Hampshire Services
HIAS SCHOOL IMPROVEMENT

HIAS MOODLE+ RESOURCE

HIAS Scheme of Learning for Mathematics

Medium Term Plans for Year Eight

HIAS Maths Team
May 2021
Final version

© Hampshire County Council

Hampshire County Council

www.hants.gov.uk

Overview

This document contains…
Long-term curriculum map for Y8
Medium-term overview plans for Y8

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.

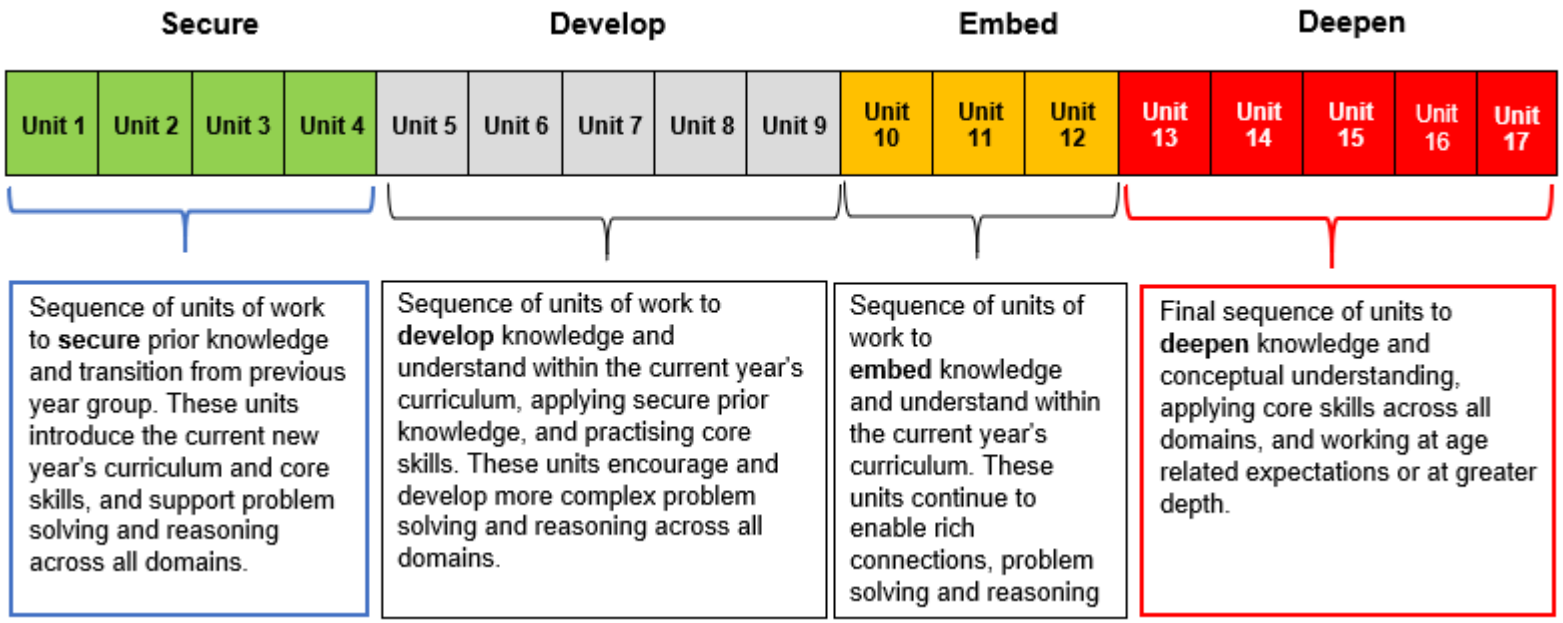
A suggested schedule for assessment is included as colour-coded bands, linked to the Hampshire Assessment Model if required.

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 8

<table>
<tr><th></th><th>Week 1</th><th>Week 2</th><th>Week 3</th><th>Week 4</th><th>Week 5</th><th>Week 6</th><th>Week 7</th><th>Week 8</th><th>Week 9</th><th>Week 10</th></tr>
<tr><td>Autumn</td><td colspan="3">8.1
Four operations
Fractions
Directed number</td><td colspan="2">8.2
Geometry
(shape and angle)</td><td>8.3
Probability</td><td>8.4
Ratio
% change</td><td colspan="3">8.5
Algebra
Sequences
Equations and formulae</td></tr>
<tr><td>Spring</td><td>8.6
Geometry
(perimeter and area)</td><td>8.7
Accuracy
(powers and roots)</td><td>8.8
Compound measures</td><td colspan="2">8.9
Statistics
(charts, graphs and averages)</td><td colspan="3">8.10
Prime factorisation
Standard Form</td><td colspan="2">8.11
Graphs
(linear & quadratic)
Sim. equations</td></tr>
<tr><td>Summer</td><td colspan="3">8.12
Geometry
Similarity & Congruence
Constructions</td><td colspan="2">8.13
Probability (theoretical)</td><td>8.14
Statistics
(scatters)</td><td>8.15
Decimals and fractions</td><td colspan="2">8.16
Algebra
Different graphs
Modelling</td><td>8.17
Rates of change
(%)
Number
(LCM/ HCF)</td></tr>
</table>

Overview of curriculum intent



Key for assessment bands

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

YEAR 8 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	Y8 objectives
	8.1	5	PV and number: Four operations with decimals and measure	• **Understand and use place value for decimals, measures, and integers of any size.** • **Use four operations, applied to decimals** in the context of measure
		5	Fractions: Four operations	• **Use four operations, applied to proper and improper fractions, and mixed numbers** • **Interpret fractions and percentages as operators**
		3	Directed number	• **Use four operations, applied to positive and negative numbers.**
		2	Primes	• Express numbers as products of primes • **Use prime factorisation, including using product notation and the unique factorisation property**

A.M	Unit	Hours	Domain	Y8 objectives
	8.2	5	Geometry : Property of shape	• **Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures (for example, equal lengths and angles) using appropriate language and technology.** • **Derive and use the sum of the angles in a triangle and use it to derive properties of regular polygons**
		5	Geometry: Angles and lines	• **Derive and use the sum of the angles in a triangle and use it to deduce the angle sum of any polygon.** • **Understand and use the relationship between parallel lines and alternate and corresponding angles**
Half Term				

A.M	Unit	Hours	Domain	Y8 objectives
	8.3	5	Probability: Mutually exclusive outcomes	• **Use the 0-1 probability scale and understand that the probabilities of all possible outcomes sum to 1.** • **Explore what can and cannot be inferred in probabilistic settings and express argument formally** • Introduce sample space diagrams
	8.4	5	Ratio and proportion: Part-Whole and percentage change	• **Understand that a multiplicative relationship between two quantities can be expressed as a fraction or a ratio** • **Divide a given quantity into a ratio** with more than two parts. • **Express the division of a quantity into two** or more **parts as a ratio** using appropriate notation • **Solve problems involving percentage change, including percentage increase, decrease and original value problems and simple interest in financial mathematics** • **Work with percentages greater than 100%**
	8.5	2	Algebra: Arithmetic sequences	• **Recognise arithmetic sequences and find the n^{th} term**
		3	Algebra: Simple factorising	• **Simplify and manipulate algebraic expressions by taking out common factors** • **Solve linear equations, including factorising**
		5	Algebra: Linear equations	• **Reduce a given linear equation in two variables to the standard form y=mx+c** • **Calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically, and algebraically**
		5	Algebra: Formulae and rearranging	• **Substitute numerical values into scientific formulae** • **Rearrange to change the subject** • **Solve linear equations , including rearrangement.**
Christmas				

YEAR 8 Spring Term

A.M		Unit	Hours	Domain	Y8 objectives
		8.6	5	Geometry: Formulae (perimeter and area)	• **Calculate and solve problems involving perimeters of 2-d shapes, including circles, areas of circles and composite shapes** • **Derive and apply formulae to calculate and solve problems involving perimeter and are of triangles, parallelograms, trapezia and the volume of cuboids (including cubes)**
		8.7	5	Accuracy, powers and roots	• **Round numbers and measures to an appropriate degree of accuracy (decimal places and significant figures)** • **Use conventional notation for powers and roots** • Introduce simple fractional powers, linking to roots and the laws of indices
		8.8	5	Compound measure and conversions	• **Use compound measure such as speed, unit pricing and density to solve problems** • **Use scale factors, scale diagrams and maps** • **Change freely between related standard units**
		8.9	10	Statistics: Graphs, charts, and averages for categorical data	• **Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data** • **Construct and interpret vertical line (or bar) charts for ungrouped numerical data and grouped numerical data.** • **Calculate and interpret measures of central tendency and spread, including consideration of outliers**
Half Term					

A.M	Unit	Hours	Domain	Y8 objectives
	8.10	10	Number: Standard Form	• **Interpret and compare numbers in standard form A x 10n , 1 ≤ A≤ 10, where n is a positive or negative integer or zero**
		5	Number: Prime Factorisation	• **Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8)** • Express numbers as products of primes • **Use prime factorisation, including using product notation and the unique factorisation property**
	8.11	5	Graphs: Linear and quadratics	• **Model situations or procedures by translating then into algebraic expressions or formulae or by using graphs** • **Interpret mathematical relationships both algebraically and graphically** • **Use linear and quadratic graphs to estimate values of y for given values of x and vice versa** • **Find approximate solutions to contextual problems from given graphs for a variety of functions.**
		5	Graphs: Simultaneous equations	• **Interpret mathematical relationships both algebraically and graphically** • **Use linear graphs to find approximate solutions of simultaneous linear equations**
Easter				

Y8 Summer Term

A.M	Unit	Hours	Domain	Y8 objectives
	8.12	5	Geometry: Similarity and congruence	• **Identify and construct congruent triangles, and construct similar shapes by enlargement, with or without coordinate grid**
		5	Geometry: Constructions and scale drawings	• **Draw and measure line segments and angles in geometric figures, including interpreting scale drawings**
	8.13	10	Probability: Theoretical	• **Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities**
	8.14	5	Statistics: Scatter Graphs	• **Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs.** • Identify and interpret correlation
Half Term				

A.M	Unit	Hours	Domain	Y8 objectives
	8.15	5	Number: Decimals and fractions	• **Work interchangeably with terminating, recurring and non-terminating decimals and their corresponding fractions** • **Relate the language of ratios and the associated calculations with the arithmetic of fractions**
	8.16	5	Algebra: Different graphs	• Explore **cubic, exponential, reciprocal, and piece-wise linear graphs.** • **Find approximate solutions to contextual problems using these graphs**
		5	Algebra: Modelling	• **Model situations by translating them into algebraic expressions or formulae and the associated graphs** • **Move freely between different numerical, algebraic, graphical and diagrammatic representations** • **Develop algebraic and graphical fluency when solving problems .**
	8.17	5	Rates of change: Percentage change and original values	• **Solve problems involving percentage change, including percentage increase, decrease and original value problems.** • **Solve problems involving simple interest in financial mathematics**
		5	Number: Primes LCM and HCF	• **Use prime numbers, factors, multiples, common factors and multiples, highest common factor and lowest common multiple** to solve problems • **Select and use appropriate calculation strategies to solve increasingly complex problems.**
Summer				

HIAS Maths Team contacts

Jo Lees – Area Inspector
Email: jo.lees@hants.gov.uk

Jacqui Clifft – Area Inspector
Email: jacqui.clifft@hants.gov.uk

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

Tel: 01962 874820 or email: hias.enquiries@hants.gov.uk

Upcoming Courses

Keep up-to-date with our learning opportunities for each subject through our Upcoming Course pages linked below. To browse the full catalogue of learning offers, visit our new Learning Zone. Full details of how to access the site to make a booking are provided here.

- English
- Maths
- Science
- Geography
- RE
- History
- Leadership
- Computing
- Art
- D&T
- Assessment
- Support Staff
- SEN

Terms and conditions

Terms of licence

Moodle+ subscribers are licenced to access and use this resource and have agreed to pay the annual subscription fee. This authority starts when the fee is paid and ends when the subscription period expired unless it is renewed. This file is for personal or classroom use only. By using it, you agree that you will not copy or reproduce this file except for your own personal, non-commercial use. HIAS have the right to modify the terms of this agreement at any time; the modification will be effective immediately and shall replace all prior agreements.

You are welcome to:

- download this resource
- save this resource on your computer
- print as many copies as you would like to use in your school
- amend this electronic resource so long as you acknowledge its source and do not share as your own work.

You may not:

- claim this resource as your own
- sell or in any way profit from this resource
- store or distribute this resource on any other website or another location where others are able to electronically retrieve it
- email this resource to anyone outside your school or transmit it in any other fashion.