Pott Shrigley Church School
Maths Long Term Plan

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils will make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They will also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material will consolidate their understanding, including through additional practice, before moving on.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key stage 1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This will involve working with numerals, words and the 4 operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils will develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching will also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils will know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils will read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1

In Y1 pupils will be taught about:

Number - number and place value

Pupils will be taught to:

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s
- given a number, identify 1 more and 1 less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- read and write numbers from 1 to 20 in numerals and words

Number - addition and subtraction

Pupils will be taught to:

- read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including 0
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9

Number - multiplication and division

Pupils will be taught to:

- solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Number - fractions

Pupils will be taught to:

- recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity
- recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity

Measurement

Pupils will be taught to:

compare, describe and solve practical problems for:

- lengths and heights
- mass/weight
- capacity and volume

Measure and begin to record the following:

- lengths and heights
- mass/weight
- capacity and volume
- time (hours, minutes, seconds)
- Recognise and know the value of different denominations of coins and notes
- sequence events in chronological order using language
- recognise and use language relating to dates, including days of the week, weeks, months and years
- tell the time to the hour and half past the hour and draw the hands on a clock face to show these times

Geometry - properties of shapes

- Pupils will be taught to:
- recognise and name common 2-D and 3-D shapes, including:
- 2-D shapes [for example, rectangles (including squares), circles and triangles]
- 3-D shapes, for example, cuboids (including cubes), pyramids and spheres.

Geometry - position and direction

Pupils will be taught to:

- describe position, direction and movement, including whole, half, quarter and three-quarter turns

In Y2 pupils will be taught about:

Number - number and place value

Pupils will be taught to:

- count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward
- recognise the place value of each digit in a two-digit number (10s, 1s)
- identify, represent and estimate numbers using different representations, including the number line
- compare and order numbers from 0 up to 100; use <, > and = signs
- read and write numbers to at least 100 in numerals and in words
- use place value and number facts to solve problems

Number - addition and subtraction

Pupils will be taught to:

- solve problems with addition and subtraction:
- using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- applying their increasing knowledge of mental and written methods
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
- a two-digit number and 1s
- a two-digit number and 10s
- 2 two-digit numbers
- adding 3 one-digit numbers
- show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Number - multiplication and division

Pupils will be taught to:

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
- show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

Number - fractions

Pupils will be taught to:

- recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
- write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$

Measurement

Pupils will be taught to:

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, mass, volume/capacity and record the results using >, < and =
- recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- find different combinations of coins that equal the same amounts of money
- solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
- compare and sequence intervals of time
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- know the number of minutes in an hour and the number of hours in a day

Geometry - properties of shapes

Pupils will be taught to:

- identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line
- identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
- identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
- compare and sort common 2-D and 3-D shapes and everyday objects

Geometry - position and direction

Pupils will be taught to:

- order and arrange combinations of mathematical objects in patterns and sequences
- use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)

Statistics

Pupils will be taught to:

- interpret and construct simple pictograms, tally charts, block diagrams and tables
- ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- ask-and-answer questions about totalling and comparing categorical data

Lower Key stage 2 – Year 3 and 4

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This will ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils will develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching will also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It will ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils will have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils will read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

In Y3 pupils will be taught about:

Number - number and place value

Pupils will be taught to:

- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)
- compare and order numbers up to 1,000
- identify, represent and estimate numbers using different representations
- read and write numbers up to 1,000 in numerals and in words
- solve number problems and practical problems involving these ideas

Number - addition and subtraction

Pupils will be taught to:

Add and subtract numbers mentally, including:

- a three-digit number and 1s
- a three-digit number and 10s
- a three-digit number and 100s
- add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Number - multiplication and division

Pupils will be taught to:

- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Number - fractions

Pupils will be taught to:

- count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
- compare and order unit fractions, and fractions with the same denominators
- solve problems that involve all of the above

Measurement

Pupils will be taught to:

- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- measure the perimeter of simple 2-D shapes
- add and subtract amounts of money to give change, using both £ and p in practical contexts
- tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
- estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight
- know the number of seconds in a minute and the number of days in each month, year and leap year
- compare durations of events

Geometry - properties of shapes

Pupils will be taught to:

- draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
- recognise angles as a property of shape or a description of a turn
- identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle
- identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Statistics

Pupils will be taught to:

- interpret and present data using bar charts, pictograms and tables
- solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables

In Y4 pupils will be taught about:

Number - number and place value

Pupils will be taught to:

- count in multiples of 6, 7, 9, 25 and 1,000
- find 1,000 more or less than a given number
- count backwards through 0 to include negative numbers
- recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s)
- order and compare numbers beyond 1,000
- identify, represent and estimate numbers using different representations
- round any number to the nearest 10, 100 or 1,000
- solve number and practical problems that involve all of the above and with increasingly large positive numbers
- read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value

Number - addition and subtraction

Pupils will be taught to:

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- estimate and use inverse operations to check answers to a calculation
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Number - multiplication and division

Pupils will be taught to:

- recall multiplication and division facts for multiplication tables up to 12 × 12
- use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Number - fractions (including decimals)

Pupils will be taught to:

- recognise and show, using diagrams, families of common equivalent fractions
- count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10
- solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- add and subtract fractions with the same denominator
- recognise and write decimal equivalents of any number of tenths or hundreds
- recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
- find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- round decimals with 1 decimal place to the nearest whole number
- compare numbers with the same number of decimal places up to 2 decimal places
- solve simple measure and money problems involving fractions and decimals to 2 decimal places

Measurement

Pupils will be taught to:

- convert between different units of measure [for example, kilometre to metre; hour to minute]
- measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- find the area of rectilinear shapes by counting squares
- estimate, compare and calculate different measures, including money in pounds and pence
- read, write and convert time between analogue and digital 12- and 24-hour clocks
- solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days

Geometry - properties of shapes

Pupils will be taught to:

- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- identify acute and obtuse angles and compare and order angles up to 2 right angles by size
- identify lines of symmetry in 2-D shapes presented in different orientations
- complete a simple symmetric figure with respect to a specific line of symmetry

Geometry - position and direction

Pupils will be taught to:

- describe positions on a 2-D grid as coordinates in the first quadrant
- describe movements between positions as translations of a given unit to the left/right and up/down
- plot specified points and draw sides to complete a given polygon

Statistics

Pupils will be taught to:

- interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
- solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

Upper key stage 2 - years 5 and 6

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This will develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils will develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures will consolidate and extend knowledge developed in number. Teaching will also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils will be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils will read, spell and pronounce mathematical vocabulary correctly.

In Y5 pupils will be taught about:

Number - number and place value

- Pupils will be taught to:
- read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
- count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
- interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0
- round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000
- solve number problems and practical problems that involve all of the above
- read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

Number - addition and subtraction

Pupils will be taught to:

- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Number - multiplication and division

Pupils will be taught to:

- identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers
- know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- multiply and divide numbers mentally, drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
- recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})
- solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Number - fractions (including decimals and percentages)

Pupils will be taught to:

- compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
- add and subtract fractions with the same denominator, and denominators that are multiples of the same number
- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
- read, write, order and compare numbers with up to 3 decimal places
- solve problems involving number up to 3 decimal places
- recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction
- solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

Measurement

Pupils will be taught to:

- convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

- calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes
- estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

Geometry - properties of shapes

Pupils will be taught to:

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (°)

identify:

- angles at a point and 1 whole turn (total 360°)
- angles at a point on a straight line and half a turn (total 180°)
- other multiples of 90°
- use the properties of rectangles to deduce related facts and find missing lengths and angles
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Geometry - position and direction

Pupils will be taught to:

- identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

Statistics

Pupils will be taught to:

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables

In Y6 pupils will be taught about:

Number - number and place value

Pupils will be taught to:

- read, write, order and compare numbers up to 10,000,000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across 0
- solve number and practical problems that involve all of the above

Number - addition, subtraction, multiplication and division

Pupils will be taught to:

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the 4 operations
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- solve problems involving addition, subtraction, multiplication and division
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Number - Fractions (including decimals and percentages)

Pupils will be taught to:

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including 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 its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
- divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]
- associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]
- 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
- multiply one-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
- solve problems which require answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Ratio and proportion

Pupils will be taught to:

- solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts
- solve problems involving the calculation of percentages [for example, of measures and 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
- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Algebra

Pupils will be taught to:

- use simple formulae
- generate and describe linear number sequences
- express missing number problems algebraically
- find pairs of numbers that satisfy an equation with 2 unknowns
- enumerate possibilities of combinations of 2 variables

Measurement

Pupils will be taught to:

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate
- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places
- convert between miles and kilometres
- 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 (cm^3) and cubic metres (m^3), and extending to other units

Geometry - properties of shapes

Pupils will be taught to:

- draw 2-D shapes using given dimensions and angles
- recognise, describe and build simple 3-D shapes, including making nets
- compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- 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

Geometry - position and direction

Pupils will be taught to:

- describe positions on the full coordinate grid (all 4 quadrants)
- draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Geometry - position and direction

Pupils will be taught to:

- describe positions on the full coordinate grid (all 4 quadrants)
- draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Statistics

Pupils will be taught to:

- interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

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Maths Long Term Plan

Autumn term 12 weeks + 1 week of assessments (13 weeks)

Year Rec/Y1		
Autumn (12 weeks)		
Numbers to 5 and sorting	**Comparing groups 1 more/1 less**	**Time/2D shape/money**
• Recognise numbers 1-5 • Identify basic 2D shapes • Recognise 1p, 2p and 5p coins • Be able to continue a two-step repeating pattern • Understand number conservation (eg, however you arrange three objects, there are still only three objects) • To use the terms 'bigger' and 'smaller' • Subitise to 5	• Order numbers to 5 • Count forwards and backwards to 5 • Partition numbers to 5 • Use informal jottings to record number / quantities • Number bonds to 5 • Compare quantities using terms 'more', 'less' and 'fewer' • Say the number that is one more / one less to 5 • Sort objects based on shape, colour or size • Sorting the same objects in different ways	
Y1 Autumn 1 (5 weeks)	**Y1 Autumn 1/2 (5 weeks)**	**Y1 Autumn 2 (2 weeks)**
Place value	**Number – Addition and Subtraction**	**Shape + consolidation**
• Sort, count and represent objects • Count, read and write forwards from any number 0 to 10 • Count, read and write backwards from any number 0 to 10 • Count one more • Count one less • Use one-to-one correspondence to compare groups • Compare groups using language – equal, more/greater, less/ fewer • Use < > and = symbols • Compare numbers • Order numbers • Use ordinal numbers (1st, 2nd, 3rd) • Use a number line	• Part whole model • Addition symbol • Fact families- addition facts • Number bonds for numbers up to 10, including systematic methods • Compare Number bonds • Addition- adding together, adding more • Finding a part • Subtraction, taking away, how many left? Crossing out, Introducing the subtraction symbol • Fact families- 8 facts • Subtraction- counting back • Subtraction- Finding the difference • Comparing addition and subtraction statements	• Recognise, name and sort 3D shapes • Recognise, name and sort 2D shapes • Patterns with 2D and 3D shapes

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Spring term 12 weeks + 1 week of assessments (13 weeks)

Year Rec/Y1				
Spring (12 weeks)				
Number Bonds to 5 Number Bonds to 10 Addition to 10	**Numerical patterns – Odds and evens - Doubling and halving**		**3D Shape 2D Shape Spatial Awareness Money**	
• Recognise zero • Review numbers 1-5 • To recognise numbers 1-10 • Consolidate 2D shapes • Introduce 3D shapes • Consolidate sorting • Partition and combine numbers to 5 • Introduce Part/Part/Whole method • Weight using balance scales		• Subitise numbers to 10 • Capacity • Doubling and halving numbers to 10 • Introduce length and measure • Partitioning into equal groups • Adding 1 • Subtracting 1 • Number bonds to 10 • Introduce 10p coin and ways of making 10p using coins already introduced • Odd/Even numbers • Time – routines including yesterday, today, tomorrow, before, after		
Y1 Spring 1 (3 weeks)	**Y1 Spring 1 (3 weeks)**	**Y1 Sprong 2 (2 weeks)**	**Y1 Spring 2 (2 weeks)**	**Y1 Spring 2 (2 weeks)**
Place value	**Addition and subtraction**	**Place value**	**Length and height**	**Mass and volume**
• Count forwards and backwards and write numbers to 20 in numerals and words. • Tens and ones • Count one more and one less up to 20 • Compare and order groups of objects up to 20 < > = • Compare and order numbers up to 20.	• Add by counting on • Find and make number bonds • Add by making 10 • Subtraction- not crossing 10 • Subtraction- crossing 10 • Related number facts • Compare number sentences	• Numbers to 50 • Tens and ones • Represent numbers to 50 • One more one less • Compare objects and numbers within 50 • Order numbers within 50 • Count in two's and fives	• Compare lengths and heights • Measure lengths, including non-standard and standard measure	• Introduce weight and mass • Measure mass • Compare mass • Introduce capacity and volume • Measure capacity • Compare capacity

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Maths Long Term Plan

Summer term 13 weeks + 1 week of assessments (14 weeks)

<table>
<tr><th colspan="7">Year Rec/Y1</th></tr>
<tr><th colspan="2">Summer (13 weeks)</th><th colspan="3"></th><th colspan="2"></th></tr>
<tr><th colspan="2">Numbers to 20 Counting on and back Complex patterns</th><th colspan="3">Numerical patterns: - Doubling and halving - Sharing - Odd and even</th><th colspan="2">Measurement: - Length - Height - Distance - Weight - Capacity Time</th></tr>
<tr><td colspan="2">• Review numbers 1-10
• Recognise numbers 11-20
• Introduce concept of one 10
• Count forwards and backwards from different numbers
• Place value (one 10 and how many 1’s)
• Arrays</td><td colspan="3">• Double and halve numbers to 20
• Introduce = sign
• Identify odd and even numbers to 20</td><td colspan="2">• Measure using standard and non-standard units of length
• Identify times on a clock using o’clock and relate to events that happen during the day</td></tr>
<tr><th>Y1 Summer 1 (3 weeks)</th><th>Y1 Summer 1 (3 weeks)</th><th>Y1 Summer 1/2 (3 weeks)</th><th>Y1 Summer 2 (1 week)</th><th>Y1 Summer 2 (1 week)</th><th>Y1 Summer 2 (1 week)</th><th>Y1 Summer 2 (1 week)</th></tr>
<tr><th>Place value (within 50)</th><th>Measurement</th><th>Multiplication</th><th>Fractions</th><th>Geometry</th><th>Money</th><th>Time</th></tr>
<tr><td>• Numbers to 50
• Tens and ones
• Represent numbers to 50
• One more one less
• Compare objects and numbers within 50
• Order numbers within 50
• Count in two’s and fives</td><td>• Compare lengths and heights
• Measure lengths, including non-standard and standard measure

• Introduce weight and mass
• Measure mass
• Compare mass
• Introduce capacity and volume
• Measure capacity
• Compare capacity</td><td>• Count in tens
• Make equal groups
• Add equal groups
• Make arrays
• Make doubles
• Make equal groups-grouping and sharing</td><td>• Find a half
• Find a quarter</td><td>• Describe turns
• Describe positions</td><td>• Recognising coins
• Recognising notes
• Counting coins</td><td>• Before and after
• Dates
• Time to the hour
• Time to the half hour
• Writing time
• Comparing time</td></tr>
</table>

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Maths Long Term Plan

Autumn term 12 weeks + 1 week of assessments (13 weeks)

Year 2/3		
Y2 Autumn 1 (4 weeks)	**Y2 Autumn 1/2 (5 weeks)**	**Y2 Autumn 2 (3 weeks)**
Place value	**Addition and subtraction**	**Shape**
• Counting forward and backwards within 20, then 50. • Understanding tens and ones within 20, then 50. • Compare numbers within 50. • Count objects to 100 and read / write numerals and words. • Represent numbers to 100 using a part-part-whole model and place value chart. • Compare number and objects. • Order objects and numbers. • Count in 2s. 5s, 10s and 3s.	• Fact families – addition and subtraction bonds to 20 • Check calculations • Compare number sentences • Related facts • Bonds to 100 (tens) • Add and subtract 1s • 10 more and 10 less • Add and subtract 10s • Add by making 10 • Add a 2-digit and 1-digit number – crossing ten • Subtraction - crossing 10 • Subtract a 1-digit number from a 2-digit number – crossing ten • Add two 2-digit numbers – not crossing ten/crossing ten – add ones and add tens • Subtract a 2-digit number from a 2-digit number – not crossing ten/crossing ten • Find and make number bonds • Bonds to 100 (tens and ones) • Add three 1-digit numbers	• Recognise 2D and 3D shapes • Count sides on 2D shapes • Count vertices on 2D shapes • Draw 2D shapes • Lines of symmetry • Lines of symmetry – draw the whole • Sort 2D shapes • Make patterns with 2D shapes • Count face, edges and vertices on 3D shapes • Sort 3D shapes • Make patterns with 3D shapes
Y3 Autumn 1 (4 weeks)	**Y3 Autumn 1/2 (5 weeks)**	**Y3 Autumn 2 (3 weeks)**
Place value	**Addition and subtraction**	**Shape**
• Represent numbers to 100. • Understand the place value of tens and ones. • Understand the place value of hundreds. • Represent numbers to 1000. • Partition numbers into hundreds, tens and ones. • Represent numbers on a number line to 1000, • Find 1, 10 and 100 more and one less than a given number. • Compare objects / numbers to 1000. • Order numbers. • Count in 50s.	• Add and subtract multiples of 100. • Add and subtract 1s. • Add and subtract 3 digit and 1 digit numbers – not crossing 10. • Add 2 digit and 1 digit numbers – crossing 10. • Add 3 digit numbers and 1 digit numbers – crossing 10. • Subtract 1 digit number from 2 digit number – crossing 10. • Subtract 1 digit number from 3 digits – crossing 10. • Add and subtract 3 digit and 2 digit numbers – not crossing 100/crossing 100 • Subtract a 2 digit number from 3 digit number – crossing 100. • Add and subtract 100s. • Spot patterns. • Add ones and tens. • Subtract 2 digit numbers from 2 digit numbers – crossing 10	• Turns and angles. • Right angles in shapes. • Compare angles. • Draw and measure straight lines accurately. • Horizontal and vertical. • Parallel and perpendicular. • Recognise and describe 2D shapes. • Recognise and describe 3D shapes. • Make 3D shapes.

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Maths Long Term Plan

Spring term 12 weeks + 1 week of assessments (13 weeks)

Year 2/3			
Y2 Spring 1 (5 weeks)	**Y2 Spring 1 (2 weeks)**	**Y2 Spring 2 (3 weeks)**	**Y2 Spring 2 (2 weeks)**
Multiplication and Division	**Position and Direction (2 weeks)**	**Fractions**	**Statistics**
• Make equal groups, Add equal groups • Make arrays • Multiplication sentences using the x symbol • Multiplication sentences from pictures • Use arrays • Make doubles • 2, 5, 10 times tables • Make equal groups – sharing • Make equal groups – grouping • Divide by 2, 5 and 10 • Odd and even numbers	• Describe position • Problem solving with position • Describing movement • Describing turns • Describing movement and turns • Making patterns with shapes	• Make equal parts • Recognise a half • Find a half • Recognise a quarter • Find a quarter • Recognise a third • Find a third • Unit fractions/Non-unit fractions • Equivalence of a half and 2 quarters • Find three quarters • Count in fractions • Problem solving with fractions	• Make tally charts • Draw pictograms (1-1) • Interpret pictograms (1-1) • Draw pictograms (2,5,10) • Interpret pictograms (2,5,10) • Block diagrams
Y3 Spring 1 (4 weeks)	**Y3 Spring 2 (3 weeks)**	**Y3 Spring 2 (3 weeks)**	**Y3 Spring 2 (2 weeks)**
Multiplication and Division (A)	**Multiplication and Division (B)**	**Fractions A**	**Statistics**
• Multiplication – equal groups. • Multiplication using the symbol. • Using arrays. • 2 times table. • 5 times table. • Make equal groups – sharing. • Make equal groups – grouping. • Divide by 2, 5 and 10 • Multiply by 3/ Divide by 3. • 3 times table. • Multiply by 4/Divide by 4. • 4 times table. • Multiply by 8/Divide by 8. • 8 times table.	• Consolidate 2, 4 and 8 times tables. • Comparing statements. • Related calculations. • Multiply 2 digits by 1 digit. • Divide 2 digits by 1 digit. • Scaling. • Listing possible combinations resulting from two groups of objects	• Make equal parts. • Recognise a half. • Find a half. • Recognise a quarter. • Find a quarter. • Recognise a third. • Find a third. • Unit fractions/ Non-unit fractions. • Equivalence of one half and two quarters. • Count in fractions. • Equivalent fractions. • Compare fractions. • Order fractions. • Add fractions. • Subtract fractions	• Make tally charts. • Draw pictograms. – 2, 5 and 10 times tables • Interpret pictograms. – 2, 5 and 10 times tables • Pictograms – including 3, 4 and 8 times tables • Bar charts. • Tables

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Maths Long Term Plan

Summer term 13 weeks + 1 week of assessments (14 weeks)

Year 2/3				
Y2 Summer 1 (3 weeks)	**Y2 Summer 1 (2 weeks)**	**Y2 Summer 1/2 (3 weeks)**	**Y2 Summer 2 (2 weeks)**	**Y2 Summer 2 (2 weeks)**
Time	**Money**	**Mass and Capacity**	**Length and height**	**Consolidation**
• O'clock and half past • Quarter past and quarter to • Telling time to 5 minutes • Writing time • Hours and days • Find durations of time • Compare durations of time	• Recognising coins and notes • Count money – pence • Count money – pounds (notes and coins) • Count money – notes and coins • Select money • Make the same amount • Compare money • Find the total • Find the difference • Find change • Two-step problems	• Introduce weight and mass • Measure mass • Compare mass • Measure mass in grams • Measure mass in kilograms • Introduce capacity and volume • Measure capacity • Compare volume • Millilitres and litres • Four operations with mass • Four operations with volume • Temperature	• Compare length and heights • Measure length (cm and m) • Compare lengths • Order lengths • Four operations with lengths • Problems solving with lengths	
Y3 Summer 1 (3 weeks)	**Y3 Summer 1 (2 weeks)**	**Y3 Summer 1/2 (3 weeks)**	**Y3 Summer 2 (3 weeks)**	**Y3 Summer 2 (2 weeks)**
Time	**Money**	**Mass and Capacity**	**Length and perimeter**	**Fractions B**
• Months and years. • Hours in a day. • Tell the time to 5 minutes. • Tell the time to the minute. • Use a.m. and p.m. • 24-hour clock. • Find durations. • Compare durations. • Find start and end times to the nearest minute. • Measure time in seconds	• Count money (pence). • Count money (pounds). • Understanding pounds and pence. • Converting pounds and pence. • Add money. • Subtract money. • Working out change.	• Measure mass in kilograms and grams. • Compare mass. • Add and subtract mass. • Measure capacity in litres and millilitres. • Compare capacity. • Add and subtract capacity.	• Measure length – introducing millimetres • Measure length- metres • Equivalent lengths – metres and centimetres • Equivalent lengths – millimetres and centimetres • Compare lengths • Add lengths • Subtract lengths • Measure perimeter • Calculate perimeter	• Equivalent fractions. • Compare fractions. • Order fractions. • Add fractions. • Subtract fractions.

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Maths Long Term Plan

Autumn term 12 weeks + 1 week of assessments (13 weeks)

Year 4/5/6 Autumn		
Y4 Autumn 1 (4 weeks)	**Y4 Autumn 1/2 (4 weeks)**	**Y4 Autumn 2 (4 weeks)**
Place value	**Addition and subtraction**	**Multiplication and division**
• Represent numbers to 1000. • Partition hundreds, tens and ones. • Represent numbers to 1000 on a number line. • Round numbers to the nearest 10 and 100. • Count in one 1000s. • Partition numbers into thousands, hundreds, tens and ones. • Represent numbers on a number line to 10,000. • Find 1, 10 and 100 more or less. • Find 1000 more or less. • Compare and order numbers. • Round to the nearest 1000. • Count in 25s. • Understand negative numbers. • Use Roman numerals to 100	• Add and subtract 1s, 10s, 100s and 1,000s • Add two 3-digit numbers - not crossing 10 or 100 • Add two 4-digit numbers – no exchange • Add two 3-digit numbers - crossing 10 or 100 • Add two 4-digit numbers – one exchange • Add two 4-digit numbers – more than one exchange • Subtract a 3-digit number from a 3-digit number – no exchange • Subtract two 4-digit numbers – no exchange • Subtract a 3-digit number from a 3-digit number - exchange • Subtract two 4-digit numbers – one exchange • Subtract two 4-digit numbers – more than one exchange • Efficient subtraction • Estimate answers • Checking strategies	• Multiply by 10 • Multiply by 100 • Divide by 10 • Divide by 100 • Multiply by 1 and 0 • Divide by 1 and itself • Multiply and divide by 3 • The 3 times-table • Multiply and divide by 6 • 6 times table and division facts • Multiply and divide by 9 • 9 times table and division facts • Multiply and divide by 7 • 7 times table and division facts
Y5 Autumn 1 (4 weeks)	**Y5 Autumn 1/2 (4 weeks)**	**Y5 Autumn 2 (4 weeks)**
Place value	**Addition and subtraction**	**Multiplication and division**
• Understand the place value of 1s, 10s, 100s and 1000s. • Represent numbers to 10,000. • Round to the nearest 10 and 100. • Round to the nearest 1000. • Understand the place value of numbers to 100,000 • Compare and order numbers to 100,000. • Round numbers within 100,000. • Understand the place value of numbers to a million. • Count in numbers to 100,000. • Compare and order numbers to 1 million. • Round numbers within 1 million. • Understand negative numbers. • Write and read Roman numerals to 1000.	• Add two 4-digit numbers-one exchange • Add two 4-digit numbers –more than one exchange • Add whole numbers with more than 4 digits (column method) • Subtract two 4-digit numbers-one exchange • Subtract two 4-digit numbers –more than one exchange • Subtract whole numbers with more than 4 digits (column method) • Round to estimate and approximate • Inverse operations (addition and subtraction) • Multi-step addition and subtraction problems.	• Multiples • Factors • Common factors • Prime numbers • Square numbers • Cube numbers • Multiply by 10 • Multiply by 100 • Multiply by 10,100 and 1000 • Divide by 10 • Divide by 100 • Divide by 10, 100, 1000 • Multiples of 10, 100 and 1000

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Maths Long Term Plan

Y6 Autumn 1 (4 weeks)	Y6 Autumn 1/2 (6 weeks)
Place value	**Addition/subtraction/Multiplication/Division**
• Numbers to 10,000 • Numbers to 100,000 • Numbers to 1,000,000 • Numbers to 10 million • Compare and order any number • Round numbers to 10, 100 and 1,000 • Round any number • Negative numbers	• Add / subtract whole numbers with more than 4 digits • Use inverse operations (addition and subtraction) • Solve multi-step addition and subtraction problems • Understand short multiplication written methods • Understand long multiplication written methods • Understand short division • Understand long division • Find factors of numbers • Find common factors and multiples • Find prime numbers to 100 • Find square and cube numbers • Use mental calculations and estimation • Reason from known facts

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Spring term 12 weeks + 1 week of assessments (13 weeks)

Year 4/5/6 Spring				
Y4 Spring 1 (4 weeks)	**Y4 Spring 1 (1 week)**	**Y4 Spring 1 (1 week)**	**Y4 Spring 2 (3 weeks)**	**Y4 Spring 2 (2 weeks)**
Fractions	**Area**	**Statistics**	**Decimals A**	**Decimals B**
• Unit and non-unit fractions • What is a fraction? • Tenths • Count in tenths • Equivalent fractions • Fractions greater than 1 • Count in fractions • Add fractions • Add 2 or more fractions • Subtract fractions • Subtract 2 fractions • Subtract from whole amounts • Fractions of a set of objects • Calculate fractions of a quantity • Problem solving – calculate quantities	• What is area? • Counting squares • Making shapes • Comparing area	• Interpret charts • Comparison, sum & difference • Introducing line graphs • Line graphs	• Recognise tenths and hundredths • Tenths as decimals • Tenths on a place value grid • Tenths on a number line • Divide 1-digit by 10 • Divide 2-digits by 10 • Hundredths • Hundredths as decimals • Hundredths on a place value grid • Divide 1 or 2-digits by 100	• Make a whole • Write decimals • Compare decimals • Order decimals • Round decimals • Halves and quarters

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Year 5 Spring 1 (4 weeks)	Year 5 spring 1 (2 weeks)	Y5 Spring 2 (3 weeks)	Y5 Spring 2 (3 weeks)
Fractions A	**Fractions B**	**Decimals and percentages**	**Decimals and ratios**
• What is a fraction? • Equivalent fractions • Fractions greater than 1 • Improper fractions to mixed numbers • Mixed numbers to improper fractions • Number sequences • Compare and order fractions less than 1 • Compare and order fractions greater than 1 • Add and subtract fractions • Add fractions within 1 • Add 3 or more fractions • Add fractions • Add mixed numbers • Subtract fractions • Subtract mixed numbers • Subtract – breaking the whole • Subtract 2 mixed numbers	• Multiply unit fractions by an integer • Multiply non-unit fractions by an integer • Multiply mixed numbers by integers • Calculate fractions of a quantity • Fraction of an amount • Using fractions as operators	• Decimals up to 2 d.p. • Decimals as fractions • Understand thousandths • Thousandths as decimals • Rounding decimals • Order and compare decimals • Understand percentages • Percentages as fractions and decimals • Equivalent F.D.P.	• Adding decimals within 1 • Subtracting decimals within 1 • Complements to 1 • Adding decimals – crossing the whole • Adding decimals with the same number of decimal places • Subtracting decimals with the same number of decimal places • Adding decimals with a different number of decimal places • Subtracting decimals with a different number of decimal places • Adding and subtracting wholes and decimals • Decimal sequences • Multiplying decimals by 10, 100 and 1,000 • Dividing decimals by 10, 100 and 1,000

Y6 Spring 1 (4 weeks)	Y6 Spring 1 (1 week)	Y6 Spring 1 (2 weeks)	Y6 Spring 2 (2 weeks)	Y6 Spring 2 (2 weeks)
Fractions	**Perimeter, area and volume**	**Statistics**	**Decimals**	**Decimals, percentage and ratio**
• Recognise equivalent fractions • Simplify fractions • Change improper fractions to mixed numbers and vice versa • Order fractions on a number line • Compare and order fractions • Add and subtract fractions • Add and subtract mixed numbers • Multiply fractions by integers • Divide fractions by integers • Find fractions of an amount • Find the whole, given a fraction of an amount.	• Find shapes with the same area • Area and perimeter of rectilinear shapes • Find the area of a triangle • Find the area of a parallelogram • Find volume by counting cubes • Find the volume of a cuboid	• Read and interpret line graphs • Draw line graphs and use to solve problems • Name the parts of a circle • Read, interpret and draw pie charts • Calculate the mean	• Decimals to 2 decimal places • Decimals to 3 decimal places • Multiply / Divide by 10, 100 and 1000 • Multiply / divide decimals by integers	• Decimals as fractions • Fractions to decimals • Understand percentages • Changing fractions to percentages • Equivalent fractions, decimals and percentages • Order fractions, decimals and percentages • Find percentages of amounts

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Maths Long Term Plan

Summer term 12 weeks + 1 week of assessments (13 weeks)

Year 4/5/6					
Y4 Summer 1 (3 weeks)	**Y4 Summer 1 (1 week)**	**Y4 Summer 1 (2 weeks)**	**Y4 Summer 2 (2 weeks)**	**Y4 Summer 2 (2 weeks)**	**Y4 Summer 2 (2 weeks)**
Shape	**Position and direction**	**Money**	**Time**	**Length and perimeter**	**Four operations**
• Measuring angles in degrees • Measuring with a protractor • Drawing lines and angles accurately • Calculating angles on a straight line • Calculating angles around a point • Calculating lengths and angles in shapes • Regular and irregular polygons • Reasoning about 3-D shape	• Position in the first quadrant • Reflection • Reflection with coordinates • Translation • Translation with coordinates	• Pounds and pence • Ordering money • Estimating money • Four operations	• Hours, minutes and seconds • Years, months, weeks and days • Analogue to digital – 12 hour • Analogue to digital – 24 hour	• Equivalent lengths - m and cm • Equivalent lengths - mm and cm • Kilometres • Add lengths • Subtract lengths • Measure perimeter • Perimeter on a grid • Perimeter of a rectangle • Perimeter of rectilinear shapes	Consolidation
Y5 Summer 1 (3 weeks)	**Y5 Summer 1 (1 week)**	**Y5 Summer 1 (2 weeks)**	**Y5 Summer (2 weeks)**	**Y5 Summer 2 (1 week)**	**Y4 Summer 2 (1 week)**
Shape	**Position and direction**	**Statistics**	**Converting units**	**Negative numbers**	**Volume**
• Measuring angles in degrees • Measuring with a protractor • Drawing lines and angles accurately • Calculating angles on a straight line • Calculating angles around a point • Calculating lengths and angles in shapes • Regular and irregular polygons • Reasoning about 3-D shap	• Position in the first quadrant • Reflection • Reflection with coordinates • Translation • Translation with coordinates	• Interpret charts • Comparison, sum and difference • Introduce line graphs • Read and interpret line graphs • Draw line graphs • Use line graphs to solve problems • Read and interpret tables • Two-way tables • Timetables	• Kilograms and kilometres • Milligrams and millilitres • Metric units • Imperial units • Converting units of time • Timetables	• Understand negative numbers • Count through 0 in 1s • Count through 0 in 10s • Compare and order negative numbers • Find the difference	• What is volume? • Compare volume • Estimate volume • Estimate capacity

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Y6 Summer 1 (3 weeks)	Y6 Summer 1 (1 week)	Y6 Summer 1 (2 weeks)	Y6 Summer 2 (2 weeks)	Y6 Summer 2 (4 weeks)
Shape	**Position and direction**	**Algebra**	**Ratio**	**Consolidation and SATs**
• Measure angles with a protractor • Calculate missing angles • Vertically opposite angles • Angles in a triangle • Angles in quadrilateral • Angles in regular polygons • Draw shapes accurately • Draw nets of shapes	• Identify co-ordinates in the first quadrant • Identify co-ordinates in all four quadrants • Translations • Reflections	• Find a rule (function machines) • Forming expressions • Substitutions • Formulae • Forming equations • Solving one and two-step equations • Find pairs of values • Enumerate possibilities	• Understanding the language of ratio • Calculating ratio • Using scale factors • Solve ratio and proportion problems	