Revision guides for every core subject

Written by our teaching team and checked against current GCSE and A-Level specifications. Pick a subject below — each guide covers the topics that come up most, the technique that earns marks, and the mistakes that lose them.

GCSE Maths Revision Guide

Foundation & Higher · Edexcel / AQA / OCR aligned

500+ WORDS

GCSE Maths rewards students who can move fluently between number, algebra, geometry and statistics, and who show clear working rather than jumping to an answer. The specification is built from five interlocking strands — number, algebra, ratio and proportion, geometry and measures, and probability and statistics — and every paper mixes them together, so a strong revision plan treats them as one connected subject rather than five separate topics to cram in isolation.

Number and algebra form the backbone of almost every other topic. You need to be completely fluent with fractions, percentages, standard form, indices and surds before algebra will make sense, because algebraic manipulation is really just number work with letters standing in for values. Spend early revision sessions drilling the basics — negative numbers, order of operations, rearranging formulae — until they're automatic, so that in the exam your working memory is free for the actual problem rather than the arithmetic.

Algebra itself is the single highest-value topic on both tiers. Expect to solve linear and quadratic equations, simplify and factorise expressions, work with simultaneous equations, and interpret graphs including gradients and areas under curves. Higher tier students should also be comfortable with algebraic fractions, iteration, and functions (including inverse and composite functions). The examiners consistently reward students who write out each algebraic step rather than working in their head, because method marks are available even when the final answer is wrong.

Geometry and measures covers angle facts, circle theorems, Pythagoras' theorem and trigonometry (SOHCAHTOA and the sine/cosine rules at Higher), area and volume of compound shapes, transformations, and vectors. This strand is the most visual part of the course, so practising with a pencil and paper — actually drawing the diagram, labelling it, and marking on what you know — catches errors that mental maths alone will miss.

Ratio, proportion and rates of change bridges number and algebra: compound interest, direct and inverse proportion, speed-distance-time, and density problems all sit here, and they appear disguised as "real-life" worded questions more than any other topic. The final strand, probability and statistics, is often under-revised because it feels intuitive, but tree diagrams, Venn diagrams, cumulative frequency, and box plots each have specific conventions that examiners check for precisely.

Topics that come up most

- Solving & rearranging equations
- Quadratics: factorising, formula, graphs
- Trigonometry & Pythagoras

- Compound area, volume & surface area
- Ratio, proportion & percentage change
- Probability trees & Venn diagrams
- Sequences (linear, quadratic, nth term)

Exam technique

Read the command word first — "show that", "prove" and "hence" each require a different style of answer. Show every step for method marks, and always check whether the question expects an exact answer (leave it as a fraction or surd) or a rounded one.

Common mistakes

Rounding too early, forgetting units, mixing up perimeter and area, and losing the negative sign when expanding brackets. Rushing multi-step ratio questions without labelling what each number represents.

GCSE English Revision Guide

Language & Literature · Fiction, non-fiction & set texts

500+ WORDS

GCSE English is really two subjects wearing one name: Language, which tests how well you read and write under exam conditions, and Literature, which tests how well you understand and can argue about specific texts. Both are marked on your ability to select precise evidence and explain its effect — vague description of a text never scores as highly as focused analysis of one well-chosen detail.

For Language, Paper 1 focuses on reading and writing to describe or narrate, based on an extract of fiction. The reading questions build in difficulty: identifying information, explaining language choices, analysing structure across the whole extract, and finally evaluating how successfully the writer achieves an effect. The structure question in particular catches students out — examiners want you to track how the focus shifts across the extract (a zoom from wide to close-up, a flashback, a change in pace), not just list language techniques again. Paper 2 shifts to non-fiction and viewpoint, comparing two texts and writing to argue or persuade, where structuring a formal argument with counter-points is the skill most students under-practise.

For Literature, the exam tests whether you can build a whole-text argument, not just recall quotations. Strong answers open with a clear line of interpretation, then use short, precisely chosen quotations to support it, always linking back to how a writer's choices create meaning — and, where relevant, the historical or social context that shaped them. For poetry, comparing two poems means finding a genuine point of connection (a shared theme, a contrasting structure) rather than writing two separate mini-essays side by side.

The single most effective use of revision time for English is timed practice: writing full answers against the clock so that pacing becomes automatic, then reviewing them against the mark scheme to see exactly what separates a grade 5 answer from a grade 7. Memorising twelve to fifteen flexible quotations per set text — short enough to embed in a sentence — is far more useful than memorising long passages you'll never fit into an answer in time.

Topics that come up most

- Language analysis (word choice, imagery, tone)
- Structural analysis of extracts
- Comparing viewpoints across two texts
- Descriptive & narrative writing
- Character & theme essays on set texts
- Context and its effect on meaning
- Poetry comparison

Exam technique

Use the PEEL structure (Point, Evidence, Explain, Link) but spend most of your time on the "Explain" — that's where analysis marks live. Plan for two minutes before any extended answer; it saves far more time than it costs.

Common mistakes

Quoting without analysing, "technique-spotting" (naming a device with no explanation of effect), and running out of time on the final question because Question 1 was over-answered.

GCSE Chemistry Revision Guide

Combined Science & Triple Award

500+ WORDS

GCSE Chemistry sits on three pillars — atomic structure, bonding, and quantitative chemistry — and almost every later topic is a variation on these ideas applied to a new context, so a shaky foundation here costs marks across the whole paper. Start by being completely secure on the structure of the atom, the arrangement of the periodic table by electron configuration, and the three types of bonding (ionic, covalent, metallic), including how each bonding type explains a substance's physical properties such as melting point and conductivity.

Quantitative chemistry is where most marks are lost, not because the ideas are hard but because the arithmetic and units trip students up. Moles, relative formula mass, percentage yield, and concentration calculations all follow set formulae — the key skill is correctly identifying which formula a question needs and substituting the right numbers with the right units, then checking the answer is a sensible size. Triple Award students also need titration calculations and the ideal gas equation.

Chemical changes covers reactivity, extraction of metals, acids and bases, electrolysis, and the pH scale — a topic best learned through practical logic (why does a more reactive metal displace a less reactive one?) rather than pure memorisation. Energy changes introduces exothermic and endothermic reactions, bond energy calculations, and reaction profiles, which examiners frequently combine with a required practical on measuring temperature change.

Rates of reaction and equilibrium test whether you understand collision theory well enough to explain, not just describe, why increasing concentration, temperature, surface area or pressure changes a rate — "explain" answers need a mechanism, not a restatement of the observation. Organic chemistry (hydrocarbons, cracking, polymers) and chemical analysis (chromatography, tests

for gases and ions) round out the course, and Triple students add Earth's atmosphere and resources. Because Chemistry has six required practicals per tier, expect at least one exam question per paper based directly on practical method, sources of error, or how to improve accuracy — these are free marks if you've actually thought through the practicals rather than just watched them.

Topics that come up most

- Moles & quantitative calculations
- Atomic structure & the periodic table
- Bonding & structure (ionic/covalent/metallic)
- Rates of reaction & collision theory
- Electrolysis & extraction of metals
- Required practicals & method evaluation
- Organic chemistry & polymers

Exam technique

For calculation questions, always write the formula first, then substitute, then solve — partial credit is awarded at each stage. For "explain" questions, use collision theory or particle-level reasoning explicitly, not just "it reacts faster".

Common mistakes

Confusing mass number and atomic number, forgetting to balance equations, mixing up rate of reaction with amount of product, and giving vague practical answers like "make it more accurate" without saying how.

GCSE Physics Revision Guide

Combined Science & Triple Award

500+ WORDS

GCSE Physics is the most equation-heavy of the sciences, and the students who do best are the ones who treat the equation sheet as a starting point, not a crutch — you need to know which equation applies to which situation instantly, and be comfortable rearranging it before you even reach for a calculator. Energy is the unifying idea of the whole course: energy stores, transfers, conservation, and efficiency reappear inside electricity, particles, and forces, so understanding energy properly early on makes every later topic easier.

Electricity covers circuits, current, potential difference and resistance, and the difference between series and parallel circuits — a topic best revised by actually sketching circuit diagrams and predicting what an ammeter or voltmeter would read, rather than memorising rules in the abstract. The particle model of matter links density, changes of state, and pressure, while atomic structure covers radioactive decay, half-life, and the difference between alpha, beta and gamma radiation — a favourite source of "explain the hazard" style questions.

Forces is typically the highest-weighted topic and the one where students most often lose marks on units and vectors. You need to distinguish scalar and vector quantities, resolve forces, and be fluent with Newton's three laws, momentum, and the equations linking force, mass, acceleration, and

stopping distance. Triple Award students also cover moments, circular motion in more depth, and Hooke's law extension calculations, all of which reward careful, labelled working.

Waves covers the electromagnetic spectrum, wave speed calculations, and reflection/refraction, while magnetism and electromagnetism (Triple) covers motors, generators, and transformers. Space physics closes out the Triple specification with the life cycle of stars and orbital motion. Across every topic, required practicals reappear as exam questions, so revising the method, variables, and typical sources of error for each one is high-value time. Physics questions are also unusually strict on significant figures and units — an otherwise perfect calculation can lose its final mark for an answer given without the correct unit.

Topics that come up most

- Energy stores, transfers & efficiency
- Electrical circuits (series & parallel)
- Forces, motion & Newton's laws
- Radioactivity & half-life
- Waves & the electromagnetic spectrum
- Required practicals
- Momentum & stopping distances

Exam technique

Write the equation, substitute numbers with units, then solve — never skip straight to a decimal answer. Double-check whether the question wants magnitude only or a full vector (direction included).

Common mistakes

Mixing up mass and weight, dropping units, using the wrong equation for a similar-looking scenario, and misreading circuit diagrams under time pressure.

GCSE Biology Revision Guide

Combined Science & Triple Award

500+ WORDS

GCSE Biology builds outward from the cell: once you're confident with cell structure, specialisation, and transport (diffusion, osmosis, active transport), the rest of the course is largely that same logic applied at bigger and bigger scales — tissues, organs, organ systems, and eventually whole ecosystems. Spending real time on cell biology early pays off across the entire specification rather than just one topic.

Organisation covers the digestive and circulatory systems, enzymes, and — for Triple students — plant tissues and transport, all of which are exam favourites because they combine recall with application: you're often given an unfamiliar scenario and asked to apply what you know about enzyme action or heart structure to explain it. Infection and response covers pathogens, the immune system, vaccination, and drug development, a topic that rewards precise use of key terms (pathogen vs. disease, antigen vs. antibody) since examiners specifically check for correct terminology.

Bioenergetics (photosynthesis and respiration) and homeostasis (the nervous system, hormones, and control of blood glucose) are two of the most heavily tested topics, and both benefit from practising labelled diagrams — drawing the reflex arc or the structure of a nephron from memory reveals gaps that reading alone won't. Homeostasis questions also frequently ask you to interpret graphs of hormone levels over time, so practising graph-reading specifically for this topic is worthwhile.

Inheritance, variation and evolution covers DNA structure, genetic crosses (Punnett squares), natural selection, and classification — a topic where students often understand the theory but lose marks by miscompleting a genetic diagram or muddling genotype and phenotype. Ecology closes the course by scaling everything up to populations, food webs, and the impact of environmental change, often through data-response questions based on real fieldwork techniques like quadrats and transects. As with the other sciences, required practicals are directly examinable, so know the method, the controlled variables, and likely sources of error for each one rather than only the result.

Topics that come up most

- Cell structure & transport
- Enzymes & the digestive system
- Photosynthesis & respiration
- Homeostasis (nerves & hormones)
- Genetics & Punnett squares
- Natural selection & evolution
- Ecosystems, food webs & fieldwork

Exam technique

Use exact biological terms, not everyday synonyms — "diffusion" and "osmosis" are not interchangeable with "moving" or "absorbing". Practise drawing and labelling key diagrams from memory, not just recognising them.

Common mistakes

Confusing genotype and phenotype, mixing up mitosis and meiosis, describing a graph instead of explaining the biology behind it, and vague answers like "it helps the plant grow" instead of a mechanism.

A-Level Psychology Revision Guide

AQA-style specification · Paper 1–3

500+ WORDS

A-Level Psychology asks for a different skill from GCSE science: rather than recalling facts, you're building evaluative arguments about studies, using named evidence to support or challenge a theory, and weighing methodological strengths against weaknesses. Every essay-style question is really asking "how convincing is this explanation, and why?" — so revision should focus on being able to argue both sides of a debate, not just describe one theory in isolation.

Social influence and memory form the core of Paper 1. Social influence covers conformity (Asch, Zimbardo), obedience (Milgram and later variations), and social change, and questions frequently ask

you to apply these classic studies to real-world scenarios — so practising application, not just recall of procedure and findings, is essential. Memory covers the multi-store model, working memory model, and explanations of forgetting, with eyewitness testimony a recurring extended-response favourite because it lets you combine memory theory with real-world implications, such as how leading questions affect testimony.

Attachment examines Bowlby's theory, the Strange Situation, and the effects of early attachment on later relationships — a topic where evaluation marks often come from discussing cultural variations and the ethical or practical limitations of the original research. Psychopathology (Paper 1) covers definitions of abnormality and explanations and treatments for phobias, depression, and OCD, and rewards students who can compare the biological, behavioural, and cognitive approaches to the same disorder side by side rather than in separate silos.

Paper 2 introduces approaches in psychology (behaviourist, cognitive, biological, psychodynamic and humanistic), biopsychology (the nervous system, the brain, and biological rhythms), and research methods — the paper most students under-revise despite it being highly technique-based rather than content-heavy. Research methods questions test whether you can identify a study's design, evaluate its validity and reliability, and interpret statistical output, and these skills are trainable through repeated past-paper practice far more than through re-reading notes. Paper 3 covers issues and debates (such as nature vs. nurture, reductionism, and ethical implications) alongside optional topics your teacher selects, and strong answers here draw connecting threads across topics studied earlier in the course.

Topics that come up most

- Conformity & obedience (Asch, Milgram)
- Memory models & eyewitness testimony
- Attachment theory & the Strange Situation
- Approaches: biological vs. cognitive vs. behaviourist
- Research methods & statistical tests
- Explanations for psychopathology
- Issues & debates (nature/nurture, ethics)

Exam technique

For extended-response questions, structure your evaluation as AO1 (describe), AO2 (apply), AO3 (evaluate) explicitly. Name specific studies and researchers, and always finish an evaluation point with "this means that…" to show its implication.

Common mistakes

Describing a study without evaluating it, listing generic strengths/weaknesses ("small sample size") without linking them to the specific study, and confusing similar-sounding theories from different approaches.

A-Level Economics Revision Guide

Micro & Macroeconomics · Paper 1–3

500+ WORDS

A-Level Economics is built around two connected worlds — microeconomics, which studies individual markets and decisions, and macroeconomics, which studies the economy as a whole — and the highest-scoring students are the ones who can move fluently between diagrams, real-world data, and evaluative argument within a single answer, rather than treating each as a separate skill.

Microeconomics opens with the price mechanism: supply and demand, elasticity (price, income, and cross elasticity), and how markets allocate resources. From there it moves into market failure — externalities, public goods, information gaps, and the case for government intervention through taxes, subsidies, regulation, or tradeable permits. A recurring exam pattern is to present a market failure scenario and ask you to evaluate a specific policy response, which means you need to know not just what a policy does, but its likely side effects and limitations too. Business economics adds costs, revenues, market structures (perfect competition through to monopoly), and the labour market, where marginal analysis is the recurring mathematical skill examiners test.

Macroeconomics covers the circular flow of income, economic growth, inflation, unemployment, and the balance of payments — the four macroeconomic objectives that almost every macro question relates back to in some way. You'll need to interpret real data (GDP figures, inflation rates, unemployment statistics) and explain the causes and consequences of changes in each, including the trade-offs between objectives — for example, why policies that reduce inflation can sometimes increase unemployment in the short run.

Fiscal and monetary policy — how government spending, taxation, interest rates, and the money supply are used to influence the economy — is one of the most heavily weighted topics and the one most often tested through extended, evaluative essays. Strong answers explain the transmission mechanism (how a policy change actually flows through to affect output, prices or employment) rather than just naming the policy. Papers also test international economics (trade, exchange rates, and the impact of globalisation) and, at the top grade boundaries, the ability to synthesise micro and macro ideas — for instance, discussing how a market failure in one industry might affect broader economic growth. Throughout the course, examiners reward economic terminology used precisely, diagrams drawn and correctly labelled from memory, and evaluation that reaches a clear, justified judgement rather than sitting on the fence.

Topics that come up most

- Supply, demand & elasticity
- Market failure & government intervention
- Market structures & business objectives
- Economic growth, inflation & unemployment
- Fiscal & monetary policy
- Exchange rates & international trade
- Data-response & essay evaluation

Exam technique

Always draw and label diagrams fully (axes, curves, shifts, equilibrium points) and refer back to them in your written explanation. For essays, end with a justified judgement — "this policy is more effective because…" — rather than listing pros and cons with no conclusion.

Common mistakes

Describing a diagram without explaining the shift's cause, confusing movements along a curve with shifts of the curve, and writing generic evaluation ("it depends") without applying it to the specific context in the question.