HIAS Scheme of Learning for Mathematics

Medium Term Plans for Year Six

HIAS Maths Team
June 2023
Final version

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Overview

This document contains…
Long-term curriculum map for Y6
Medium-term overview plans for Y6 designed to support single age classes

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.

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

Plans are based on a **39-week school year** and will need to be **adjusted** on a term-by-term basis
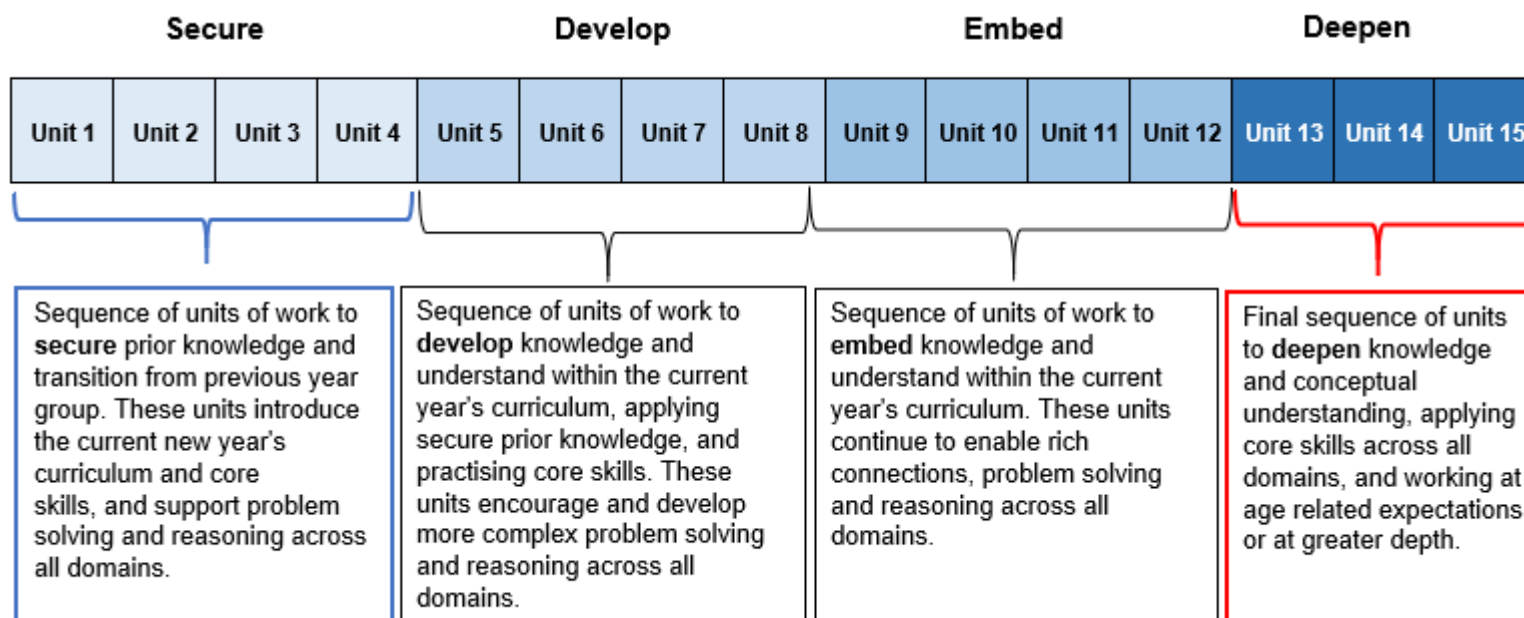

HIAS Maths Team Scheme of Learning 2023

Long term curriculum map for Year 6

Year 6 – Yearly Overview

Hampshire Services — HIAS SCHOOL IMPROVEMENT

HIAS MOODLE+ RESOURCE

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn	6.1 Number and Place Value Addition and Subtraction			6.2 Multiplication and Division			6.3 Fractions	6.4 Percentages	6.4 Time	6.4 Geometry		6.5 Number and Place Value And Measurement with the Four Operations		
	Utilise everyday opportunities to develop fluency with a broad range of arithmetic strategies in the context of the current unit of work. Revise and consolidate key facts for measurement and conversion of units of measure.													
Spring	6.6 Fractions and Ratio		6.6 Geometry and Measurement	6.7 Addition and Subtraction (Fractions) with Algebra		6.8 Statistics	6.9 Measurement	6.9 Algebra	6.10 Four Operations with Statistics		6.11 Geometry	6.11 Fractions		
	Utilise everyday opportunities to develop fluency with a broad range of arithmetic strategies in the context of the current unit of work. Revise and consolidate key facts for measurement and conversion of units of measure.													
Summer	6.12 Multiplication and Division			6.13 Statutory Tests	6.14 Fractions	6.15 Four Operations and Algebra		6.16 Fraction with Geometry. Ratio and Proportion			6.17 Multiplication and Division		6.18 Measurement	

Overview of curriculum intent

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Secure	Develop	Embed	Deepen

Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10	Unit 11	Unit 12	Unit 13	Unit 14	Unit 15

Sequence of units of work to **secure** prior knowledge and transition from previous year group. These units introduce the current new year's curriculum and core skills, and support problem solving and reasoning across all domains.	Sequence of units of work to **develop** knowledge and understand within the current year's curriculum, applying secure prior knowledge, and practising core skills. These units encourage and develop more complex problem solving and reasoning across all domains.	Sequence of units of work to **embed** knowledge and understand within the current year's curriculum. These units continue to enable rich connections, problem solving and reasoning across all domains.	Final sequence of units to **deepen** knowledge and conceptual understanding, applying core skills across all domains, and working at age related expectations or at greater depth.

Key for assessment bands

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

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YEAR 6 Autumn Term

Find everyday opportunities to develop fluency with a broad range of arithmetic strategies in the context of the current unit of work. Revise and consolidate key facts for measurement and conversion between units. 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	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.1	5	Number: Place Value	Solve number and practical problems involving: • Read, write, order and compare numbers to at least 10,000,000 and determine the value of each digit.	• I can partition numbers flexibly. • I can count forwards and backwards from a range of given numbers in multiples of 10, 100 and 1000. • I can estimate the position of numbers on a number line. • I can position and compare numbers on a number line. • I can recall key facts about 1000 and 10,000.
		10	Addition and Subtraction	• Y5: Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). • Perform mental calculations, including with mixed operations and large numbers • Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why. • Y5: Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. • Y5: Calculate and compare the area of rectangles (including squares) and including the standard units, square centimetres (cm2) and square meters (m2) and estimate the area of irregular shapes. • Recognise that shapes with the same area can have different perimeters and vice versa. • Y5: Use the properties of rectangles to deduct related facts and find missing lengths.	• I can deciding which methods to use and why. • I can add and subtract numbers mentally with increasingly larger numbers. • I can solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why. • I can calculate the perimeter and area of shapes. • I can recognise that shapes with the same area can have different perimeters and vice versa. • I can use properties of rectangles to find missing lengths.

A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.2	7	Multiplication and Division	• Y5: Calculate and compare the area of rectangles (including squares) and including the standard units, square centimetres (cm2) and square meters (m2) and estimate the area of irregular shapes. • Identify common factors, common multiples, and prime numbers. • Y5: Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. . • Perform mental calculations including with mixed operation and larger numbers.	• I can calculate the area of rectangles, drawing upon known multiplication facts. • I can use related facts when dividing. • I can identify common multiples. • I can identify common factors. • I can identify prime numbers. • I can multiply and divide by 10, 100 and 1000.
		8		• Multiply multi-digit numbers up to 4-digits by a 2-digit whole number using a formal written method of long multiplication (see NC appendix for methods). • Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. • Divide numbers up to 4-digits by a 2-digit whole number using a formal written method of long division (see NC appendix for methods), and interpret remainders as a whole number remainder, fraction or by rounding as appropriate for the context. • Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.	• I can multiply numbers up to 4-digits by 1-digit whole numbers using a formal written method. • I can multiply numbers up to 4-digits by 2-digit whole numbers using a formal written method of long multiplication. • I can solve problems in the context of multiplication. • I can divide numbers up to 4-digits by a 1-digit whole number using a formal written method. • I can divide numbers up to 4-digits by a 2-digit whole number using a formal written method of long division. • I can solve problems in the context of division.
	6.3	5	Fractions	• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Recall and use equivalences between simple fractions, decimals, and percentages, including in different contexts. • Y5: add and subtract fractions with the same denominator and multiples of the same number. • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Compare and order fractions, including fractions > 1	• I can represent fractions. • I can compare and order fractions. • I can add and subtract fractions with the same denominator and multiples of the same number. • I can add and subtract fractions with different denominators • I can recall and use equivalences between simple fractions and percentages.

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A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.4	5	Percentages	• Y5: Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction. • Y5: Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}$ and $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.	• I can understand that per cent relates to "number of parts per hundred". • I can calculate percentages of amounts.
		5	Measurement (time)	• Y5: Complete, read and interpret information in tables, including timetables. • Y5: Solve problems involving converting between units of time	• I can read and interpret information in timetables. • I can use a number line to calculate duration of time. • I can solve problems involving time.
		10	Geometry	• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. . • Recognise angles where they meet at a point, are on a straight line or are vertically opposite and find missing angles. • Draw 2-D shapes using given dimensions and angles. • Recognise, describe and build simple 3-D shapes, including making nets. • Describe positions on the full coordinate grid (all four quadrants). • Draw and translate simple shapes in the coordinate plane and reflect them in the axes.	• I can illustrate and name parts of circles. • I can draw 2-D shapes using given dimensions and angles. • I can recognise, describe and build simple 3-D shapes, including making nets. • I can describe positions on the full coordinate grid. • I can draw and translate simple shapes in the coordinate plane.

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A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can...' statements
	6.5	10	Place Value with Measurement (mass & capacity) and all four operations	• Identify the value of each digit to three decimal places and multiply and divide numbers by 10,100 and 1000 where the answers are up to three decimal places. • Solve problems involving the calculation and conversion units of measure, using decimal notation up to three decimal places where appropriate. • Use, read, write and convert between standard units, converting measurements of mass and capacity from a smaller unit of measure to a larger unit and vice versa. • Y5: Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.	• I can use, read, write and convert between grams and kilograms. • I can solve problem involving mass. • I can use, read, write and convert between litres and millilitres. • I can solve problems involving capacity. • I can understand and use equivalences between metric units and common imperial units.
		5		• Identify common factors, common multiples, and prime numbers. • Y5: Solve problems involving addition, subtraction, multiplication, and division, including using their knowledge of factors and multiples, squares and cubes. • Solve problems involving addition, subtraction, multiplication, and division, deciding which operations and methods to use and why. • Find pairs of numbers that satisfy pairs of numbers involving two unknowns. • Express missing number problems algebraically. • Enumerate all possibilities of combinations of two variables.	• I can identify common factors, common multiples, and prime numbers. • I can solve problems involving multiplication using knowledge of factors. • I can use mathematical reasoning to solve problems including the four operations. • I can express missing number problems algebraically. • I can find all possibilities of combinations of two variables.
				Christmas	

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Spring Term

Find everyday opportunities to develop fluency with a broad range of arithmetic strategies in the context of the current unit of work. Revise and consolidate key facts for measurement and conversion between units.

A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.6	10	Fractions, Decimals and Percentages with Ratio	• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) • Identify the value of each digit to three decimal places and multiply and divide numbers by 10,100,1000 where the answers are up to three decimal places. • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • Solve problems involving unequal sharing and grouping using knowledge of factors and multiples.	• I can identify the value of each digit to three decimal places. • I can compare fractions, decimals, and percentages, • I can solve ratio and proportion problems. • I can solve problems using my knowledge of factors and multiples.
		5	Geometry	• Interpret and construct pie charts and line graphs and use these to solve problems. • Y5: Draw given angles, and measure them in degrees (º) • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.	• I can interpret pie charts. • I can interpret pie charts and use these to solve problems. • I can draw angles using a protractor. • I can find missing angles.

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A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.7	10	Addition and Subtraction Fractions and Algebra	• Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why. • Perform mental calculations, including with mixed operations and large numbers. • Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. • Generate and describe linear number sequences. • Add and subtract fractions with the different denominators and mixed numbers, using the concept of equivalent fractions. • Use estimation to check answers to calculations and determine, in the context of a problem, level of accuracy. • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	• I can use estimation to check answers and determine reasonableness. • I can perform mental calculations. • I can describe and generate linear number sequences. • I can solve problems involve the calculation and conversion of units of measure. • I can add and subtract fractions.
	6.8	5	Statistics	• Use negative numbers in context and calculate intervals across zero. • Interpret and construct pie charts and line graphs and use these to solve problems. • Calculate and interpret the mean as an average.	• I can use negative numbers in context. • I can interpret line graphs and use these to solve problems. • I can calculate the mean as an average.
	6.9	5	Measurement	• Y5: Understand and use equivalences between metric units and common imperial units such as pounds and pints. • Convert between miles and kilometres. • Calculate, estimate and compare volume of cubes and cuboids using standard units including centimetre cubed (cm3) and cubic metres (m3) and extending to other units such as mm3 and km3. • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	• I can understand and use equivalences between metric and common imperial units. • I can calculate, estimate and compare volume of cubes and cuboids. • I can read scales.

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A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.9 cont	5	Algebra	• Use simple formulae. • Recognise when it is possible to use formulae for area and volume of shapes. • Express missing number problems algebraically. • Enumerate all possibilities of combinations of two variables.	• I can express missing number problems algebraically. • I can use simple formulae. • I can use simple formulae to complete number sequences. • I can recognise when it is possible to use formulae for area and volume of shapes.
	6.10	10	All Four Operations with Statistics	• Solve problems involving addition, subtraction, multiplication, and division, deciding which operations and methods to use and why. • Solve problems involving the calculation and conversion units of measure. • Use knowledge of the order of operations to carry out calculations involving the four operations. • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Identify common factors, common multiples, and prime numbers. • Express missing number problems algebraically. • Find pairs of numbers that satisfy number sentences involving two unknowns.	• I can identify factors, multiples, square, cube and prime numbers. • I can use knowledge of the order of operations to carry out calculations. • I can express number problems algebraically. • I can solve problems involving calculation and conversion of units of measure. • I can calculate and interpret the mean. • I can interpret and construct line graphs and use these to solve problems. • I can interpret and construct pie charts and use these to solve problems.
	6.11	5	Geometry	• Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. • Describe positions on the full coordinate grid (all four quadrants). • Draw and translate simple shapes on a coordinate plane and reflect them in the axes.	• I can find unknown angles. • I can reason by giving examples. • I can draw and translate shapes. • I can describe positions on the full coordinate grid.
		5	Fractions	• Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ • Divide proper fractions by whole numbers e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$	• I can multiply pairs of proper fractions. • I can divide fractions by whole numbers.
Easter Holidays					

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Year 6 Summer Term

Find everyday opportunities to develop fluency with a broad range of arithmetic strategies in the context of the current unit of work. Revise and consolidate key facts for measurement and conversion between units.

A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.12	10	Multiplication and Division	• Identify common factors, common multiples, and prime numbers. • Y5: Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • Y5: Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3). • Y5: Solve problems involving all four operations including using their knowledge of factors and multiples, squares and cubes. • Solve problems involving addition, subtraction, multiplication and division.	• I can identify common factors and multiples. • I can identify prime numbers. • I can recognise and use prime numbers, prime factors and composite numbers. • I can recognise and use square numbers and cube numbers, • I can solve problems using my knowledge of factors and multiples, squares and cubes. • I can solve problems involving multiplication and division. • I can find different ways to solve a problem.
	6.13	5	Statutory Tests		
	6.14	5	Fractions	• Add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions. • Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ • Divide proper fractions by whole numbers e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$	• I can find equivalent fractions. • I can add and subtract fractions with different denominators. • I can multiple simple pairs of proper fractions. • I can divide fractions by whole numbers.

A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.15	10	All Four Operations with Algebra	• Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. • Y5: Solve addition and subtraction multistep problems in context, deciding which operation and method to use and why. • Perform mental calculations, including with mixed operations and large numbers. • Use estimation to check answers to calculations and determine, in the context of the problem, levels of accuracy. • Use knowledge of the order of operations to carry out calculation involving the four operations. • Identify common factors, common multiples and prime numbers. • Use negative numbers in context and calculate intervals across zero. • Use simple formulae. • Express missing number problems algebraically. • Find pairs of numbers that satisfy number sentences involving two unknowns.	• I can perform mental calculations. • I can solve addition and subtraction problem using efficient methods. • I can use negative numbers in context. • I can use simple formulae. • I can find pairs of numbers that satisfy number sentences involving two unknowns. • I can express missing number problems algebraically.

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A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.16	7	Fractions and Geometry	• Use common factors to simplify fractions; Use common multiples to express fraction in the same denomination. • Compare and order fractions >1. • Add and subtract fractions with different denominators, and mixed numbers using the concept of equivalent fractions. • Multiply simple pairs of proper fractions, writing the answer in the simplest form, e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ • Divide proper fractions by whole numbers, e.g. $\frac{1}{3} \div 2 =$ • Associate a fraction with division and calculate decimal fraction equivalences (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$). • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	• I can compare and order fractions greater than 1. • I can divide proper fractions by whole numbers. • I can recall and use equivalences between fractions, decimals and percentages, • I can draw 2-D shapes given dimensions and angles. • I can find unknown angles. • I can build 3-D shapes.
		8	Ratio, Measurement and Statistics	• Y5: Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints. • Solve problems involving the relative sizes of two quantities where the missing values can be found using integer multiplication and division facts. • Solve problems involving the calculation of percentages, (e.g. of measures) such as 15% of 360 and the use of percentages for comparison. • Solve problems involving similar shapes where the scale factor is known or can be found. • Calculate and interpret the mean as average. • Interpret and construct pie charts and line graphs and use these to solve problems.	• I can draw 2-D shapes according to ratio. • I can solve problems involving scaling. • I can solve problems using metric and imperial equivalences. • I can solve problems involving the calculation of percentages. • I can interpret pie charts and use these to solve problems. • I can construct pie charts. • I can interpret pie charts and line graphs and use these to solve problems. • I can calculate and interpret the mean.

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A.M	Unit	Hours	Domain	Y6 National Curriculum Objectives	Learning journey - 'I can…' statements
	6.17	10	Multiplication and Division	• Y5: Multiply up to 4-digit numbers by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. • Divide up to 4-digit numbers by a 2-digit whole number using a formal written method of long division and interpret remainders as whole number remainders, fractions or by rounding as appropriate for the context. • Use estimation to check answers to calculations and determine, in the context of the problem, levels of accuracy. • Express missing number problems algebraically	• I can use formal written methods for multiplication. • I can use formal written methods for division. • I can interpret remainders as appropriate. • I can solve problems using multiplication and division. • I can express missing number problems algebraically.
	6.18	8	Measurement	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • Use, read, write, and convert between standard units, converting measurements of length, mass, volume and time from smaller units of measure to larger units of measure and vice versa using decimal notation up to three decimal places. • Recognise that shapes with the same areas can have different perimeters and vice versa. • Recognise when it is possible to use formulae for the area and volume of shapes. • Convert between miles and kilometres. • Calculate the area of parallelograms and triangles. • Calculate, estimate, and compare volume of cubes and cuboids using standard units including centimetre cubed (cm3) and cubic metres (m3) and extending to other units such as mm3 and km3.	• I can solve problems involving measure. • I can recognise shapes with same areas can have different perimeters, and vice versa. • I can calculate areas of parallelograms and triangles. • I can calculate, estimate and compare volume.

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HIAS Maths Team

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

Kate Spencer – Lead Inspector
Email: kathryn.spencer@hants.gov.uk

Rebecca Vickers – Teaching & Learning Adviser
Email: rebecca.vickers@hants.gov.uk

Nikki Barber – Teaching & Learning Advisor
Email – nicola.barber@hants.gov.uk

Olivia Goodburn – Teaching & Learning Advisor
Email – olivia.goodburn@hants.gov.uk

For further details on the full range of services available please contact us using the following email:htlcdev@hants.gov.uk

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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
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- Computing
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- Support Staff
- SEN

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