

How to get a grade 7-7 in AQA Combined Science: Trilogy

A 7-7 needs nearly all of the accessible marks plus a good share of the harder ones: the Higher-only content, multi-step calculations, explanations that link several ideas, and extended answers at the top level. What separates it from a 5-5 is precision and depth: the exact key terms, complete chains of reasoning, and calculations that stay right to the final line.

What a 7-7 asks of you

- Near-complete recall across all 24 topics, in the specification's own words.
- Every HT-only point understood and practised, not just read.
- Multi-step calculations: choosing the equation, rearranging, converting units, and using standard form and significant figures correctly.
- Explanations as chains of cause and effect built on the big ideas: collision theory, the particle model, concentration gradients, energy transfer, negative feedback.
- Applying what you know to unfamiliar contexts (suggest), and weighing up data and methods (evaluate).
- The top level on most extended answers.
- Few careless losses on the early, easier questions. A 7-7 is lost to slips as often as to hard content.

The Higher-only content to secure

- Biology: glucagon and the negative feedback control of blood glucose; thyroxine and adrenaline; how the hormones of the menstrual cycle interact; using hormones to treat infertility, including IVF; limiting factors in photosynthesis and the inverse square law for light intensity; oxygen debt; constructing Punnett squares and working out probabilities.
- Chemistry: moles, the Avogadro constant, reacting masses, balancing equations from masses and limiting reactants; bond energy calculations; oxidation and reduction in terms of electrons, half equations and ionic equations; strong and weak acids and what a change of one pH unit means; the effect of concentration, temperature and pressure on equilibrium; phytomining and bioleaching; tangents to find a rate at a given time.
- Physics: momentum and its conservation; resolving forces and vector scale drawings; inertia and inertial mass; distance from the area under a velocity–time graph; half-life net decline as a ratio; Fleming's left-hand rule, $F = BIl$ and how an electric motor works; explaining refraction with wave fronts; how radio waves are produced and absorbed by oscillating currents in circuits.
- Each belongs to a subtopic you can select for a custom paper, so drill them one at a time and tick them off.

Question types that separate a 7 from a 5

- Calculations that chain two equations, for example $E = Pt$ with the time given in minutes, then $\Delta E = m c \Delta\theta$ to find the temperature rise.
- Rearranging with squares and square roots: $v^2 - u^2 = 2as$, or finding speed from kinetic energy.
- Mole calculations: 4.8 g of magnesium (A_r 24) is 0.20 mol, so $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$ gives 0.20 mol of MgO (M_r 40), which is 8.0 g.
- Explain questions worth 3 or 4 marks, where each mark is one link in the chain.
- Suggest questions set in unfamiliar contexts, and evaluate questions that need data from both sides and a conclusion.
- Graphs with a tangent, or with two variables at once, such as the rate of photosynthesis against light intensity at two carbon dioxide concentrations.
- Half equations and ionic equations, with the charges balanced.

Your revision, week by week

- Weeks 1 to 6: one paper a week, in the order Biology 1, Chemistry 1, Physics 1, Biology 2, Chemistry 2, Physics 2. Revise every subtopic from its notes, including the HT-only points, do the worksheets, and end the week with a 30-mark custom paper on that paper's topics at Medium, then another at Hard.
- Weeks 7 and 8: a Higher-only drill (moles, bond energies, half equations, equilibrium, feedback hormones, limiting factors, momentum, $F = BIl$) together with all 21 required practicals, including their errors and improvements.
- Weeks 9 and 10: a timed mock exam for each of the six papers. Mark each strictly and fix the gaps with short custom papers before the next.
- Weeks 11 and 12: real AQA past papers under timed conditions, alternating with custom papers on what you got wrong. Rewrite any extended answer that didn't reach the top level.
- Exam season: before each paper, go through its cheatsheets, your mistakes list and the flashcards for its HT-only points.
- About six sessions of 40 to 50 minutes a week, plus the Daily 5 every day.

How to use this website

- Sit a Mock exam per paper early to set your baseline, then use Progress, which lists your subtopics weakest first, to decide each week's targets.
- Work through the grade-by-grade skill lists up to grade 7 and tick them off in the checklist. The grade 6 and 7 skills are where much of the Higher-only content sits.
- Build Custom papers at Hard on any subtopic you've secured at Medium, and mix subtopics from different topics so you practise switching between them, as the real papers make you do.
- In Notes, read the question types and exam tips for each subtopic; they show how that subtopic is asked.
- Keep the Daily 5 streak going for regular, spaced retrieval of your weakest topics, and use Flashcards for the HT-only facts, the equations and exact definitions.
- In Progress, redo every question you dropped marks on, a few days after you first got it wrong.
- Use the Whiteboard for long calculations and tangents. A tutor can speed up a stubborn topic such as moles or the motor effect: Chhetri Academy offers a free 30-minute trial lesson.

Timing in the exam

- Aim to finish your first pass with 5 to 8 minutes to spare.
- Move quickly through the recall marks (well under a minute each) to create time for multi-step calculations and extended answers.
- Extended answers: a minute to plan, 5 minutes to write.
- If a calculation has taken more than about 3 minutes, write the method so far and come back to it at the end.

Traps at grade 7-7

- Rounding partway through a calculation, or giving the wrong number of significant figures.
- Forgetting to square the speed in kinetic energy, or to take the square root at the end.
- Leaving out the final link in an explanation: 'more collisions' instead of 'more frequent successful collisions'.
- In the particle model, saying the particles themselves expand or get hotter, instead of talking about their spacing, speed and energy.
- Evaluations that are one-sided or have no conclusion.
- Methods written in general terms, with no quantities, equipment sizes or specific control variables.
- Giving extra answers 'just in case', so a wrong one cancels a right one.
- Overwriting the easy questions and then rushing the last page.

Free notes, worksheets, practice papers and mock exams at chhetriacademy.com. Written for this site; not taken from past papers.
Stuck? 1-to-1 tutoring with a free 30-minute trial lesson.