

# SUBJECT: Mathematics



## KS3 CURRICULUM PLAN 2020-21

KS1 and 2  
Knowledge  
and Key  
skills

YEAR 7	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
TOPIC	<i>Transition</i>	<i>Number</i>	<i>Algebra</i>	<i>Geometry</i>	<i>Fractions, Percentages &amp; Decimals</i>	<i>Geometry</i>
<b>Knowledge</b>	Fibonacci Sequence & Golden Spiral Art Project. Using a calculator effectively. Probability. Introduction to Mathswatch.	Four operations, BIDMAS, powers & roots, rounding, negatives.	Simplify expressions, multiply out brackets, solve equations & inequalities.	Time, unit conversion, perimeter & area, circle parts & investigation into area & circumference of circles.	FRACTIONS: Simplify, equivalent, mixed numbers, fraction of an amount. PERCENTAGES: Find a percentage of an amount, increase & decrease by a percentage.	Properties of polygons, angles and transformations.
<b>Skills</b>	Understanding how Maths can link into other subjects and learning. How to use Mathswatch for remote and independent learning.	Application of numerical processes into real-life situations. Using bar modelling for pictorial representations of mathematical problems.	Introduction to algebraic vocabulary, concepts and manipulation and how they link together.	Convert between various units of measure. Learn conversions. Develop understanding of where area formulae for various shapes come from. Link with algebra concepts learnt in previous half term.	Apply knowledge of fractions & percentages into real life situations requiring comparison, conversion and manipulation in order to solve a problem in context.	Develop understanding of the properties of different shapes. Map shapes by different transformations understanding how each manipulates the shape differently and what properties remain unchanged.
Key Vocab	Outcome, sample space, bias, certain, impossible, likely, evens	Sum, difference, product, inverse, brackets, index, indices	Expression, bracket, expand, equation, solve, inequality	Radius, diameter, circumference, tangent, chord, arc, sector, segment	Simplify, mixed number, equivalent, numerator, denominator	Symmetry, polygon, quadrilateral, acute, obtuse, reflex

YEAR 8	SUMMER 2	SUMMER 1	SPRING 2	SPRING 1	AUTUMN 2	AUTUMN 1
TOPIC	<i>Revision &amp; Study Skills</i>	<i>Statistics</i>	<i>Ratio &amp; Proportion</i>	<i>Geometry</i>	<i>Number</i>	<i>Algebra</i>
<b>Knowledge</b>	Work on prior topics identified as areas of weakness or review in order to develop independent learning and study skills.	Averages & range, various diagrams including; frequency trees, scatter diagrams & pie charts.	Introduction to various aspects of ratio and proportion such as simplifying, sharing and best value for money.	Properties of 3D-shapes, surface area & volume, constructions.	Factors, Multiples, Primes, Rounding to significant figures & estimating, decimals, standard form.	Substitution, sequences, coordinates, graphs.
<b>Skills</b>	Students learn and practice how to revise in a variety of ways and how to produce revision material in order for them to utilise and hone these skills in future years including at GCSE.	Manipulate data to reach conclusions, make interpretations and representations of the data collected or given.	Understand the connection between ratio and proportion, Apply knowledge into various real-life scenarios.	Develop understanding of the properties of different 3D-shapes including where volume formulae for various shapes come from.	Develop further key number manipulation skills including handling particularly large or small numbers efficiently.	Introduction to further basic algebraic concepts and how they link together.
Key Vocab	Differs between classes as learning reflective of class need.	Mean, mode, median, range, frequency, correlation	Combine, share, proportion	Vertex, face, edge, plan, elevation, net, volume, surface area	Factor, multiple, prime, decomposition, significant, ascending, convert	Origin, term, linear, Fibonacci, constant difference

YEAR 9	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
TOPIC	<i>Algebra</i>	<i>Geometry &amp; Percentages</i>	<i>Probability &amp; Number</i>	<i>Fractions, Percentages &amp; Decimals</i>	<i>Geometry</i>	<i>Statistics</i>
<b>Knowledge</b>	Review & develop knowledge of expressions, expanding brackets, equations & inequalities. Introduce factorising.	Review & develop knowledge of area including an investigation into generating the formulae for the area & circumference of circles. Review & develop knowledge of percentages.	Review various aspects of probability and introduce probability tree diagrams. Review key numeracy skills and introduce the topic of bounds.	Review & develop knowledge of fractions & decimals including conversion and comparisons of values given in fraction, percentage or decimal format.	Review & develop knowledge of angles. Introduce the topic of constructions and loci. Complete an investigation in order to discover Pythagoras' theorem.	Review & develop knowledge of mean, mode, median and range as well as various diagrams to represent the data.
<b>Skills</b>	Applying algebraic manipulation knowledge into increasingly complex problems.	Develop understanding of where area & circumference formulae come from.	Using theoretical knowledge of probability in a visual format to enable combined probabilities to be calculated.	Ability to solve a variety of fraction & percentage problems in numerous real-life contexts including in the application of financial mathematics.	Utilise equipment such as protractors and compasses to make accurate constructions of triangles and scale drawings of real life scenarios.	Manipulate data collected or given in order to calculate statistics efficiently and represent results in a diagrammatical format.
Key Vocab	Index, forming, quadratic, simultaneous, factorise, prove	Venn, arc, sector, alternate, corresponding, interior, exterior	Simple interest, compound interest, geometric, common ratio	Cubic, reciprocal, exponential, turning point	Hypotenuse, adjacent, sine, cosine, tangent, scale factor	Sample, population, bias, cumulative, quartile, inter-quartile range