exercise
- Metabolism and the liver

Paper 2

5. Homeostasis and Response

- Nervous system and reflexes
- Reaction times RP
- Endocrine system
- Blood glucose concentration and diabetes
- Reproduction and menstrual cycle
- Controlling fertility
- Infertility treatments



Notes



Videos



Flashcards

6. Inheritance, Variation and Evolution

- Asexual and sexual reproduction
- Meiosis
- DNA and the genome
- Inheritance in action (Punnett squares)
- Inherited diseases
- Genetic screening
- Theories of evolution
- Fossils and extinction
- Antibiotic resistance
- Uses of genetics
- Classification



Notes



Videos



Flashcards

7. Ecology

- Levels of organisation
- Food chains and webs
- Decomposition
- Carbon cycle
- Water cycle
- Biodiversity
- Human impacts



Notes



Videos



Flashcards

CHEMISTRY

Paper 1

1. Atomic Structure and the Periodic Table

- Atoms, elements, compounds
- Chemical equations inc balancing
- History of the atom
- PEN, ions and isotopes
- History of the periodic table
- Metals and non-metals
- Groups 1, 2, 7 and 0
- Separation methods



Notes



Videos



Flashcards

2. Bonding, Structure and Properties of Matter

- Ionic bonding and properties
- Covalent bonding and properties
- Allotropes
- Metallic bonding
- Alloys
- Polymers



Notes



Videos



Flashcards

3. Quantitative Chemistry

- Relative atomic and formula mass
- Conservation of mass
- Mols
- Percentage mass of an element
- Reacting masses
- Limiting reactant
- Concentration



Notes



Videos



Flashcards

4. Chemical Changes

- Reactivity series
- Extraction of metals (displacement)
- Acids, alkalis and salts
- pH scale and neutralisation
- Electrolysis
- Making a salt RP



Notes



Videos



Flashcards

5. Energy Changes

- Exothermic and endothermic reactions
- Reaction profiles
- Temp changes RP
- Bond energies



Notes



Videos



Flashcards

Paper 2

6. Rate and Extent of Chemical Change

- Factors affecting rate
- Collision theory
- Reversible reactions
- Equilibrium



Notes



Videos



Flashcards

7. Organic Chemistry

- Crude oil
- Alkanes and alkenes (inc properties)
- Cracking
- Fractional distillation
- Bond energies



Notes



Videos



Flashcards

8. Chemical Analysis

- Pure and impure substances
- Chromatography
- Formulations
- Gas tests



Notes



Videos



Flashcards

9. Chemistry of the Atmosphere

- Composition of the atmosphere
- Greenhouse gases
- Climate change
- Air pollution



Notes



Videos



Flashcards

10. Using Resources

- Earth's resources
- Potable water
- Waste water treatment
- Life cycle assessments



Notes



Videos



Flashcards

- Recycling
- Extraction of metals

PHYSICS

Paper 1

1. Energy

- Energy stores and transfers
- Energy efficiency
- Heating (conduction and convection) and insulation
- Energy resources



Notes



Videos



Flashcards

2. Electricity

- Circuits
- Current, voltage and resistance inc RP
- Series and parallel circuits
- Resistors in series and parallel RP
- Components in series RP
- Mains electricity including ac/dc and National Grid
- Electrical safety



Notes



Videos



Flashcards

3. Particle Model of Matter

- States of matter and changing state
- Internal energy
- Density
- Motion of gases
- Specific latent heat
- Specific heat capacity



Notes



Videos



Flashcards

4. Atomic Structure

- Structure of the atom
- Radioactive decay
- Nuclear equations
- Half-life
- Background Radiation



Notes



Videos



Flashcards

Paper 2

5. Forces

- Types of forces
- Resultant force
- Distance-time graphs
- Velocity-time graphs
- Acceleration inc RP
- Speed and momentum
- Newton's laws
- Stopping distance
- Extension of a spring RP
- Weight and terminal velocity



Notes



Videos



Flashcards

6. Waves

- Types of waves and properties
- Sound and light
- EM spectrum
- Wavespeed RP
- Speed of a wave in air RP
- Period of a wave
- Infrared RP



7. Magnetism and Electromagnetism

- Magnetic fields
- Electromagnets
- Electric motors
- Uses of motor effect



Notes



Videos



Flashcards