



Mathematics & Numeracy

Be clear on what you need to study

The GCSE course covers 4 main areas:

1. Number
2. Algebra
3. Shape & Space
4. Data Handling

At grades A*/A pupils have to be proficient in all areas.



Keep your revision interesting

- **Timed-practice Questions.** Allow 1 minute per mark. Repeat until you can answer the question perfectly.
- **Flashcards.** Question on the front, answer on the back. How many can you solve in 10 minutes?
- **Be the teacher.** Have someone choose a question for you and explain to them each step of what you are doing while you solve it live.
- **Mind mapping.** Create a visual map of each of the 4 main areas in maths.

Plan what you are going to revise and when

- ✓ Use the **Top of the Pops**. Make high frequency skills the main focus of each revision session.
- ✓ **Take baby steps.** Support new topics by building on the ones you already understand.
- ✓ **Allow mistakes.** Focus on concepts rather than the right answer, since making and correcting mistakes is part of the maths learning process.
- ✓ **Learn the basics.** This is essential since many higher order concepts build on memorisation and recall of basic facts.
- ✓ **Be positive.** You will get better with practice!
- ✓ **Keep it regular.** You should aim to complete 20-30 minutes of maths revision most days.

Useful websites:

[Sparx - West Monmouth Comprehensive School \(sparxmaths.uk\)](http://www.sparxmaths.uk)

[GCSEPod](http://www.gcsepod.com)

[GCSE Maths - WJEC - BBC Bitesize](http://www.bbc.com/bitesize/gcse-maths)

<https://questionbank.wjec.co.uk/>

Mathematics Higher Tier Top of the Pops

Number

- Rounding to significant figures
- Product of Primes (including LCM & HCF)
- Index Laws
- Manipulating Surds
- Standard Form
- Compound Interest (incl. percentage multipliers)
- Direct & Inverse Proportion
- Converting Recurring Decimals to Fractions
- Reverse Percentages
- Upper & Lower Bounds

Algebra

- Finding the nth term of a sequence
- The Straight Line $y = mx + c$
- Transformations of Graphs
- The Tangent to a Graph as the Acceleration
- The Trapezium Rule
- Changing the Subject of a Formula
- Factorise & Solve Quadratics
- The Quadratic Formula
- Algebraic Fractions
- Inequalities (incl. graphs of inequalities)
- Trial & Improvement

Shape & Space

- Angle Facts (incl. interior & exterior angles)
- Constructions
- Congruence
- Transformations
- Pythagoras' Theorem
- SOHCAHTOA
- Sine, Cosine & Area of a Triangle Formulae
- Trigonometric Graphs
- Circle Theorems
- Similar Lengths, Areas & Volumes
- Arcs & Sectors
- Volume of 3D Shapes

Statistics

- Sampling methods
- Relative Frequency
- Tree Diagrams - AND/OR Rule
- Non-Replacement Probability
- Histograms
- Cumulative Frequency
- Box & Whisker Diagrams
- Estimating the Mean
- Scatter Diagrams