Year 7 Mathematics department scheme of work

Chapter	Title	Objectives (Key knowledge)	Resource links:
1	Whole numbers and decimals	• Use place value in decimal notation in different contexts, including money. • Compare and order whole numbers. • Add decimals using mental and written methods. • Understand and order negative numbers in the context of temperature. • Round a number to the nearest 10, 100 or 1000. • Use an estimate to check the result. • Use the order of operations.	1 - Whole numbers and decimals
2	Measures, perimeter and area	• Measure lengths in centimeters and millimeters. • Read and interpret scales in different contexts, including time. • Classify 2D shapes by their properties. • Calculate the perimeter of simple shapes. • Calculate or estimate the area of a shape by counting squares. • Choose and use standard metric units of measure.	2 - Measures, perimeter and area
3	Expressions and formulae	• Use letters to represent unknown numbers. • Simplify algebraic expressions by collecting like terms. • Substitute whole numbers into expressions and formulae. • Derive a simple formula.	3 - Expressions and formulae

4	Fractions, decimals and percentages	• Use fractions to describe parts of a whole, including improper fractions. • Identify equivalent fractions. • Find fractions of a quantity. • Calculate simple percentages, including problems involving money. • Express a proportion as a fraction, a decimal or a percentage.	4 - Fractions, decimals and percentages
5	Angles and 2D shapes	• Estimate angles and use a protractor to measure them. • Distinguish between acute, obtuse and reflex angles. • O Use the sum of angles at a point, on a straight line and in a triangle. • Classify triangles by their properties. • Find missing angles in a triangle. • Understand and use the points of a compass.	5 - Angles and shapes
6	Graphs	• Identify and plot coordinates in all four quadrants. • Construct and interpret line graphs in context.	6 - Graphs
7	Adding and subtracting	• Strengthen and extend mental methods of addition and subtraction. • Use efficient written methods to add and subtract whole numbers.	7 - Mental calculations
8	Statistics	• Plan how to collect and organise small sets of data from surveys and experiments. • Solve problems by interpreting data in lists and tables. • Construct and interpret statistical diagrams, including pictograms, bar charts, pie charts and line graphs. • Calculate statistics for small sets of data, including the mode, median and range.	8 - Statistics
9	Transformation and symmetry	• Identify lines of symmetry in a 2D shape. • Transform a shape by reflection in a mirror line. • Transform a shape by translation and describe a translation. • Transform a shape by rotation about a point. • Create tessellations using reflections, rotations and translations.	9 - Transformations and symmetry
10	Equations	• Represent functions as sequences of operations.	10 - Equations

		• Understand and use inverse operations. • Use letters to represent unknown numbers. • Construct and solve simple equations.	
11	Factors and multiples	• Recognise and list factors and multiples. • Use simple tests of divisibility. • Recognise the squares of numbers up to 10 x 10.	11 - Written and calculator methods
12	Constructions and 3D shapes	• Recognise and name common 3D shapes. • Construct simple nets of 3D shapes. • Use 2D representations to visualise 3D shapes. • Use a protractor to measure and draw angles. • Use a ruler and protractor to construct a triangle. • Know the parts of a circle.	12 - Constructions
13	Sequences	• Find patterns in sequences of numbers. • Describe a sequence using a rule to find the next term. • Generate terms in a sequence using a rule. • Use negative numbers in a sequence.	13 - Sequences
14	Multiplying and dividing	• Consolidate multiplication facts up to 12 x 12. • Multiply by 10 and 100. • Multiply whole numbers using mental and written methods. • Divide whole numbers using mental and efficient written methods. • Use a calculator and interpret the display in different contexts, including money.	14 - 3D shapes
15	Ratio and proportion	• Write and use ratios and proportions. • Solve simple problems involving ratio and proportion. • Solve arithmetic problems in context. • Construct and interpret scale drawings.	15 - Ratio and proportion
16	Probability	• Use the vocabulary and ideas of probability, drawing on experience. Understand and use the probability scale from 0 to 1. • Sort objects using a Venn diagram.	16 - Probability
