Triple Science Revision – Exclusive Content: Summer Term 2025

3 assessments: Biology Paper 1, Chemistry Paper 1, Physics Paper 1. All 105 minutes (1 hour 45 minutes)

Calculator, ruler, pencil, protractor are required for all assessments.

Biology Topic 1: Cell Structure & Transport	R	A	G
Reproduction of bacteria by binary fission.			
How to prepare an uncontaminated culture using aseptic technique.			
Required practical: investigate the effect of antiseptics or antibiotics on bacterial growth using agar plates and measuring zone of inhibition.			

Biology Topic 2: Organisation	R	A	G
There is no exclusive content for this unit			

Biology Topic 3: Communicable Diseases	R	A	G
How monoclonal antibodies are produced and used.			
How plant diseases are detected			
How ion deficiencies damage plants (nitrates, magnesium ions)			
Physical and chemical defence responses in plants, including mechanical adaptations.			

Biology Topic 4: Bioenergetics	R	A	G
There is no exclusive content for this unit			

Chemistry Topic 1: Atomic Structure and Periodic Table	R	A	G
Transition metals: typical properties and comparison with group 1.			
Transition metal compounds are colourful compounds.			

Chemistry Topic 2 Bonding, structure, and the properties of matter	R	A	G
Nanoparticles are particles measured on the scale of 1-100nm in size with incrediblt high surface area to volume ratios.			
Uses and applications of nanoparticles: medicine, electrons, cosmetics, sun creams.			

Chemistry Topic 3: Quantitative chemistry	R	A	G
Yield as the measure of useful product against expected outcome.			
Atom economy as the measure of useful product made from starting materials.			
Using mol/dm^3 as a measure of concentration including converting to and from g/dm^3.			
Calculating the number of moles of a gas.			

Chemistry Topic 4: Chemical Reactions	R	A	G
Titration as a technique to find the reacting volumes between acids and alkalis.			
Required practical: determination of the reacting volumes and concentration of solutions of a strong acid and a strong alkali by titration.			

Chemistry Topic 5: Energy changes	R	A	G
A simple cell is made by contacting two different metals connected by an electrolyte.			
Differences between rechargeable batteries and non-rechargeable batteries.			
Fuel cells and their use to reacting hydrogen and oxygen indirectly, including the half equations.			

Physics Topic 1: Energy stores and transfers	R	A	G
Required practical: the effect of insulation on the rate of energy transfer.			

Physics Topic 2: Electricity	R	A	G
Static charge caused by the transfer of electrons from one insulating material to another.			
The electric field is the space around a charged object where it can apply a force.			

Physics Topic 2: Electricity	R	A	G
Draw the field diagrams for isolated electrically charged sphere.			
Use electric fields to explain non-contact forces and sparking.			

Physics Topic 3: Particle model of matter	R	A	G
Calculating the pressure or volume when either the pressure or volume changes.			
How doing work on a gas changes the internal energy and so the temperature of a gas.			

Physics Topic 4: Radioactivity	R	A	G
Sources of background radiation and factors that affect how much background radiation is received.			
Hazards of using isotopes with different half-lives.			
Uses of nuclear radiation: medicine (exploration, gamma knife).			
Fission as the process of splitting a large of unstable nucleus with neutrons to cause chain reactions.			
Fusion as the joining of two light nuclei to form a heavier nucleus and the conversion of mass into energy.			

Other useful revision resources:

https://cognitoedu.org/home - revision videos and access to past papers and exam questions with mark schemes. Follow the list of topics above.

https://www.kayscience.com/ - more revision videos and quizzes to support your revision.

https://www.bbc.co.uk/bitesize/examspecs/zpgcbk7 - BBC Bitesize GCSE Biology

https://www.bbc.co.uk/bitesize/examspecs/z8xtmnb - BBC Bitesize GCSE Chemistry

https://www.bbc.co.uk/bitesize/examspecs/zsc9rdm - BBC Bitesize GCSE Physics

https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF - AQA GCSE Biology Specification – read section 4 for exam specific content.

https://filestore.aqa.org.uk/resources/chemistry/specifications/AQA-8462-SP-2016.PDF - AQA GCSE Chemistry Specification – read section 4 for exam specific content.

https://filestore.aqa.org.uk/resources/physics/specifications/AQA-8463-SP-2016.PDF - AQA GCSE Physics Specification – read section 4 for exam specific content.