

Year 10 & 11 GCSE FOUNDATION Mathematics – Outline Programme of Study

	Year 10 Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Big ideas/ topics	Algebra – expressions & brackets Statistical data	Fractions & Percentages Algebra – equations, inequalities & sequences	Angles Averages & range	Geometry of prisms Straight line and real-life graphs	Transformations Ratio & Proportion	Pythagoras & trigonometry Probability
Key Knowledge	Simplify and manipulate algebraic expressions. Expanding products of two or more binomials. Factorising quadratic expressions. Construct and interpret data in the forms of tables, graphs & charts.	Calculate and problem solve using fractions and percentages. Find percentage changes and original amounts. Solve algebraic equations and inequalities. Work with position to term and term to term sequences.	Apply the properties of angle for lines and parallel lines. Derive and apply angle properties of triangles and special quadrilaterals. Interpret, analyses and compare the distributions of data sets.	Know and apply formula to calculate area and volume for a variety of shapes. Plot and identify linear graphs and real-life graphs from kinematic problems, such as speed, distance and acceleration.	Understand transformation of shapes, including rotation, reflection, translation and enlargement. Use ratio notation, including reduction into simplest form. Apply ratio to real contexts and problems.	Know the formulae for Pythagorean theorem and trigonometric ratios. Apply them to find lengths and angles in right angles triangles, including triangles in 3D shapes. Record, describe and analyse probability.
	Year 11 Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Big ideas/ topics	Multiplicative reasoning Constructions, loci & bearings	Quadratic equations Circles	Fractions, indices & standard form Congruence, similarity & vectors	Algebras – simultaneous equations, rearranging formulae & proof	Past paper Practice Revision	Examinations
Key Knowledge	Express a multiplicative relationship as a fraction or ratio. Use compound measures. Construct using ruler, protractor and compasses. Use these to construct given figures and loci.	Expand and factorise with quadratics. Identify and apply circle definitions and properties. Understand circle formulae, including arc lengths, angles and areas of sectors.	Calculate with integer and fractional indices. Calculate with and interpret standard form. Use congruence criteria for triangles. Identify, describe and construct congruent and similar shapes.	Solve two simultaneous equations in two variables algebraically; finding approximate solutions graphically. Rearrange formulae to change the subject. Argue mathematically using algebra to support.	Recall for all GCSE Foundation topics, using past paper questions and revision techniques.	Revision and past paper practice continues. Students are given 'predicted' paper 2 & 3 papers, once papers are sat in order to target revision practice.

Further information and reading list

- Our GCSE examination board is Edexcel.
- Revision guides are available from lead education publishers such as CPG, Pearson, Letts & Collins. Please check it for Edexcel examination board and for the correct tier – Foundation.
- Pre-printed flash cards are available from CGP, which have methods, questions and answers or order from Corbettmaths.com
- There is lots of support available for GCSE foundation students. YouTube videos, such as GCSE maths tutor, Khan Academy or examination past paper walk throughs.
- Sparx Maths provides help videos for homework and the independent learning button provides access to the whole course with videos and questions to practice.
- Useful websites: www.mathsgenie.co.uk (breaks revision topics into target grades), www.corbettmaths.com, (all topics with help videos and practice questions), <https://www.bbc.co.uk/bitesize/examspecs/z9p3mnb> (bbc bitesized for Edexcel).

Ways to support and extend student learning in this subject

- Support guidance
- Ensuring the fundamentals of maths are secure, for example practicing times tables, including dividing, can help students feel more confident in maths lessons.
- Have fun with maths, playing mental maths games, such as cards or darts can help with manipulation of numbers.
- The best way to learn maths is through practice questions and repeating these regularly. Use the websites listed above to provide additional practice questions.
- Take a look at the higher GCSE programme of study and using resources, such as Sparx Maths and speaking with the maths teacher, work on some topics that are beyond the foundation syllabus, as it is possible to move students to the higher tier if their independent study shows their capability.