Year 7 Maths Curriculum Overview

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Unit of Work	Properties of number Measures Place value and standard form	Calculations involving 4 operations Directed number Fractions, decimals and percentages (FDP) Revision and assessment	Calculations using fractions Percentages	Averages Charts and graphs Revision and assessment	Algebraic notation (including perimeter) Area Solving equations Assessment	Transformations Properties of shape
Ethos Links	• STEM: number structure, powers and standard form in scientific contexts. • Milton Keynes: timetables, journey planning, measures and unit conversion in local contexts. • Financial literacy: place value and multiplicative reasoning in money contexts.	• STEM: accurate and efficient calculation across real-life quantitative contexts. • Financial literacy: directed numbers and FDP in money, temperature, gains and losses. • Learning habits: resilience, noticing links between representations and learning from mistakes.	• Financial literacy: percentages in discounts, increases and decreases. • STEM: fractions as exact quantities and as operators. • Learning habits: making links between multiplicative representations and problem-solving strategies.	• Milton Keynes and sustainability: collect, represent and compare data in local or environmental contexts. • STEM: interpret data critically, including sampling, correlation and variation. • Learning habits: collecting and using data, questioning, analysis and evaluation.	• STEM: algebra as a language for generalising relationships and modelling quantities. • Milton Keynes: area, scale and perimeter through plans and built-environment contexts. • Learning habits: noticing structure, making links, explaining and reasoning.	• STEM and design: symmetry, transformation and geometric properties in patterns, engineering and design. • Learning habits: imagining and creating, noticing invariance, making links and applying knowledge.
Knowledge	**Properties of number** • Understand multiples and factors. • Use divisibility tests. • Recognise square numbers to 12^2 and cube numbers to 5^3; understand square and cube roots. • Use BIDMAS accurately. • Identify prime numbers and write integers as products of prime factors. • Find HCF and LCM, including using Venn diagrams.	**Calculations involving 4 operations** • Add and subtract whole numbers and decimals using formal column methods. • Multiply and divide whole numbers and decimals. • Interpret remainders as fractions and decimals. • Understand fractions as division. • Use place-value structure to solve related calculations efficiently. **Directed number** • Understand negative numbers and locate them on a number line.	**Calculations using fractions** • Recognise fractions as parts of a whole, on bar models and number lines. • Find fractions of amounts and identify equivalent fractions. • Simplify fractions and convert between improper fractions and mixed numbers. • Order fractions using common denominators or numerators. • Add and subtract fractions with different denominators and mixed numbers.	**Averages** • Identify the mode and calculate the range. • Calculate medians for odd and even data sets. • Calculate the mean and understand the relationship between total and mean. • Compare data sets using averages and range. • Create and interpret frequency tables. • Find mode, median and mean from discrete frequency tables. **Charts and graphs** • Design a survey and complete tally charts.	**Algebraic notation (including perimeter)** • Understand geometric and place-value representations of algebraic bases, including base x. • Use algebraic notation such as 3y, a^2, ab and a/b correctly. • Substitute positive and negative values into expressions. • Collect and simplify like terms. • Expand a single bracket; for greater depth, expand with negatives and factorise into a single bracket.	**Transformations** • Recognise and identify lines of symmetry. • Reflect shapes in horizontal, vertical and diagonal mirror lines. • Identify rotational symmetry. • Enlarge shapes using a positive scale factor, including from a given centre of enlargement. **Properties of shape** • Name common 2D shapes and 3D objects. • Identify properties of quadrilaterals using angles, sides and diagonals.

	• Use a calculator for powers and square roots. • Solve problems involving HCF, LCM and order of operations. **Measures** • Understand how to use a ratio table. • Read analogue and digital times and convert between 12-hour and 24-hour time. • Interpret scales and use bus/train timetables. • Convert between metric units of length, mass and volume. • Convert between metric and imperial units. • Convert between related units of length and area. **Place value and standard form** • Recognise place value in natural numbers and decimals using representations such as place-value charts, Dienes blocks, counters and Gattegno charts. • Multiply and divide integers and decimals by 10, 100 and 1000. • Order and compare numbers and measures using <, > and =. • Write numbers in equivalent multiplicative forms and using powers of 10. • Understand and use standard form $a \times 10^n$ for very large and very small numbers, where $1 \leq a < 10$.	• Order and compare negative numbers. • Add and subtract negative numbers. • Solve additive reasoning problems involving negative numbers. • Multiply and divide negative numbers. • Apply order of operations and substitution with directed numbers. **Fractions, decimals and percentages (FDP)** • Understand percent as parts per hundred. • Recognise fractions, decimals and percentages on hundred squares, bar models and number lines. • Convert terminating decimals to fractions. • Solve problems by converting between fractions, decimals and percentages.	• Multiply and divide fractions, understanding reciprocals. • Multiply and divide mixed numbers and solve four-operation fraction problems. **Percentages** • Represent percentages on hundred grids, bar models and number lines. • Calculate simple percentages of amounts. • Calculate percentage increase and decrease without a calculator for simple percentages. • Use multipliers to calculate any percentage increase or decrease with a calculator. • For greater depth, calculate an original value after a percentage change.	• Construct and interpret bar charts, pictograms, dual bar charts and composite bar charts. • Recognise sampling problems caused by bias or sample size. • Know when a scatter graph is appropriate. • Plot scatter graphs and draw a line of best fit. • Identify positive, negative and no correlation; identify outliers and use trends to make estimates.	• Form and simplify algebraic expressions involving perimeter. **Area** • Calculate area by counting squares and use formulas for rectangles, parallelograms and triangles. • Solve inverse area problems for rectangles, parallelograms and triangles. • Calculate areas of compound shapes and trapeziums. **Solving equations** • Understand equivalence and recognise term, coefficient, expression and equation. • Solve one-step and two-step linear equations. • Solve equations involving a single bracket.	• Identify properties of right-angled, isosceles and equilateral triangles. • Recognise properties of 3D objects and identify faces, edges and vertices. • Identify regular and irregular polygons.

KS3 Curriculum Overview: Maths

Skills	By the end of this term students will be able to: • Identify factors, multiples, primes, powers, HCF and LCM and apply them to problems. • Read, convert and interpret measures, scales and timetables. • Use multiplicative reasoning and ratio tables. • Represent and compare place value, including powers of 10 and standard form. • Explain and justify numerical reasoning using accurate mathematical language.	By the end of this term students will be able to: • Use formal written methods accurately for the four operations. • Calculate efficiently with decimals and related calculations. • Order and calculate with directed numbers. • Move fluently between fraction, decimal and percentage representations. • Communicate and justify methods, checking errors and correcting misconceptions.	By the end of this term students will be able to: • Simplify, compare and calculate with fractions. • Select efficient methods for the four operations with fractions. • Calculate percentages of amounts and percentage change. • Use multiplier methods in contextual problems. • Explain links between fractions, decimals and percentages.	By the end of this term students will be able to: • Calculate and compare summary statistics. • Organise raw data into frequency tables. • Construct and interpret appropriate statistical diagrams. • Evaluate sampling and data quality. • Describe correlation and use a line of best fit cautiously to estimate values.	By the end of this term students will be able to: • Use precise algebraic notation and simplify expressions. • Substitute values and expand single brackets. • Form algebraic expressions from perimeter contexts. • Calculate and reason with area, including inverse and compound problems. • Solve linear equations and communicate a logically ordered solution.	By the end of this term students will be able to: • Reflect and enlarge shapes accurately. • Identify and describe line and rotational symmetry. • Classify 2D shapes and 3D objects from their defining properties. • Use geometrical vocabulary to explain and justify classifications. • Make links between side, angle, diagonal and symmetry properties.
Key Vocabulary	• Factor • Multiple • Prime • Square Number • Cube Number • Square Root • Cube Root • Hcf • Lcm • Bidmas • Ratio Table • Scale • Metric • Imperial • Place Value • Power • Index • Standard Form	• Operation • Integer • Remainder • Negative • Positive • Directed Number • Numerator • Denominator • Fraction • Decimal • Percentage • Equivalent	• Numerator • Denominator • Equivalent • Simplify • Improper Fraction • Mixed Number • Reciprocal • Percentage • Increase • Decrease • Multiplier • Original Value	• Mean • Median • Mode • Range • Frequency • Tally • Sample • Bias • Bar Chart • Composite Bar Chart • Scatter Graph • Correlation • Line Of Best Fit • Outlier	• Variable • Term • Coefficient • Expression • Equation • Equivalent • Substitute • Like Terms • Expand • Factorise • Perimeter • Area • Base • Height • Parallelogram • Trapezium	• Reflection • Mirror Line • Symmetry • Rotational Symmetry • Enlargement • Scale Factor • Centre Of Enlargement • Quadrilateral • Parallelogram • Rhombus • Trapezium • Kite • Polygon • Regular • Irregular • Face • Edge • Vertex
Assessment	• Homework and questioning throughout. • Baseline/diagnostic assessment. • PR1 / formal assessment as scheduled in the curriculum plan.	• Homework and questioning throughout. • Topic assessment/blue-sheet review as indicated in the curriculum plan.	• Homework and questioning throughout. • PR2 / formal assessment as scheduled in the curriculum plan.	• Homework and questioning throughout. • Topic assessment/blue-sheet review as indicated in the curriculum plan.	• Homework and questioning throughout. • Topic assessment/blue-sheet review as indicated in the curriculum plan.	• Homework and questioning throughout. • Topic assessment/blue-sheet review as indicated in the curriculum plan.

		• Revision and formal assessment before the Christmas break.	• Topic assessment/blue-sheet review as indicated in the curriculum plan.	• PR3 / formal assessment as scheduled in the curriculum plan.	• Assessment point shown in the summer curriculum sequence.	• End-of-year review of cumulative knowledge where scheduled.
Assessment	Formal assessments take place on three occasions throughout the year and assess taught content cumulatively, in line with the 2026-27 curriculum plan.					