Striving For Excellence Together
Year 7 Mathematics Curriculum Map

The mathematics assessment will occur after the completion of every topic. The assessment is no longer than 30 minutes and it is an open book assessment. These assessments are in place to ensure essential learning has taken place.

There are three termly assessment points at Christmas, Easter and the end of the year to assess progress throughout the year. These assessments are in place to inform teaching throughout the year.

7	Topics	Models and Manipulatives	Key Concepts	Key Vocabulary	Our Pillars	Knowledge tracking
Topic 1	Algebraic thinking **Exploring sequences.**		Pattern exploring and sequences	Term Sequence Rule Position Term-to-term Linear Non-Linear Constant difference Arithmetic Geometric Fibonacci	Careers – Maths Why Bother?	**Extension of previous work** Generating and describing sequences. Substitution into expressions Order of operations **Future Learning** Year 8 Autumn term – Linking graphs to sequences. Year 8 Spring term – Algebraic sequences Year 10 Summer term – Types of number and sequences
Topic 2	Algebraic thinking **Understand and use algebraic notation**		Fluency with function machines. Moving freely between numerical, algebraic, graphical and diagrammatic representations. Recognise and use inverse operations	Function Input Output Operation Square Inverse Bar model Coefficient Variable Expression Substitute	Careers – Maths why bother?	**Extension of previous work** **Future Learning** Year 11 Autumn term – Functions Year 7 Autumn term – Equality and equivalence
Topic 3	Algebraic thinking **Equality and Equivalence**		Simplifying algebraic expressions. Solving linear equations. Approximating answers by rounding.	Equality Equation Equals Bar Model Solve Solution Inverse Term Like Unlike Coefficient Index Expression	Careers – Maths why bother?	**Extension of previous work** **Future Learning** Year 8 Spring term – Brackets, equations and inequalities
Topic 4	Place value and Proportion **Place value and ordering integers and decimals**		Use place value for decimals and integers of any size. Ordering real numbers and using the symbols =, ≠, , ≤, ≥.	Integer Place value Interval Ascending Descending Range Median Significant figure Index Power Standard form	Careers - Maths, Why bother?	**Extension of previous work** Year 7 – Exploring sequences **Future Learning** Year 7 Spring term – Addition & subtraction problems (standard form) Year 8 Spring term – Standard Index form Year 8 Spring term – Number sense

Striving For Excellence Together
Year 7 Mathematics Curriculum Map

Topic 5	Place value and Proportion **Fraction, decimal & percentage equivalence**		Building upon previous decimal work. Move freely between equivalent fractions and decimals. Writing quantities as fractions of another.	Place value Tenths Hundredths Equivalent Percent Percentage Convert	Pie charts Denominator Numerator Division Quotients Mixed number	Careers - Maths, Why bother?	**Extension of previous work** Primary F.D.P skills Year 7 Autumn term – Place value and ordering integers and decimals
Topic 6	Applications of Number **Solving problems with addition and subtraction**		Using formal written methods. Use addition and subtraction within context e.g Perimeter / Graphs and charts. Solve financial Maths problems. Build upon previous standard form work to involve addition and subtraction.	Sum Difference Commutative Number line Inverse Partition Column Method Place holder	Estimating Polygon Profit Loss Statement Credit Frequency Significant figure	Careers – Maths, Why Bother? Financial Mathematics – Life after SWR.	**Extension of previous work** **Future Learning**
Topic 7	Applications of Number **Solving problems with multiplication and division**		Build upon place value work with multiplying and dividing by powers of 10. Use formal written methods for multiplication and division. Use multiplication and division within context e.g Area, mean calculations. Explore the link to algebraic expressions.	Product Inverse Factor Venn Diagram LCM Milli- Centi- Kilo- Multiple	Efficient Divisor Dividend Quotient Operation Perpendicular height Parallel Average Expression	Careers – Maths, Why Bother?	**Extension of previous work** **Future Learning**
Topic 8	**Fractions and percentages of amounts**		A short one-week topic filled with fractions and percentage of amounts followed by delving deeper into the connections between the two. Using skills developed in the previous three topics to prepare for a more in-depth study of this in the year 8 topic.	Numerator Denominator Original Percent Percentage Equivalent		Careers – Maths, Why Bother?	**Extension of previous work** **Future Learning**
Topic 9	Directed Number **Operations and equations with directed number**		Building confidence with using negative numbers. This includes their use within all operations and algebraic settings. Solving two step equations. Investigate higher powers and roots of positive numbers.	Negative Ascending Descending Zero Pair Commutative Inverse Fraction button	Substitute Solve Solution Indices Exponent Power Root	Careers – Maths, Why Bother?	**Extension of previous work** **Future Learning**
Topic 10	Fractional thinking **Addition and subtraction of Fractions**		Building on work from primary school to culminate in addition and subtraction of Mixed numbers. This will be used in algebraic contexts as well.	Equal parts Mixed number Top-heavy fraction Unit fraction Multiple Common denominator	Linear sequence Geometric sequence Expression	Careers – Maths, Why Bother?	**Extension of previous work** **Future Learning**

Striving For Excellence Together
Year 7 Mathematics Curriculum Map

Topic 11	Lines and angles **Constructing, measuring and using geometric notation**		Students will build on their KS2 skills using rulers, protractors and other equipment. Use correct notation for lines and angles with emphasis on increasingly complex diagrams. Pie charts will be studied for further angle practice.	Notation Polygon Segment Degrees Quarter turns Interior Exterior	Construct Parallel Perpendicular Types of triangles Types of quadrilaterals Regular polygon Vertex Sector	Careers – Maths, Why Bother?	**Extension of previous work** **Future Learning**
Topic 12	Lines and angles **Developing geometric reasoning**		Basic geometric language with names and properties of triangles and quadrilaterals, and the names of other polygons. Angles rules will also be introduced to form short chains of reasoning.	Vertically opposite Sum Interior Regular Parallel Perpendicular Transversal	Corresponding Alternate Co-Interior Proof	Careers – Maths, Why Bother?	**Extension of previous work** **Future Learning**
Topic 13	Reasoning with number **Developing number sense**		Use mental strategies for the four operations including using decimals and fractions. Using known facts to find other facts. Strategies to simplify complex calculations will also be explored.	Number line Factors Rounding Significant figure Over/underestimate Addend Equality	Equation Expression Efficient	Careers – Maths, Why Bother?	**Extension of previous work** Generating and describing sequences. Substitution into expressions Order of operations **Future Learning**
Topic 14	Reasoning with number **Sets and Probability**		Students pick up from their fraction, decimal and percentage equivalence topic to extend this into the topic of probability. Students will learn about sets, set notation and systematic listing strategies.	Universal Set Element Set Intersect Union Member	Certain Impossible Bias Event Sample Space	Careers – Maths, Why Bother?	**Extension of previous work** FDP Equivalence Forming and solving equations Adding and subtracting fractions **Future Learning**
Topic 15	Reasoning with Number **Prime numbers and Proof**		Factors and multiples will be revisited to introduce the concept of prime numbers. Odd, even, prime, square and triangle numbers will be used to form the basis of testing conjectures. Using counter examples will also be addressed.	Multiples Term Factor Factorise Prime number Triangular number Square number	HCF LCM	Careers – Maths, Why Bother?	**Extension of previous work** Generating and describing sequences Factors and multiples **Future Learning** Year 9 Spring term - Numbers