

Prior Learning

Ratio

Algebra

Decimals

Fractions, decimals and percentages

Area, perimeter and volume

Statistics

Ratio

Key vocabulary for this unit

Ratio	<u>Algebra</u>	<u>Decimals</u>	Fractions.	Area, perimeter	<u>Statistics</u>
Ratio	Term to term rule	Decimal place	decimals and	and volume	Bar chart
Proportion	Variable	Decimal fraction	percentages	Perimeter	Pictogram
"for everythere	Unknown	Recurring decimal	Per cent (%) 'out of	Area	Frequency table
are"	Expression	Equivalent fraction	100'	Volume	Tally chart
Part	Formula	Tenth	Percentage	Cubic units	Pie chart
Whole	One/two-step	Sharing	Discount	Cuboid	Discrete data
Scale factor	equation	Partitioning	Equivalent fraction	Width	Continuous data
Enlargement	Substitution	Exchanging	Equivalent decimal	Length	Line graph
Similar shapes	Pairs of unknowns	Rounding to 3 d.p	Convert	Rectangle	Sum
Length	enumerate	Hundredth	Compare	Rectilinear	Difference
Width		Thousandth	Order	Parallelogram	Comparison
Perimeter		Equal to	The whole	Perpendicular	Interpret
		Remainder		height	Mean average
		grouping			
Learning Sequence					

To add or multiply

	To use ratio language				
	To identify the ratio symbol				
	 To link ratio with fractions To look at scale drawings and use scale factors 				
	To solve ratio and proportion problems				
	To look at ratio involving recipes				
Algebra	To look at 1 and 2 step function machines				
	To form expressions				
	To look at substitution				
	To look at formulae and form equations				
	To solve 1 and 2 step equations				
	To find pairs of values				
	To solve problems with two unknowns				
Decimals	To identify place values within 1				
	To look at place value in integers and decimals				
	To round decimals				
	To add and subtract decimals				
	To multiply and divide by 10, 100 and 1000				
	To multiply and divide decimals by integers				
Fractions, Decimals	To look at fraction and decimal equivalents				
and Percentagess	To look at fractions as division				
	To understand percentages				
	Equivalent fractions, decimals and percentages				
	To order fractions, decimals and percentages				
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To find the percentage of an amount – 1 and 2 step			
To look at shapes with the same area			
To look at area and perimeter of shapes			
To find the area of a triangle (counting squares)			
To find the area of a right-angled triangle			
To find the area of any triangle			
The find the area of a parallelogram			
To find the volume of a cuboid			
To look at line graphs			
To work with dual bar charts			
To read and interpret pie charts			
To draw pie charts			
To calculate the mean			

Assessment milestones

Mathematical skills:

Ratio

- 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 fractions and multiples
- Solve problems involving similar shapes where the scale factor is known or can be found
- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

Algebra

- Use simple formulae
- Generate and describe linear number sequences

- Find pairs of numbers that satisfy an equation with two unknowns
- Enumerate possibilities of combinations of two variables
- Express missing number problems algebraically

Decimals

- Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
- Solve problems which require answers to be rounded to specified degrees of accuracy
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Multiply 1-digit numbers with up to 2 decimal places by whole numbers
- Use written division methods in cases where the answer has up to 2 decimal places
- Use written division methods in cases where the answer has up to 2 decimal places
- Solve problems involving addition, subtraction, multiplication and division

Fractions, decimals and percentages

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
- Compare and order fractions, including fractions >1
- Solve problems involving the calculation of percentages and the use of percentages for comparison

Area, perimeter and volume

- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when it is possible to use formulae for area and volume of shapes
- Calculate the area of parallelograms and triangles
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units

Statistics

• Interpret and construct pie charts and line graphs and use these to solve problems

- Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4)
- Interpret and construct pie charts and line graphs and use these to solve problems
- Calculate and interpret the mean as an average