Revising GCSE Science at home

AQA Combined Science: Trilogy (8464). Everything from the parents' session, plus the links, in one place. Save this page to your phone's home screen.

6 papers

2 each of Biology, Chemistry, Physics. 1 hr 15 min, 70 marks each

21 required practicals

Assessed in the written papers, not a separate exam

About 20% maths

Of the marks overall (see section 3)

15%+ practical skills

Of all marks, across every paper

Recall | Practicals | Calculations | Exam sheets | Tiers | Calculator & tips | Organisation

Know the facts

Fact recall: useful, but only the start

Test yourself | Little and often | Teach someone | Do homework | Use Sparx

Knowing key terms, definitions, units and equations is the foundation. Without them, nothing else works. But science exams rarely stop at "what is...". They ask students to *use* facts in an unfamiliar situation, explain why, or interpret data. A child who can recite a page but has never applied it will lose marks.

What is worth memorising

- Key words and definitions, and the units for every quantity
- Equations (and being able to rearrange them)
- Required practical methods, and chemical tests (ions, gases)
- Core processes: photosynthesis, respiration, electrolysis, and so on

How to do it well

- **Retrieval, not re-reading.** Cover the page, write what you remember, check, repeat.
- **Little and often.** Three 20-minute sessions beat one 60-minute cram.
- **Mix topics** rather than finishing one before starting the next.

Try at home: "Teach me this topic." You don't need to know the science. If they can explain it simply, they know it.

Homework and Sparx

Doing homework **regularly and on time** is one of the simplest ways to revise. It is practice spread across the year, so topics stay fresh and nothing builds up before the exams.

Sparx can then be used for extra revision beyond the homework that is set:

- **Flashcards.** Short decks of key facts to practise, which are good for quick recall. Students can also practise them by unit.
- **Independent Learning.** Students can choose **any topic**, by searching for it or browsing, and practise it as much as they like.
- **Pick the topics they need.** Use the topics they lost marks on in mocks and past papers, rather than the ones they already know well.

Try at home: ask your child to show you Sparx and pick one topic they find hard.

BBC Bitesize: GCSE Combined Science, AQA Trilogy Website

The AQA Trilogy course specifically. Notes, quizzes and practical-skills pages by topic. Good first stop.

Seneca Website

Free, short lessons with built-in questions. Choose "Combined Science: AQA GCSE" and the correct tier.

Free Science Lessons on YouTube YouTube

Short, clear videos organised by AQA topic and paper.

Cognito on YouTube YouTube

Concise recaps. Some videos include Triple-only content, so check with your child.

Primrose Kitten quick-fire questions YouTube search

Paper-by-paper question sets for testing recall.

Save My Exams: spec summary Website

Plain-English overview of what is assessed.

Physics & Maths Tutor Website

Topic notes, flashcards and exam questions with answers. It has no separate Combined Science section: choose GCSE, then AQA, then Biology, Chemistry or Physics, and skip Triple-only topics.

Sparx: Independent Learning Website

How students choose their own topics to practise.

Sparx: Flashcards Website

How the flashcards work. These pages are written for schools, but they explain the features well.

Think like a scientist

Required practicals



21 practicals



Graphs and results



Safety



Evaluate

Students complete 21 required practicals across the course. There is no practical exam. Instead, at least 15% of the marks across all six papers test practical skills, so every paper contains them.

What the questions look like

- Describe a method, or put steps in the right order
- Name the **independent**, **dependent** and **control** variables
- Choose equipment and say why (for example, why a particular measuring cylinder)
- Identify risks and a sensible precaution
- Plot a graph, draw a line of best fit, spot an anomaly, calculate a mean
- Draw a conclusion from results, then suggest how to improve the experiment
- An *unfamiliar* experiment, using the same skills. Students can't just memorise the 21.

Try at home: pick one practical and ask “What did you change? What did you measure? What did you keep the same? How could you make it more accurate?”

All 21 practicals explained Website

Full list for AQA Trilogy with study tips. Use it as a checklist.

Primrose Kitten: AQA required practicals YouTube search

Method walk-throughs. Some are Triple-only, so match them to the list above.

Malmesbury Education YouTube search

Teachers running each practical with real equipment.

FuseSchool YouTube search

Good for visual learners.

AQA: practical assessment AQA

The official wording of what students must do.

Show your working

Calculations and maths

Calculator	GUESS 5 steps	Equation sheet	Periodic Table

AQA sets maths at about 20% of marks in Combined Science. By subject it is roughly 10% in Biology, 20% in Chemistry and 30% in Physics, so Physics and Chemistry papers are where it bites. Higher tier maths is no harder than Foundation-tier GCSE maths, but it must be fluent.

What comes up

- Substituting into and **rearranging** equations
- Standard form, significant figures, decimal places
- Means, percentages, ratios, magnification
- Unit conversions (mm and m, g and kg, minutes and seconds)
- Gradients and reading values from graphs
- Chemistry: relative formula mass, moles, concentration, yield

Habits that win marks

- **Show every step.** Method marks are awarded even if the final answer is wrong.
- **Write the unit** with the answer.
- Check the answer is sensible (a human with a speed of 300 m/s?).
- Practise with real past-paper questions and mark them with the mark scheme.

The GUESS method

We teach every calculation using **GUESS**, a method recommended by the Royal Society of Chemistry. It works the same way in Biology, Chemistry and Physics.

Why? Most lost marks in calculations come from rushing, not from the maths. Writing the same five steps every time means students don't have to work out where to start, can't skip a step by accident, and earn **method marks** even if the final number is wrong.

G **Given**

Write down the numbers the question tells you, each with its unit. Convert units now if you need to (for example, g to kg).

U **Unknown**

Write what you are trying to find, with the unit you expect. This keeps the question in view.

E **Equation**

Write the equation in symbols or words, and rearrange it now if needed. Doing it before any numbers go in cuts down mistakes.

S **Substitute**

Put the given values into the equation. Show this line, because it is where the method mark lives.

S **Solve**

Work out the answer on the calculator. Include the unit, give the number of significant figures asked for, and ask: is this sensible?

Example: a car travels 150 m in 10 s. What is its speed?

G	distance = 150 m, time = 10 s
U	speed (m/s)
E	speed = distance ÷ time
S	speed = 150 ÷ 10
S	speed = 15 m/s

Try at home: ask your child to talk you through GUESS on a past-paper question. If they can name each step, they can tackle any calculation.

AQA 8464: past papers and mark schemes AQA

Free. Do one paper under timed conditions, then mark it.

AQA equation sheet (Physics) AQA PDF

Given out in the exam with the Physics papers. See “Use the sheets you are given” below for how to use it.

MathsGenie: AQA Combined Science Website

Maths-in-science practice.

AQA Periodic Table (as given in the exam) AQA

Needed for relative formula mass, moles and yield calculations.

Primrose Kitten: calculations YouTube search

Worked examples for physics and chemistry equations.

Free marks: use what you are given

Use the sheets you are given



Physics: equation sheet



Chemistry: Periodic Table

In the exam, students are given two sheets that help them. We regularly see students who ignore them, or only look at them when they’re panicking. Used

well, they save time and stop easy mistakes. The habit needs to start in Year 10, **not** in the exam hall.

1. The Physics equation sheet

- It comes with the **Physics papers**. Students don't need to memorise the physics equations. AQA has confirmed it will be provided for 2027.
- Each equation is written in **words** and in **symbols**. The sheet doesn't tell students *which* equation to use. Picking the right one is the skill.
- Equations marked **HT** are for Higher tier only.
- It is for **Physics only**. There is no equation sheet for Chemistry or Biology calculations, so those equations must be learned.

How it helps: it fits straight into GUESS. At the **E** step, students find the equation on the sheet, write it down, then rearrange it if needed.

Practise with it: every time your child does a physics calculation, they should find the equation on the real sheet first. Then it is familiar on the day, and they know where to look.

AQA Physics equation sheet (PDF) AQA PDF

Print it and keep it with revision notes. Always use the sheet for the current exam year.

AQA: equation sheets in 2027 and 2028 AQA

Official confirmation that the sheet continues.

2. The Periodic Table

The Periodic Table comes with the **Chemistry papers**. It is far more than a chart to look at.

- **Relative atomic mass (the bigger number)** is what students add up to find the relative formula mass (M_r), and what they use in moles and yield calculations. Use the value shown, not a number from memory.
- **Atomic number (the smaller number)** is the number of protons, which also equals the number of electrons in an atom. This is the starting point for working out electronic structure.
- **Group number** tells you the number of outer-shell electrons. That explains why elements react the way they do and which ions they form.
- **Position** shows whether an element is a metal or a non-metal, and which trends to expect (Group 1 gets more reactive going down, Group 7 less reactive going down).

Common mistakes: mixing up the two numbers, using the wrong atomic mass in a calculation, and not using the table at all when the answer is on it.

AQA Periodic Table (as given in the exam) AQA

The exact table students are given. Print it and use it for every chemistry question at home.

Try at home: pick an element at random and ask your child to read the Periodic Table and tell you its protons, electrons, outer electrons, and whether it is a metal. Then try it with a compound and ask for its M_r.

Please read: Foundation and Higher tier

How tiers work



Foundation and Higher



January mock is the last chance



Exam results decide

Combined Science is sat at one of two tiers. Both cover the same topics and the same required practicals, and each paper is 1 hr 15 min and 70 marks. The difference is the level of the questions.

Foundation

Grades 1-1 up to a top grade of 5-5. More accessible questions, with maths at around KS3 level.

Higher

Grades 9-9 down to 4-4. Harder questions and more extended reasoning, with maths at Foundation GCSE level or above.

Foundation papers can't award above a 5-5, so a student aiming for a 6 or higher needs to be on Higher. Neither tier is "better". The right one is the one where a student can show what they know.

How we decide who is on which tier

- Everyone in **11M/Sci** is on Higher.
- In the other classes, **selected students** are on Higher.
- To move up to Higher, a student must score a **5-5 standard on a Foundation paper**.

- A student on Higher whose performance slips **below a 5-5** will be moved to Foundation.

The January mock is the last chance for a student's exam performance to change their tier. After that, tiers are final.

Who makes the decision

Tiers are decided by the science department, using exam performance only. Requests from parents or students can't change a tier, so please don't spend time on emailing or asking for a review. We apply the same rule to every student, which is what makes it fair.

What you can do

- Help your child prepare for the January mock using the sections above.
- Ask their science teacher **what to work on** to improve. We're happy to answer that.
- Remember that both tiers lead to a good qualification. A strong result on the right paper beats a struggle on the wrong one.

Get the calculator early


Buy it now


Little and often


Sleep well


Ask the teacher

Buy a scientific calculator now, not the week before the exams. Students who use the same calculator all year are faster and make fewer slips.

- A standard scientific model is all that's needed (for example the Casio fx-83 or fx-85 range). Graphical or programmable ones are unnecessary.
- Your child should be using it in lessons and homework, and in the exam.
- Learn the key buttons: standard form (**$\times 10^x$** or **EXP**), brackets, fractions, powers and the **Ans** key.
- Phone calculators are not allowed in exams.
- Label it with their name, and keep a spare battery if it isn't solar.

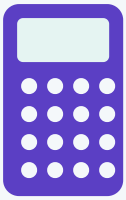
Recommended calculators



Casio fx-83GT CW

The most common choice in UK schools. Solar and battery powered. Look for “fx-83GTCW” or “fx-83GT CW”.

Find on Amazon



Casio fx-85GT CW

Near-identical to the fx-83. Check the listing for the power source. Either model is fine.

Find on Amazon

Please check the listing says “GT CW” and that the seller is reputable. Any equivalent scientific calculator is fine.

Quick tips

- **Do homework regularly and on time.** It is planned revision spread over the year, not just a task to tick off.
- **Start now.** Little and often from Year 10 beats a spring panic.
- Learn the **command words** (describe, explain, evaluate, compare). Marks depend on answering the exact question.
- Do past papers, then mark them in a different colour pen. Fix what they got wrong.
- Write a short list of “things I keep getting wrong” and revisit it weekly.
- Agree a timetable together, with breaks. Short focused blocks beat long, tired ones.
- Sleep, food and exercise count. Tired students lose easy marks.
- Stuck? Tell their science teacher early. Please don’t wait for the mock.

AQA: scheme of assessment AQA

How the papers and marks are structured.

Full AQA specification AQA PDF

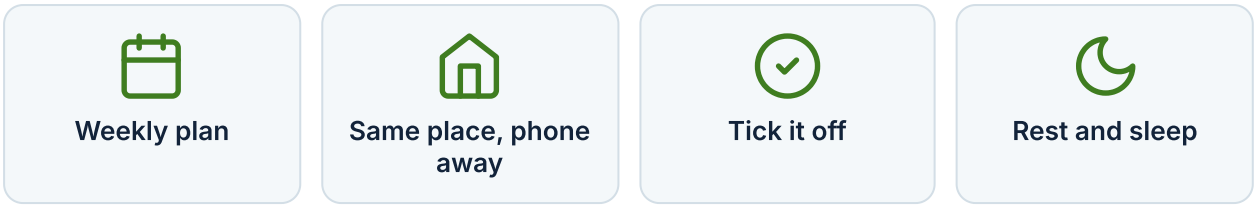
Every topic students could be asked about.

Complete guide to AQA Combined Science Website

Good overview for parents.

Build the routine

Organisation and good habits



Good revision depends on a routine as much as on knowledge. A plan that fits real life gets followed, and a plan that ignores real life doesn't.

Build a personal revision timetable

1. **Fill in the fixed parts first.** School days, travel, clubs, sport, hobbies, family time, religious or cultural commitments and any part-time work.
2. **Add rest and free time.** Meals, time with friends and time to relax go in as well, and they stay protected.
3. **Look at the gaps that are left.** Choose realistic slots of about 20 to 45 minutes. A few sessions that really happen beat a packed timetable that doesn't.
4. **Give each slot a purpose.** Write the topic or task ("Physics: practise 5 calculations"), not just "revise". Mix subjects, and give weaker topics more slots.
5. **Leave a few empty slots** for catching up when life gets in the way.
6. **Review it every week.** What worked? What needs to change? Adjust the plan, and don't give up on it.

Example week

This is only an example. Fixed commitments were added first, then the revision slots, with one evening kept free.

Day	Already in the diary	Revision slot
Monday	School. Football club 5 to 6pm	Biology flashcards, 7 to 7:30pm
Tuesday	School. Music lesson 4:30pm	Physics: 3 calculations using GUESS, 6:30 to 7pm
Wednesday	School. Homework due	Chemistry: write what I remember, then check, 6 to 6:30pm
Thursday	School. Cooking at home	Required practical: write the method from memory, 5 to 5:30pm
Friday	School. Evening with friends	*Rest. No revision.*
Saturday	Sport in the morning. Family lunch	Past paper questions, 2 to 2:45pm
Sunday	Family time	Check mistakes from the week, plan next week, 5 to 5:30pm

Blank timetable

Print this page to use it. Fill in the middle column first, then add revision slots.

Week starting: _____

Day	Already in the diary (school, clubs, hobbies, family)	Revision slot (topic and time)
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

Habits that make it easier

- **Same time, same place.** A routine means less effort to get started.
- **Phone away**, ideally in another room, and notifications off.
- **Get ready first.** Calculator, pens, past paper and the exam sheets on the desk before starting.
- **Start with a goal and finish with a check.** “What am I doing?” at the start, and “What did I learn?” at the end.
- **Take short breaks** between sessions, and move around.
- **Look after the basics.** Regular meals, exercise and sleep are part of the plan.

Try at home: this weekend, sit down together and fill in one week. School and hobbies go in first, then the revision slots. Check in once a week, and praise the effort and the consistency, not only the marks.

Links go to third-party sites that the school doesn't control. Amazon links are plain searches (no affiliate links), and any retailer is fine. Always check that a video or resource matches **Combined Science: Trilogy** and your child's tier (Foundation or Higher).