The Science guide to the Science of revising Science for Science exams.

Top Revision Tips

1. **Plan your revision** – plan each week with the things you've got to do (school, family commitments) the things you want to do (a friend's birthday, football club) and then the revision you need to do.
2. **The 25-minute rule** – never revise a topic for more than 25 minutes (your brain can't handle it). Instead, plan for 25 minutes of revision on a topic (like Forces) before having a 5 minute break, then return to a completely different topic (like Cells) for the next 25 minutes.
3. **Pretend you're at school** – your brain has been trained to learn best when it's in a well-lit room, at a desk, on a sturdy chair, with no distractions like music and phones (yes, that's right, a classroom). Sitting on your bed, listening to music and messaging on WhatsApp isn't going to cut it!
4. **Be honest** – identify your strengths and weaknesses and then revise the weaknesses first. Yes, you'll feel great revising something you know, but it won't make as much of a difference as revising something you're less sure about.
5. **Questions are key** – reading notes only lets you remember 10%, but if you are using your knowledge by trying past papers, or getting a friend or family member to quiz you, you can get to over 70%.

Separate Science Students

You will sit separate science papers, which are longer than those for Combined Students. Pay particular attention to the content marked as "Triple Only" as this is likely to be part of your examinations. Your examinations are 1hr 45 minutes, compared to 1h 15 minutes for Combined Science.

Useful revision resources:

Remember – you were provided with a 3-in-1 revision, work book and past paper at the start of year 10. Everything you need to know, understand, describe and explain can be found there. After each mock examination you were provided with printed personalised feedback which identified which topics you should revise as a priority, and suggested a resource to support this. You can find the full list of everything you need to know here: https://www.aqa.org.uk/subjects/science/gcse/science-8464/specification

Useful websites include:

- www.mmerevise.co.uk
- www.gcsepod.com
- www.physicsandmathstutor.com

Confirmed GCSE Science Examination Dates

These are the confirmed dates for your GCSE Science examinations – for Combined Science and Separate Science students:

Exam Paper	Date	Session
Biology 1	12th May	Afternoon
Chemistry 1	18th May	Morning
Half Term Break		
Physics 1	2nd June	Morning
Biology 2	8th June	Morning
Chemistry 2	12th June	Morning
Physics 2	15th June	Morning

Ideal Revision Dates (Spaced Learning, "2357" method)

These are the dates you should revise for each exam paper, using a "high retention" method. Remember – each session should be multiples of 25 minutes to maximise concentration.

Content to Revise	1st Session	2nd Session	3rd Session	Last Session
B1-B4	25th April	2nd May	7th May	10th May
C1 – C5	1st May	8th May	13th May	16th May
P1 – P3	16th May	23rd May	28th May	31st May
B5 – B7	22nd May	29th May	3rd June	6th June
C6 – C10	26th May	2nd June	7th June	10th June
P5 – P7 (+P8 for Triple)	29th May	5th June	10th June	13th June

On these dates, you should be spending a minimum time of 4x25 mins (1hr 40 total) on Science revision – focused on attempting the activities in your revision guide and past paper questions.

Required Practical Questions

You will need to revise each of the required practical experiments as part of each topic's revision. RPQs tend to fall into two categories:

1. How to do the experiment, or identify how someone has done it badly
2. Interpreting the results from the experiment

	Biology	Chemistry	Physics
Paper 1s	○ Using a light microscope ○ Osmosis ○ Food tests ○ Enzymes ○ Photosynthesis ○ Effect of antiseptics on bacteria (Triple only)	○ Preparation of soluble salts ○ Titration (Triple Only) ○ Electrolysis ○ Temperature changes in reactions	○ Determining specific heat capacity ○ Thermal Insulation (triple only) ○ Resistance of a wire / combining resistors ○ IV Characteristics (resistor, bulb, diode) ○ Density
Paper 2s	○ Measuring Human Reaction Time ○ Ecological Sampling Techniques ○ Investigate the effect of light/gravity on seedlings (triple only) ○ Investigate the effect of temperature on rate of decay of milk (triple only)	○ Measuring Rate of Reaction ○ Paper Chromatography ○ Analysis and purification of water from various sources ○ Chemical tests to identify ions in an unknown substance (triple only)	○ Investigating the extension of a spring (Hooke's Law) ○ Investigate the effect of force on acceleration ○ Measure speed of waves in liquids and solids (string) ○ Investigate how infrared radiation is absorbed by different surfaces

	Biology Paper 1 (B1 – B4)	Chemistry Paper 1 (C1 – C5)	Physics Paper 1 (P1 – P4)
Topics to Revise	**Cell Biology** ➢ Cell Structure ➢ Cell Division ➢ Transport in Cells **Organisation** ➢ Principles of Organisation ➢ Animal tissues, organs and organ systems ➢ Plant tissues, organs and organ systems **Infection and Response** ➢ Communicable (infectious) diseases ➢ Monoclonal antibodies (Triple only) ➢ Plant Disease (Triple only) **Bioenergetics** ➢ Photosynthesis ➢ Respiration	**Atomic structure and the periodic table** ➢ The Atomic Model ➢ The periodic table ➢ Properties of transition metals (Triple only) **Bonding, structure and the properties of matter** ➢ Chemical bonds, ionic, covalent and metallic ➢ States and Properties of Matter ➢ Structure and Bonding of Carbon ➢ Bulk and surface properties of matter including nanoparticles (Triple Only) **Quantitative chemistry** ➢ Conservation of mass and balanced chemical equations ➢ Moles (HT) and concentrations ➢ Yield and Atom Economy (Triple Only) ➢ Concentration (Triple Only) ➢ Amount of gases (Triple Only) **Chemical Changes** ➢ Reactivity of metals ➢ Reactions of acids ➢ Titration (Triple Only) ➢ Strong and Weak Acids (Triple Only) ➢ Electrolysis **Energy Changes** ➢ Exothermic and endothermic reactions ➢ Chemical cells and fuel cells (Triple Only)	**Energy** ➢ Energy stores, transfers and systems ➢ Conservation and dissipation of energy ➢ National and global energy resources **Electricity** ➢ Current, potential difference and resistance ➢ Series and Parallel Circuits ➢ Domestic uses and safety ➢ Energy Transfers ➢ Static Electricity (Triple only) **Particle model of matter** ➢ Changes of state and the particle model ➢ Internal energy and energy transfers ➢ Particle model and pressure ➢ Pressure in gases (Triple Only) **Atomic structure** ➢ Atoms and isotopes ➢ Atoms and nuclear radiation ➢ Hazards of using radiation ➢ Nuclear fission and fusion

	Biology Paper 2 (B5 - B7)	Chemistry Paper 2 (C5 - C10)	Physics Paper 2 (P5 - P7 + P8 Triple)
Topics to Revise	**Homeostasis & Response** ➢ Homeostasis ➢ The Human Nervous System ➢ Hormonal Coordination in Humans ➢ Infertility Treatments (Higher Only) ➢ Feedback Systems (Higher Only) ➢ Plant Hormones (Triple Only) **Inheritance, Variation & Evolution** ➢ Reproduction ➢ Variation & Evolution ➢ Understanding Genetics and Evolution ➢ Classification of Living Organisms **Ecology** ➢ Adaptations, Interdependence & Competition ➢ Organisation of an Ecosystem ➢ Biodiversity and the effect of human interaction on ecosystems ➢ Trophic Levels in an Ecosystem (Triple Only) ➢ Food Production (Triple Only)	**The rate and extent of chemical change** ➢ Rate of Reaction ➢ Reversible reactions and dynamic equilibrium **Organic Chemistry** ➢ Carbon compounds and fuel and feedstock ➢ Reactions of alkenes and alcohols (Triple Only) ➢ Synthetic and naturally occurring polymers (Triple Only) **Chemical Analysis** ➢ Purity, Formulations & Chromatography ➢ Identification of common gases ➢ Identification of ions by chemical and spectroscopic means* **Chemistry of the Atmosphere** ➢ The composition and evolution of the Earth's atmosphere ➢ Carbon Dioxide and Methane as greenhouse gases ➢ Common atmospheric pollutants and their sources **Using Resources** ➢ Using the Earth's resources and obtaining potable water ➢ Lifecycle assessment and recycling ➢ Using Materials (Triple Only) ➢ The Haber Process & Use of NPK fertilisers (Triple Only)	**Forces** ➢ Forces & their interactions ➢ Work Done and energy transfer ➢ Forces and elasticity ➢ Moments, Levers and Gears (Triple Only) ➢ Pressure & Pressure differences in fluids (Triple Only) ➢ Forces and Motion ➢ Forces and Braking ➢ Momentum (Higher only) ➢ Changes in Momentum (Triple Only) **Waves** ➢ Waves in air, fluids and solids ➢ Electromagnetic Waves ➢ Black Body Radiation (Triple Only) **Magnetism & Electromagnetism** ➢ Permanent and Induced Magnetism, magnetic forces and fields ➢ The Motor Effect ➢ Induced potential, transformers and the National Grid (Triple Only) **Space (Triple Only)** ➢ Solar System (Triple Only) ➢ Red Shift (Triple Only)

TOP REVISION TIPS

Don't let the stress of revision overwhelm you. Stay in control with these top tips.

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1

START AS EARLY AS YOU CAN

Cramming at the last minute is stressful and has limited success.

2

MAKE A PLAN

Work out how much time you have and how long you can spend on each subject.

3

CREATE A STUDY SPACE

Find a quiet spot away from distractions and keep your things all in one place.

4

MIX IT UP

Use a mixture of revision for best results. See our metacognition pods for more info.

5

TAKE REGULAR BREAKS

It is possible to work too hard, make sure to take regular breaks.

6

REVISE WITH A FRIEND

Talking through what you've learned can help information stick.

7

USE PAST PAPERS

These are a great way to get used to exam format and testing what you have learnt.

8

EAT HEALTHY

Certain foods boost your brainpower and will help you remember more.