



KS3 Maths

INDEPENDENCE

KNOWLEDGE / LITERACY / NUMERACY / ORACY / AGENCY

CONTENT / TOPICS / CONCEPTS

Year 7

Place value; Properties of numbers; Arithmetic; Expressions and equations; Coordinates; Perimeter and area; Fractions; Ratio and proportion; Transformations

Year 8

Estimating and rounding; Solving linear equations; Sequences; Linear graphs; Percentages and proportionality; Statistics; Perimeter, area and volume; Polygons and angles; Constructions

Year 9: Support/Core/Higher

Support: Integers and place value; Decimals; Indices, powers and roots; Factors, multiples and primes; Fractions; Percentages; Fractions, decimals, and percentages; Drawing and interpreting tables and charts; Mensuration and Properties of 2D shapes; Perimeter and area, simple angle facts, and 3D forms; Algebra: the basics; Expressions and substitution into formula; Probability scale; Theoretical probability (**then up to and including Reverse percentages of Core**)

Core: Two-way Tables; Frequency Trees, Venn diagrams; Product of prime factors/HCF/LCM; Multiples in context; Best value; Exchange rates; Rounding & error intervals; Estimation; Percentage of an amount; Interest, growth and decay; Reverse percentages; Fractions; Ratio; Standard form; Index Laws, Expand and simplify; Factorising; Solving equations; Subject of; Averages; Averages from a table; Inequalities; Frequency diagrams; Scatter graphs; Linear graphs, Quadratic & cubic graphs

Higher (all of Core and then): Coordinate geometry; Speed, distance, time & compound measures; Real-life graphs; Pythagoras & trigonometry; Bearings; Alternate & corresponding angles; Interior and exterior angles; Sampling; Pie charts; Probability

VOCABULARY

integer, factor, multiple, square number, power, product, absolute value, commutative, associative, distributive, expression, equation, inequality, expand, coordinate, angle, parallel, polygon, quadrilateral, construct, perimeter, area, recurring decimal, equivalent, multiplier, exchange rate, translation, rotation, reflection, enlargement

rounding, estimation, significant figure, linear, identity, inverse, isolate, sequence, scale, rate, constant of proportionality, direct, inverse, ratio, mean, median, mode, range, outlier, circumference, diameter, radius, composite, cross-section, volume, surface area, transversal, interior, exterior, locus

simplify
factorise
frequency
probability
discrete
continuous
union
intersection
currency
conversion

multiplier
VAT
interest
depreciation
annum
power
index
mixed number
improper (fraction)
formula

substitution
rearrange
solve
unitary
compound
coefficient
truncation
interval
gradient
reciprocal

SKILLS

Deep Understanding: students are encouraged to develop a deep understanding of the concepts they meet rather than learn from rules. Mathematical Thinking: it is essential for students to develop mathematical thinking in and out of the classroom, to fully master mathematical concepts. Mathematical Language: pupils are encouraged to use mathematical language throughout their maths learning to deepen their understanding of concepts.

The skills for Y9 are the acquisition of mathematical knowledge in order to apply this understanding to the topics covered in Y9.

For the Support stream, key topics will be covered in order for pupils to have the necessary prerequisite knowledge to access the GCSE curriculum. In Term 4, pupils following this stream will move on to the *Crossover* topics; these are skills that need to be acquired in order to be successful in both the *Foundation* and the *Higher* tier at GCSE.

For the Core and Higher streams, students will focus on the *Crossover* topics. The Core stream will focus on these skills for 2 years, whereas the Higher stream will acquire this knowledge in just over a year.

ASSESSMENT

Regular I ACT quizzes followed by feedback.

Summative assessments in Terms 3 and 6 will test on *all* knowledge acquired up to that point. Assessments in Year 8 will include topics taught in Year 7.

Regular I ACT quizzes followed by feedback.

Summative assessments in Terms 3 and 6 will test *all* knowledge acquired up to that point; therefore, there will be three different assessments for each assessment point to reflect the three streams in Year 9. Each assessment will have a calculator and a non-calculator element.

ATTITUDE

Understanding others, behaviour and attitudes, SMSC, PHSE

In KS3, mathematical language is a focus and paired and group work is regularly used to develop pupils' social skills; teaching them to listen, share and develop ideas in conjunction with others.

RESILIENCE

Character, personal Development, wellbeing and CIAG

In KS3, building resilience in the face of challenging problems is developed, which continues into KS4. Students develop a growth mindset through the use of differentiated activities which support and challenge accordingly allowing pupils to have a sense of achievement in every lesson regardless of their prior achievement. Students have opportunities in KS3 such as Axiom Maths Club and UKMT Maths Challenge.