

How to get a grade 4-4 in AQA Combined Science: Trilogy (Foundation tier)

A 4-4 is a standard pass on the Foundation tier. You get it by making sure of the accessible marks on all six papers: core facts, simple calculations, reading graphs and the required practicals. You can't afford to lose easy marks.

What a grade 4 asks of you

- Accurate recall of the key facts, processes and definitions in every topic, with no topic left out.
- Nearly full marks on the opening questions of each paper and on the first parts of the later questions.
- Reliable simple calculations in all three sciences, with the right units.
- Describing a graph or table with numbers and units, and giving a simple reason for a trend.
- Knowing the method and the usual results of the required practicals.
- Six-mark answers that earn some marks: write several correct, relevant points in a sensible order.

Topics to secure first

- Biology: cell structure and microscopy, diffusion, osmosis and active transport, digestive enzymes and the food tests, the heart and blood, pathogens and vaccination, photosynthesis and respiration, the reflex arc, insulin and diabetes, genetic terms and completing Punnett squares, natural selection, and food chains, quadrats and the carbon cycle.
- Chemistry: atomic structure and electron arrangements, Groups 1, 7 and 0, the three types of bonding and the properties they give, relative formula mass and conservation of mass, the reactivity series, acids, pH and salts, electrolysis products, exothermic and endothermic reactions, factors affecting rate, crude oil, alkanes and cracking, chromatography and the gas tests, and the atmosphere and greenhouse gases.
- Physics: energy stores and the energy equations, power and efficiency, specific heat capacity, $V = IR$ and the series and parallel rules, mains electricity and the three-core cable, density, atomic structure and the three types of radiation, half-life, weight and resultant force, Newton's laws, motion graphs, stopping distances, $v = f\lambda$ and the electromagnetic spectrum, and magnetic fields.

Question types to master first

- Tick-box and choose-from-the-box questions: eliminate wrong options, and tick one box only.
- Give and name questions: fast, precise recall, which flashcards build.
- One- and two-step calculations: equation, substitution, answer with unit. Start with the dozen physics equations that come up most (weight, kinetic energy, gravitational potential energy, power, efficiency, $V = IR$, $P = IV$, $E = Pt$, $Q = It$, density, speed, wave speed) and learn them by heart.
- Reading a value from a graph and describing a trend with numbers.
- Practical questions: name the variables, give a method step, a hazard and a specific improvement.
- Extended method answers: learn a numbered method for each of the 21 required practicals and practise writing it in 6 minutes.

Your revision, week by week

- Week 1: Biology Paper 1 topics (4.1 to 4.4). Week 2: Chemistry Paper 1 (5.1 to 5.5). Week 3: Physics Paper 1 (6.1 to 6.4).
- Week 4: Biology Paper 2 (4.5 to 4.7). Week 5: Chemistry Paper 2 (5.6 to 5.10). Week 6: Physics Paper 2 (6.5 to 6.7).
- In each of those weeks: read the notes for each subtopic, do its worksheet, then finish the week with a short custom paper on the whole paper's topics.
- Week 7: all 21 required practicals and all the equations, across the three sciences.
- Weeks 8 and 9: sit one timed mock exam for each of the six papers, three a week. After each one, fix your weakest two or three subtopics before the next.
- Week 10 and the exam season: before each paper, go through that paper's cheatsheets, your mistakes list and a short mixed custom paper.
- Aim for about five sessions of 30 to 45 minutes a week, plus the Daily 5 every day. If you have less time, spend half a week on each paper in weeks 1 to 6.

How to use this website

- Start with a Mock exam for each paper. Then open Progress: it lists your scores by subtopic, weakest first, so you know where to begin.
- For a weak subtopic, open Notes: read the notes, do the worksheet (the answers are included) and keep the cheatsheet for quick review.
- Work through the grade-by-grade skill lists up to grade 5 and tick off each skill in the checklist when you can do it.
- Build Custom papers of 10 to 20 marks on the subtopics you just revised, mostly at Medium difficulty, with Easy for a brand-new topic. Mark yourself with the mark scheme straight away. Try Hard on a subtopic once you drop no more than a couple of marks at Medium.
- Do the Daily 5 every day: five questions from your weakest topics, and the streak keeps you coming back.
- Use Flashcards for definitions, the food and gas tests, equations and units; the spaced repetition brings each card back just before you'd forget it.
- In Progress, redo the questions you dropped marks on until you get them right.
- Use the Whiteboard to work calculations on screen. If one science keeps pulling your total down, a free 30-minute trial lesson with Chhetri Academy can target it 1-to-1.

Timing in the exam

- A mark a minute, with 5 minutes left to check.
- Answer the quick recall and tick-box questions briskly to build up spare time.
- Always attempt the 6-mark question. A few correct, relevant points reach the bottom or middle level, which is worth up to 4 marks you would otherwise lose.
- On a hard later part, write the first step or the relevant equation, then move on rather than losing five minutes.

Traps at grade 4-4

- Describing when the question says explain, so no reason is given.
- Missing units, or not converting (grams to kilograms, centimetres to metres, minutes to seconds).
- Ignoring the data when the question says 'Use the graph' or 'Use data from the table'.
- Vague wording such as 'the energy is lost' or 'it gets bigger'.
- Mixing up pairs of terms: mitosis and meiosis, glucagon and glycogen, atom, ion and molecule, current and potential difference, mass and weight.
- Ticking two boxes, or leaving questions blank.
- Neglecting your weakest science. Your grade is one total over all six papers, so an extra 10 marks in your weakest science counts exactly as much as 10 marks in your best.

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