

HIAS MOODLE+ RESOURCE

HIAS Scheme of Learning for Mathematics

Medium Term Plans for Year Seven

HIAS Maths Team
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Final version

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Overview

This document contains...

Long-term curriculum map for Y7

Medium-term overview plans for Y7

Points to consider when using this resource

This medium-term plan identifies the key objectives in each unit.

For more detail and a break-down of these objectives please refer to the relevant unit plan.

Unit plans identify a learning journey, required prior knowledge, misconceptions, key vocabulary, and suggested tasks.

Appropriate models, images , concrete resources, and visual representations are an implicit element in all units.

National curriculum statutory end of year objectives are in **bold**. The content of the lessons highlighted in **red** at the end of each year should be used to secure knowledge and understanding of the end of year objectives as required.

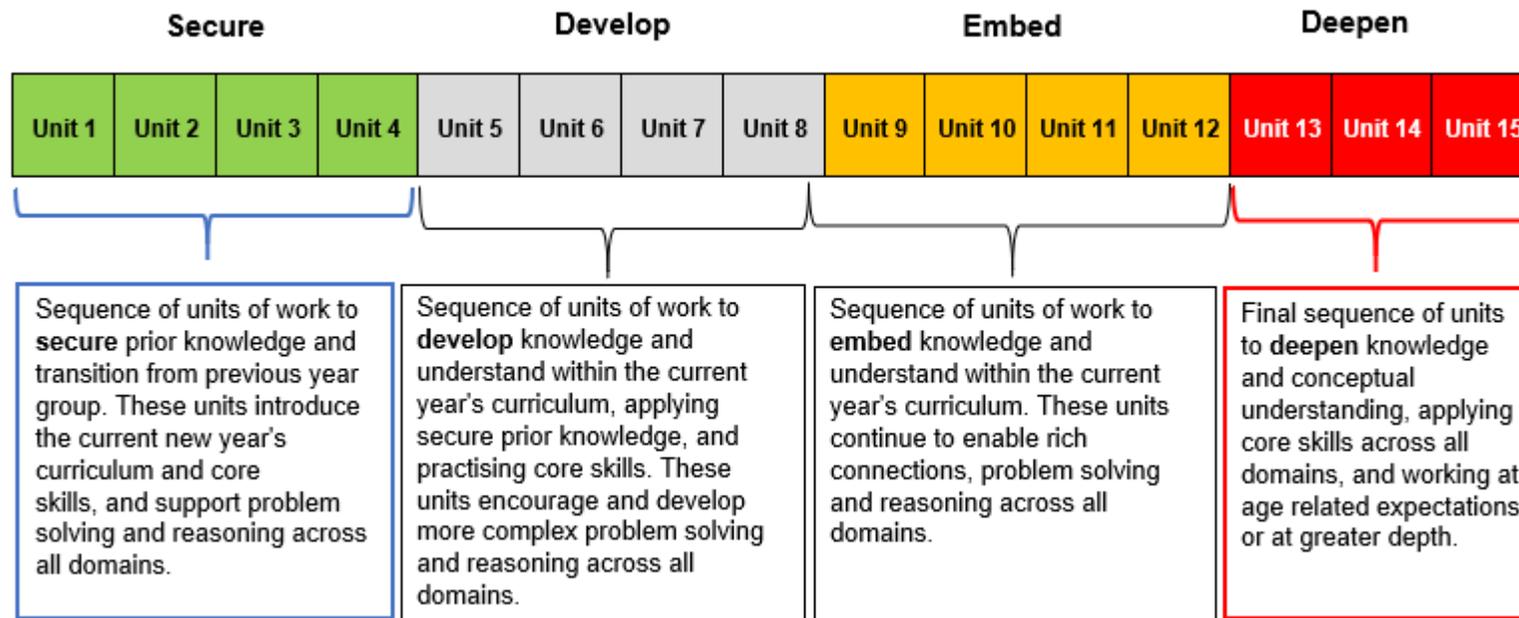
A suggested schedule for assessment is included as colour-coded bands, linked to the Hampshire Assessment Model if required.

Plans are based on a 10-week term to allow for assessment activities. They will need to be adjusted on a term-by-term basis according to timetabling and student need.

Long term curriculum map for Year 7

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Autumn	7.1 Algebra Notation Sequences		7.2 Four operations with rounding and approximation		7.3 Geometry Perimeters	7.4 Geometry with formulae	7.4 Ratio (fractional quantities) Calculation (order of operations)		7.5 Ratio (units conversion) with indices	
Spring	7.6 Fractions	7.7 Probability	7.8 Geometry Polygons and polyhedra			7.9 Percentages with ratio and proportion			7.10 Coordinates with linear functions	
Summer	7.11 Geometry (angle)	7.12 Statistics				7.13 Geometry with area and volume	7.14 Algebra Sequences Linear equations		7.15 Fractions, decimals and percentages with indices	

Overview of curriculum intent



Key for assessment bands

AM1	AM2	AM3	ARE
Assessment Milestone 1	Assessment Milestone 2	Assessment Milestone 3	Assessment ARE

YEAR 7 Autumn Term

Subsequent units should continue to revisit material from previous units to deepen learning, encourage automaticity and allow rich connections to be made across the year.

A.M	Unit	Hours	Domain	Y7 objectives
	7.1	5	Algebra: Notation and simplifying	<ul style="list-style-type: none"> • Use and interpret algebraic notation including ab in place of $a \times b$, $3y$ in place of $y + y + y$ and $3 \times y$, a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$, $a^2 b$ in place of $a \times a \times b$, a/b in place of $a \div b$ and the correct use of brackets. • Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors. • Simplify and manipulate algebraic expressions to maintain equivalence by collecting like terms and multiplying a single term over a bracket.
		5	Algebra: Sequences	<ul style="list-style-type: none"> • Recognise arithmetic sequences • Generate terms of a sequence from a term-to-term rule • Introduce position-to-term rules for simple arithmetic sequences, linked to multiplication tables

A.M	Unit	Hours	Domain	Y7 objectives
	7.2	5	Number and PV, including rounding and approximation	<ul style="list-style-type: none"> • Understand and use place value for decimals • Round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures) • Use approximation through rounding to estimate answers
		5	All four rules of arithmetic with integers and fractions	<ul style="list-style-type: none"> • Use the four operations, including formal written methods, applied to integers and decimals • Associate a fraction with division and calculate decimal fraction equivalents (e.g $0.375 = \frac{3}{8}$) • Recognise and use relationships between operations, including inverse operations • Use the symbols = , ≠ , > , < , ≤ , ≥ , ≈
	7.3 (a)	5	Geometry: Perimeter	<ul style="list-style-type: none"> • Calculate and solve problems involving the perimeters of 2-D shapes
Half Term				

A.M	Unit	Hours	Domain	Y7 objectives
	7.3 (b)	5	Geometry: Formulae (perimeter and area)	<ul style="list-style-type: none"> Derive and apply formulae to calculate and solve problems involving perimeter and area of triangles, parallelograms, and trapezia.
	7.4	5	Ratio and proportion: Fractional quantities	<ul style="list-style-type: none"> Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 Develop and formalise knowledge of ratio and proportion
		5	Calculations: Calculators, ordering and the order of operations	<ul style="list-style-type: none"> Use conventional notation for the priority of operations, including brackets Use a calculator and other technologies to calculate results accurately and then interpret them appropriately Order positive and negative integers, decimals and fractions Use the number-line as a model for the ordering of real numbers
	7.5	5	Ratio and proportion: Conversion between standard units	<ul style="list-style-type: none"> Begin to reason deductively about proportionality Change freely between related standard units (for example, time, length, area, volume, capacity and mass)
		5	Factors, multiples and indices	<ul style="list-style-type: none"> Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor and lowest common multiple Use integer powers and associated real roots (square, cube and higher), recognise powers of 2,3,4,5
Christmas				

Year 7 Spring Term

A.M	Unit	Hours	Domain	Y7 objectives
	7.6	5	Four operations: Fractions with decimals	<ul style="list-style-type: none"> Use the four operations, including formal written methods, applied to decimals, proper and improper fractions, and mixed numbers
	7.7	5	Probability: 0-1 scale	<ul style="list-style-type: none"> Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness and equally likely outcomes, using appropriate language and the 0-1 probability scale
	7.8	10	Geometry: Polygons and constructions	<ul style="list-style-type: none"> Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons and other polygons that are reflectively and rotationally symmetric. Use the standard conventions for labelling the sides and angles of triangle ABC Identify and construct congruent triangles
		5	Geometry: Volume and 3-D shape	<ul style="list-style-type: none"> Use the properties of the faces, surface, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones, and spheres to solve problems in 3-D Derive and apply formulae to calculate the volume of cubes and cuboids.
Half Term				

A.M	Unit	Hours	Domain	Y7 objectives
	7.9	10	Percentages	<ul style="list-style-type: none"> • Define percentage as ‘number of parts per hundred’ • Interpret percentages and percentage changes as a fraction or a decimal, and interpret these multiplicatively • Express one quantity as a percentage of another • Compare two quantities using percentages • Use standard units of measure to solve problems involving percentages, including mass, length, time, money with integer and decimal quantities
		5	Ratio and proportion: Notation and part:whole	<ul style="list-style-type: none"> • Use ratio notation, including reduction to the simplest form to solve problems. • Divide a given quantity into two parts in a given part: part or part: whole ratio.
	7.10	5	Coordinates: Four quadrants	<ul style="list-style-type: none"> • Work with coordinates in all four quadrants
		5	Coordinates: Linear functions	<ul style="list-style-type: none"> • Recognise, sketch and produce graphs of linear functions of one variable, using equations in x and y and the Cartesian plane
Easter				

Y7 Summer Term

A.M	Unit	Hours	Domain	Y7 objectives
	7.11	5	Geometry: Angle and transformations	<ul style="list-style-type: none"> Apply the properties of angles at a point, angles at a point on a straight line and vertically opposite angles Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures
	7.12	5	Statistics: Averages and distributions	<ul style="list-style-type: none"> Describe, interpret, and compare observed distributions of a single variable through data sets from univariate empirical distributions through appropriate measures of central tendency (mean, mode and median) and spread (range)
		5	Statistics: Frequency tables, bar charts and pictograms	<ul style="list-style-type: none"> Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts and pictograms for categorical data
		5	Statistics: Pie Charts	<ul style="list-style-type: none"> Construct and interpret appropriate tables, charts, and diagrams, including pie charts for categorical data
		5	Statistics: Line Graphs	<ul style="list-style-type: none"> Construct and interpret appropriate tables, charts and diagrams, including vertical line (or bar) charts for ungrouped numerical data
Half Term				

A.M	Unit	Hours	Domain	Y7 objectives
	7.13	5	Geometry : Area and volume	<ul style="list-style-type: none"> • Derive and apply formulae to calculate and solve problems involving perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) • Calculate and solve problems involving perimeters of 2-D shapes (including circles), areas of circles and composite shapes
	7.14	5	Algebra: Sequences and formulae	<ul style="list-style-type: none"> • Generate terms of a sequence from either a term-to-term or a position-to-term rule • Recognise arithmetic sequences and find the n^{th} term • Recognise geometric sequences and appreciate other sequences that arise
		5	Algebra: Substitution and solving linear equations	<ul style="list-style-type: none"> • Substitute numerical values into formulae and expressions, including scientific formulae • Simplify and manipulate algebraic expressions to maintain equivalence by collecting like terms and multiplying a single term over a bracket • Use algebraic methods to solve linear equations in one variable

A.M	Unit	Hours	Domain	Y7 objectives
	7.15	5	Number: Fractions, decimals, and percentages	<ul style="list-style-type: none"> • Understand and use place value for decimals, measures, and integers of any size. • Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ • Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8) • Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative
		5	Number: Laws of indices	<ul style="list-style-type: none"> • Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals • • Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5
Summer				

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For further details on the full range of services available please contact us using the following details:

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