



Maths Objectives Year 6

Units	Objectives covered
5A Unit 2 Whole Numbers: Word Problems	Pupils will be able to solve multi-step word problems. Pupils will be able to use a number of heuristics such as 'model drawing', 'make a systematic list', 'guess and check', 'unitary method', and 'before and after strategy' to solve multi-step word problems.
5A Unit 3 Fractions: Like and Unlike Fractions	identify two or more like fractions and two or more unlike fractions differentiate a like fraction from an unlike fraction
5A Unit 3 Fractions: Adding Unlike Fractions	list the multiples of the denominators of two unlike fractions and find the lowest common multiple from the lists add two unlike fractions using the above strategy draw a model to show equivalent fractions in the addition of unlike fractions
5A Unit 3 Fractions: Subtracting Unlike Fractions	list the multiples of the denominators of two unlike fractions and find the lowest common multiple from the lists subtract two unlike fractions without regrouping draw a model to show equivalent fractions in the subtraction of unlike fractions
5A Unit 3 Fractions: Fractions and division	associate fractions with division use 'conversion of improper fraction to mixed number' to express division as a mixed number use the long division method to express an improper fraction as a mixed number
5A Unit 3 Fractions: Converting Fractions to Decimals	convert proper fractions, improper fractions and mixed numbers by changing the denominators to 10, 100 or 1000 convert proper fractions, improper fractions and mixed numbers using long division convert proper fractions, improper fractions and mixed numbers using a calculator
5A Unit 3 Fractions: Adding mixed numbers	add two mixed numbers with or without regrouping add two mixed numbers using a calculator
5A Unit 3 Fractions: Subtracting mixed numbers	subtract a mixed number from another mixed number with or without regrouping subtract a mixed number from another mixed number using a calculator
5A Unit 3 Fractions: Word problems	solve word problems by relating to concepts in addition and subtraction solve word problems using models
5A Unit 4 Fractions: Product of proper fractions	conceptualise the meaning of multiplying two proper fractions with concrete representation use the cancellation (simplification) method to compute the product of two proper fractions

	explore and compare the product of two whole numbers and the product of two proper fractions
5A Unit 4 Fractions: Word Problems	<p>Pupils will be able to solve up to 2-step word problems involving fractions using: • model drawing and the unitary method</p> <p>the product of two fractions</p> <p>Pupils will be able to solve up to 2-step word problems by applying the concept of multiplication and product of a whole number and a mixed number.</p> <p>Pupils will be able to solve up to 2-step word problems with the use of multiplication and division in fractions.</p>
5A Unit 4 Fractions: Product of an improper fraction and a proper or improper fraction	<p>conceptualise the meaning of multiplying an improper fraction by another proper or improper fraction with concrete representation</p> <p>use the cancellation (simplification) method to compute the product of two fractions</p> <p>use a calculator to compute the above</p>
5A Unit 4 Fractions: Product of a mixed number and a whole number	<p>conceptualise the meaning of multiplying a mixed number by a whole number</p> <p>use regrouping process to compute the product of a mixed number and a whole number</p> <p>use a calculator to compute a mixed number with a whole number</p>
5A Unit 4 Fractions: Dividing a fraction by a whole number	<p>understand the meaning of dividing a fraction by a whole number</p> <p>use three different methods to divide a fraction by a whole number</p>
5A Unit 5 Area of a Triangle: Base and Height of a Triangle	Pupils will be able to identify the base and corresponding height of a triangle.
5A Unit 5 Area of a Triangle: Finding the area of a triangle	<p>state that the area of a triangle is half that of its related rectangle</p> <p>state the area of a triangle in terms of its base and corresponding height</p> <p>find the area of a triangle given its base and corresponding height</p>
5A Unit 6 Ratio: Finding Ratio	<p>understand the concept of ratio as a way to show the relative sizes of two quantities</p> <p>understand that a given ratio does not indicate the actual sizes of the quantities involved</p> <p>draw a comparison model to represent two quantities given the ratio</p> <p>solve simple word problems involving ratio using model drawing</p>
5A Unit 6 Ratio: Equivalent ratios	<p>express equivalent ratios given two quantities</p> <p>write a given ratio $x : y$ in its simplest form</p> <p>find the missing number(s) in equivalent ratios</p>
5A Unit 6 Ratio: Word Problems	<p>Pupils will be able to solve up to 2-step word problems involving ratio of two quantities using: • the concept of equivalent ratios</p> <p>model drawing and the unitary method</p> <p>Pupils will be able to solve up to 2-step word problems involving ratio of three quantities using: • the concept of equivalent ratios • model drawing and the unitary method</p>
5A Unit 6 Ratio: Comparing three quantities	<p>use ratio to show the relative sizes of three quantities</p> <p>express equivalent ratios given three quantities</p> <p>write a given ratio $x : y : z$ in its simplest form</p>

	find the missing number(s) in equivalent ratios
5B Unit 7 Decimals: converting decimals to fractions	convert tenths, hundredths and thousandths to fractions or mixed numbers in their simplest forms
5B Unit 7 Decimals: Multiplying by tens, hundreds and thousands	multiply a decimal up to 3 decimal places by 10, 100 and 1000 by: (i) moving each digit 1, 2 or 3 places respectively to the left in the place value chart (ii) shifting the decimal point 1, 2 or 3 places respectively to the right multiply a decimal up to 3 decimal places by tens, hundreds and thousands
5B Unit 7 Decimals: Dividing by tens, hundreds and thousands	divide a decimal up to 3 decimal places by 10, 100 and 1000 by: (i) moving each digit 1, 2 or 3 places respectively to the right in the place value chart (ii) shifting the decimal point 1, 2 or 3 places respectively to the left divide a decimal by tens, hundreds and thousands
5B Unit 7 Decimals: Using a calculator	Pupils will be able to use a calculator to: • type in decimals Pupils will be able to use a calculator to: • add and subtract decimals Pupils will be able to use a calculator to: • multiply and divide decimals by a whole number
5B Unit 7 Decimals: Word Problems	Pupils will be able to solve multi-step word problems involving decimals, and: • use rounding for answers Pupils will be able to solve multi-step word problems involving decimals, and: • estimate or check reasonableness of answers
5B Unit 8 Measurements: Converting a measurement from a larger unit to a smaller unit	convert measurements of length, mass and volume from a larger unit to a smaller unit: (i) from metres to centimetres (ii) from kilometres to metres (iii) from kilograms to grams (iv) from litres to millilitres
5B Unit 8 Measurements: Converting a measurement from a smaller unit to a larger unit	convert measurements of length, mass and volume from a smaller unit to a larger unit: (i) from centimetres to metres (ii) from metres to kilometres (iii) from grams to kilograms (iv) from millilitres to litres
5B Unit 9 Mean: Understanding mean	interpret mean as the total amount divided by the number of items in a group find the mean number or quantity of a group find the total amount given the mean and the number of items in a group
5B Unit 9 Mean: Word Problems	Pupils will be able to solve up to 3-step word problems involving mean.
5B Unit 10 Percentage:	understand the concept of percentage as another way of comparing two numbers express a part of a whole as a percentage express a fraction with a denominator of 100 or 10 as a percentage express a decimal as a percentage express a percentage as a fraction in its simplest form express a percentage as a decimal
5B Unit 10 Percentage: converting more	by converting the denominator of the fraction to 100 using the unitary method using the multiplication method

fractions to percentages	
5B Unit 10 Percentage: Percentage of a quantity	Pupils will be able to find the value of a percentage part of a whole using: • the unitary method Pupils will be able to find the value of a percentage part of a whole using: • the multiplication method
5B Unit 10 Percentage: Word Problems	Pupils will be able to solve up to 2-step word problems: • to find the percentage for a part of a whole and the percentage of a quantity Pupils will be able to solve up to 2-step word problems: • involving discount, service charges and annual interest
5B Unit 11 Angles: Angles on a straight line	identify and name angles on a straight line recognise that the sum of angles on a straight line is 180° recognise that if the sum of two or more angles is 180° , then they can make angles on a straight line find unknown angles on a straight line
5B Unit 11 Angles: Angles at a point	identify and name angles at a point recognise that the sum of angles at a point is 360° recognise that if the sum of three or more angles is 360° , then they can make angles at a point find unknown angles at a point
5B Unit 11 Angles: Vertically opposite angles	recognise and name vertically opposite angles recognise that vertically opposite angles are equal find unknown angles using the property of vertically opposite angles
5B Unit 12 Properties of Triangles and 4- sided shapes: Angles of a triangle	recognise that the sum of the angles of a triangle is 180° find the unknown angle of a triangle given the other two angles
5B Unit 12 Properties of Triangles and 4- sided shapes: Right angled triangles	define a right-angled triangle state that in a right-angled triangle, the other two angles add up to 90° find unknown angle(s) using the properties of a right-angled triangle Pupils should be able to explain that one of the angles in a right-angled triangle must be 90° and that all three angles must add up to 180° .
5B Unit 12 Properties of Triangles and 4- sided shapes: Isosceles triangles	define an isosceles triangle state that the angles opposite the equal sides of an isosceles triangle are equal find unknown angle(s) using the properties of an isosceles triangle
5B Unit 12 Properties of Triangles and 4- sided shapes: Equilateral triangles	define an equilateral triangle state that each angle of an equilateral triangle is 60° find unknown angle(s) using the properties of an equilateral triangle Pupils will be able to draw triangles based on the information given and identify which triangles can be made.
5B Unit 12 Properties of Triangles and 4-	define a parallelogram state that the opposite sides and angles of a parallelogram are equal state that each pair of angles between two parallel sides of a parallelogram add up

sided shapes: Parallelograms	to 180° find unknown angles using the properties of a parallelogram
5B Unit 12 Properties of Triangles and 4- sided shapes: Rhombuses	define a rhombus state that opposite angles of a rhombus are equal state that each pair of angles between the parallel sides of a rhombus add up to 180° find unknown angles using the properties of a rhombus state that all four sides of a rhombus are equal
5B Unit 12 Properties of Triangles and 4- sided shapes: Trapeziums	define a trapezium state that each pair of angles between the parallel sides of a trapezium adds up to 180° find unknown angles using the properties of a trapezium understand that a parallelogram can also be a rhombus, a rectangle or a square understand that a trapezium cannot be a parallelogram, so a parallelogram cannot be a trapezium
5B Unit 13 Geometrical Construction: Drawing triangles	draw a triangle, given two angles and the side adjacent to the given angles draw a triangle, given two sides and the included angle
5B Unit 13 Geometrical Construction: Drawing 4-sided shapes	draw a square, given one side draw a rectangle, given its length and width draw a rhombus, given one side and one angle draw a parallelogram, given two adjacent sides and the included angle draw a trapezium with the parallel sides indicated, given two adjacent sides, the included angle and the angle which is on the same parallel side
5B Unit 14 Volume of Cubes and Cuboids: Building solids using unit cubes	build solids with unit cubes count the number of unit cubes in a solid made up of unit cubes
5B Unit 14 Volume of Cubes and Cuboids: Drawing cubes and cuboids	draw a cube and a cuboid on an isometric grid/dotty paper complete a partially drawn cube and cuboid on an isometric grid/dotty paper
5B Unit 14 Volume of Cubes and Cuboids: Understanding and measuring volume	state that the volume of an object is the amount of space it occupies state which object has a greater/smaller volume find the volume of a solid in cubic units state that the volume of a 1 cm/1 m cube is 1 cubic centimetre/1 cubic metre (cm ³ /m ³) find the volume of a solid made up of 1 cm/1 m cubes
6A Unit 1 Algebra: Using letters as numbers	recognise and write simple algebraic expressions in one variable evaluate simple algebraic expressions by substitution Pupils will be able to conclude that $y/2$ can be interpreted as $1/2$ of y or $1/2 \times y$ and $(y - 2)/3$ can be interpreted as $(y - 2) \div 3$ or $1/3 \times (y - 2)$.
6A Unit 1 Algebra: Simplifying	Pupils will be able to simplify algebraic expressions in one variable.

algebraic expressions	
6A Unit 1 Algebra: Word Problems	Pupils will be able to solve simple word problems involving algebraic expressions.
6A Unit 2 Angles in Shapes and Diagrams: Finding unknown angles	find unknown angles in geometric shapes using the properties of: (a) angles on a straight line (b) angles at a point (c) vertically opposite angles (d) triangles (e) four-sided shapes (square, rectangle, parallelogram, rhombus and trapezium) Pupils will be able to name three- and four-sided geometric shapes based on the descriptions provided.
6A Unit 3 Nets: Solids	identify and name cubes, cuboids, prisms, pyramids, cylinders and cones identify the faces of a solid, state the number of faces and name their shapes. This excludes the cylinder and cone, which have surfaces but do not have faces
6A Unit 3 Nets: Nets of Solids	identify the nets of a cube, a cuboid, a prism and a pyramid identify the solid formed by a given net
6A Unit 4 Fractions: Four operations with fractions	add and subtract fractions or mixed numbers multiply fractions divide a fraction by a whole number solve word problems on fractions
6A Unit 4 Fractions: Dividing by a proper fraction	interpret the division of a whole number by a proper fraction interpret the division of a proper fraction by another proper fraction find the quotient by multiplying the dividend by the reciprocal of the divisor
6A Unit 4 Fractions: Word Problems	solve word problems involving division of a whole number or proper fraction by a proper fraction
6A Unit 5 Ratio: Ratio and Fraction	write the ratio of one quantity to another quantity in terms of (i) the actual number, and (ii) the number of groups express one quantity as a fraction of another quantity given their ratio find how many times larger one value is compared to another, given their ratio
6A Unit 5 Ratio: Word Problems	express fractions and comparative statements as models interpret a model and use the unitary method to solve word problems solve word problems by applying the common multiple concept apply the ratio concept to solve geometrical problems using the unitary method
6A Unit 5 Ratio: Comparing ratios	recognise that a set of ratios can be expressed in their simplest form as the same ratio and that their corresponding values are multiples of the units in this ratio apply these concepts and equivalent ratios to solve simple word problems apply these concepts and the unitary method (together with models) to solve word problems
6A Unit 5 Ratio: Word Problems 2	Pupils will be able to solve higher-order word problems involving ratios using model drawing, the 'before-after' concept and the strategy of working backwards.
6A Unit 6 Percentage: Finding Percentages	express a fraction or a decimal as a percentage and vice versa find the whole given a part and the percentage find a part given the whole and the percentage of the other part
6A Unit 6 Percentage: Word Problems	solve word problems using model drawing and the unitary method find the percentage change (percentage increase or decrease) using the unitary or fractional methods find the original or final value given the percentage change solve word problems involving percentage and discount

6A Unit 6 Percentage: Word Problems 2	Pupils will be able to solve higher-order word problems using model drawing, the 'before-after' concept, the strategy of working backwards and the unitary method
6B Unit 7 Speed: Distance and speed	.understand the concept of speed as the distance travelled per unit of time use the unitary method or a formula to calculate speed, distance or time read, interpret and write speed in different units use different units of speed to solve speed problems
6B Unit 7 Speed: Average speed	understand the concept of average speed as the total distance travelled divided by the total time taken find average speed given the total distance travelled and the total time taken find average speed given different intervals of time and distance, different speeds and distance, or different intervals of time and speed
6B Unit 7 Speed: Word problems	Pupils will be able to solve higher-order word problems involving a combination of concepts such as average, speed and rate.
6B Unit 8 Circles: Radius, diameter and circumference	identify the radius, diameter and circumference of a circle state the relationship between: (i) the radius and the diameter (ii) the circumference and the diameter recognise a semicircle as half of a circle and a quadrant as a quarter of a circle find the circumference of a circle given its radius or diameter
6B Unit 8 Circles: Area of a circle	state the relationship between the area of a circle and its radius find the area of a circle given its radius or diameter calculate the areas of shapes made up of circles, semicircles and quadrants
6B Unit 9 Pie Charts: understanding pie charts	recognise a pie chart as another type of graph read and interpret pie charts
6B Unit 10 area and Perimeter	Pupils will be able to find the area and perimeter of shapes related to squares, rectangles, triangles and circles. Pupils will be able to see that the areas of three different composite shapes formed by a square and a rectangle are equal, but their perimeters are not.
6B Unit 11 Volume of Solids and Liquids: solids	find one dimension of a cuboid given the volume and two other dimensions, or the volume and the area of one face use the square root of a number to find the side of a square given its area use the cube root of a number to find the edge of a cube given its volume
6B Unit 11 Volume of Solids and Liquids: Liquids	find the volume of liquid in a cubical or a cuboid tank with given dimensions find the height of the water in a cuboid tank given the volume of water and the length and width of the tank find the time taken to fill a cuboid tank with water given the volume and the rate of flow find the side of the square base of a cuboid tank given the volume and height of water find the edge of a cubical tank given the volume of water