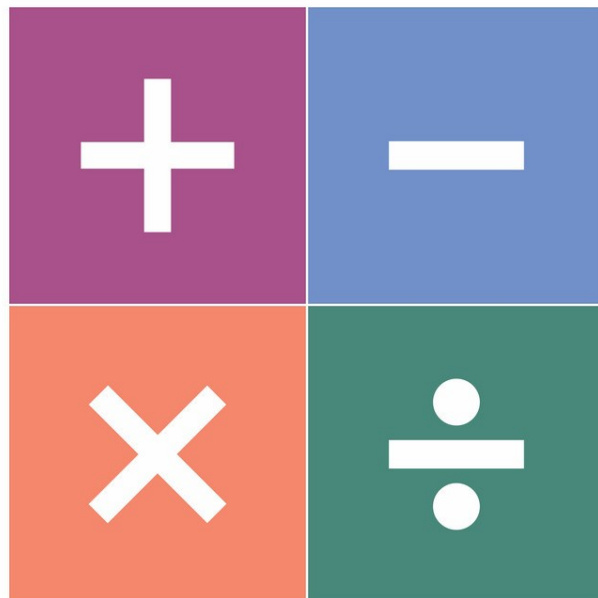




St. George's

Church of England Primary School



Maths Curriculum

Our Maths Intent

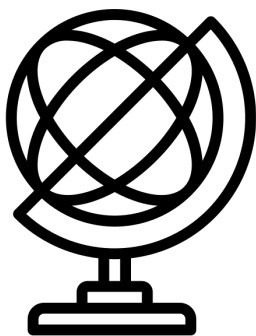
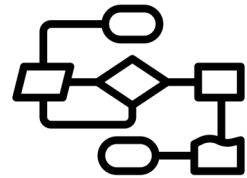
To think like a mathematician...



At St. Georges, our aim is to develop lifelong mathematicians who are curious and creative. With a firm foundation of mathematical fluency, we want pupils to recognise the importance of having a deep understanding which is achieved by investigating and exploring mathematical concepts. Fostering a growth mathematical mind-set is key to this as pupils become resilient and resourceful in their mathematical journey.

Our mathematics scheme of work encourages:

- factual, conceptual and procedural fluency through a concrete, pictorial and abstract approach.
- Fluent knowledge and understanding of the number system with the ability to rapidly recall number facts
- Efficient performance of written and mental calculations.
- Solving real life problems
- Reasoning about mathematical concepts and making connections.
- Children to think independently when faced with



Our scheme of work enables pupils to meet the end of key stage attainment targets in the National curriculum. The aims also align with those in the National curriculum.

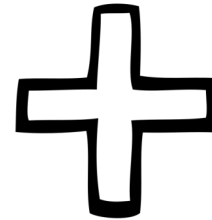
Maths Knowledge and Skills

Our scheme of work has a clear progression of skills and knowledge within the three attainment targets for Maths in the National Curriculum.

Our Progression of skills and knowledge shows the skills taught within each year group and how these develop to ensure that attainment targets are securely met by the end of each key stage.

Become fluent

At St Georges we aim for children to 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



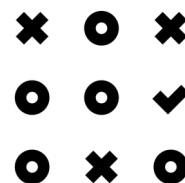
Reason mathematically

We aim for children to be able to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language



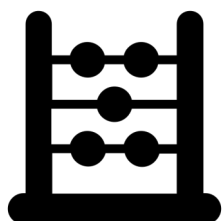
Solve problems

At St Georges we aim for children to be able to solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking



Maths Knowledge and Skills

We have designed our scheme of work so that it is a spiral curriculum, with essential knowledge and skills revisited with increasing complexity, allowing pupils to revise and build on their previous learning.



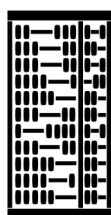
Representation and structure

Teachers carefully select representations of mathematics to expose mathematical structure. The intention is to support pupils in 'seeing' the mathematics, rather than using the representation as a tool to 'do' the mathematics. These representations become mental images that students can use to think about mathematics, supporting them to achieve a deep understanding of mathematical structures and connections.



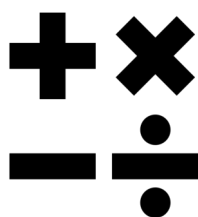
Mathematical thinking

Mathematical thinking is central to how pupils learn mathematics and includes looking for patterns and relationships, making connections, conjecturing, reasoning, and generalising. Pupils should actively engage in mathematical thinking in all lessons, communicating their ideas using precise mathematical language.



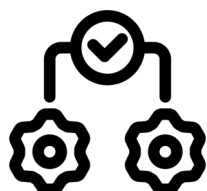
Variation

The purpose of variation is to draw closer attention to a key feature of a mathematical concept or structure through varying some elements while keeping others constant.



Fluency

Efficient, accurate recall of key number facts and procedures is essential for fluency, freeing pupils' minds to think deeply about concepts and problems, but fluency demands more than this. It requires pupils to have the flexibility to move between different contexts and representations of mathematics, to recognise relationships and make connections, and to choose appropriate



Coherence

Teaching is designed to enable a coherent learning progression through the curriculum, providing access for all pupils to develop a deep and connected understanding of mathematics that they can apply in a range of contexts.

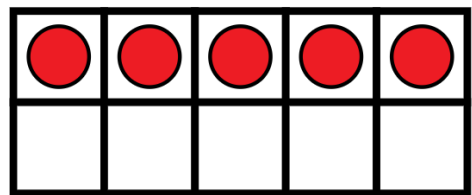
Maths Knowledge and Skills

Our scheme of work ensures pupils are ready to study Maths at Key Stage 3 with a range of skills and knowledge.

Concrete

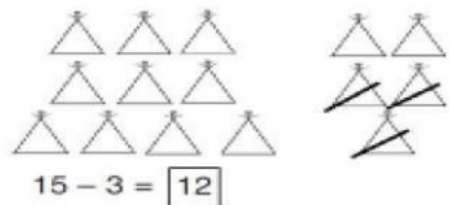
As part of the CPA approach, new concepts are introduced through the use of physical objects or practical equipment. These can be physically handled, enabling children to explore different mathematical concepts. These are sometimes referred to as maths manipulatives and can include ordinary household items such as straws or dice, or specific mathematical resources such as dienes or numicon.

The abstract nature of maths can be confusing for children, but through the use of concrete materials they are able to 'see' and make sense of what is actually happening.



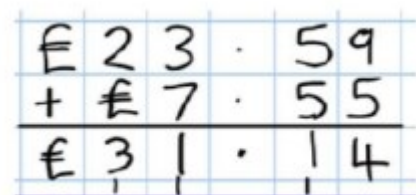
Pictorial

Once children are confident with a concept using concrete resources, they progress to drawing pictorial representations or quick sketches of the objects. By doing this, they are no longer manipulating the physical resources, but still benefit from the visual support the resources provide.



Abstract

Once children have a secure understanding of the concept through the use of concrete resources and visual images, they are then able to move on to the abstract stage. Here, children are using abstract symbols to model problems – usually numerals. To be able to access this stage effectively, children need access to the previous two stages alongside it.



Maths Knowledge and Skills Progression

The Maths Progression of skills and knowledge gives an overview of the skills and knowledge covered in each phase and strand and how these skills are developed in order to enable pupils to reach the end of key stage outcomes outlined in the National curriculum. Within each key stage, knowledge is often introduced at the start of the key stage so that there is time for that knowledge to be revisited and applied in later years which is why knowledge accumulation may look heavier in some year groups than others.

	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	Unit 16	Unit 17	Unit 18		
(EYF5) Reception Maths Strand	Number and place value	Number-Addition and subtraction	Number and place value	Number-Addition and subtraction	Measurement - Time	Number - Addition and subtraction	Number and place value	Number and place value	Number - Addition and subtraction	Number - Addition and subtraction	Geometry - Properties of shape	Geometry - Properties of shape	Number-Addition and subtraction	Number and place value	Number - Multiplication and division	Number and place value				
New key vocabulary	1, 2, 3, 4, 5, one, two, three, four, five, number, count, forwards, backwards, how many, total, altogether, five frame,	sort, group, describe, objects more than, same, different, odd/one out	more, fewer, same, different, represent, match, compare, equal, less than, fewer than, greater than, equal amount	none, zero, how many, first, then, now, one less, one more, order, fewer, take away, add, altogether,	first, next, later, then, before, after, time, clock, o'clock	parts, whole, part-whole model, how many, count, counting, more than, same, different	six, seven, eight, nine, ten, 6, 7, 8, 9, 10, ten frame, count, how many, total, altogether, count forwards, count backwards, same, different, odd one out, more, fewer, collections, group, dice, method	more, fewer/least, greater/greatest, smaller/smallest, go, larger/largest, taller/highest, shorter/shortest, compare, how many/how many more, different/differ, equal	count, part, whole, altogether, how many, fewer, more than, less than, each, ten frame, part, bead string, missing number, size, more, one less, add, number bond to 10	group, how many more, fewer, more than, less than, each, ten frame, part-whole model, whole, part, bead string, missing number, size, more, one less, add, number bond to 10	in, on, below, under, above, in front, behind, next to, up, down, across, forwards, backwards, left, right, roll, stop, curved, straight, round, corners, face, edge, sides, square, rectangle, circle, triangle, sphere, cube, cuboid, cylinder, cone, big, little, flat, round,	next, continue, repeat, core, cube, round, pattern, size, action, elements, bigger, smaller, same, different, tall, short, stripes, squares	jump forwards, jump back, more, less, before, after, add, take away, forwards, backwards, direction, moves, start, stop, first, then, now, finish, altogether, total, number track/line, represent half, fair share, equal, unequal, odd, even	eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, represent, show, more, less, fewer, how many, altogether, largest, smallest, order, compare	double, equal groups, double facts, doubling, more, continue, pattern, next, predict, groups, more, fewer, less, amount, five frame, counters, dice, domino, number track/line, represent half, fair share, equal, unequal, odd, even	large, larger, largest, bigger, small, smaller, heavier, heaviest, light, lighter, lightest, equal, balanced, the same, balance scales, weigh, weight, check, estimate, predict, check, measure, compare, order				
Content	Counting to 5 <i>Show interest, curiosity in number and offer comments and ask questions</i>	Sorting into two groups- exploring everyday objects	Compare groups within 5 (identical and non-identical objects) <i>Use requisite - count on and back and add and sub single digit numbers</i>	Change within 5 - one more / one less	All about my day - using everyday language to discuss time	Number bonds to 5 - introduce the part-whole model <i>Use requisite - count on and back to find an answer and add and sub single digit numbers</i>	Counting to 10 and counting to numbers within 10 Place numbers in order	Compare numbers to 10	Addition to 10 - combine two groups to form a whole	Number bonds to 10 Use a ten frame The part-whole model to 10 <i>Use requisite - count on and back to find an answer and add and</i>	Shapes: awareness 2D The part-whole model to 10 <i>Use requisite - count on and back to find an answer and add and</i>	Make simple patterns Explore more complex patterns	Adding by counting on Taking away by counting back	Counting to 20 Place numbers in order	Doubling Halving Sharing Odd and even	<u>Length</u> , height and distance Weight Volume and capacity Everyday language to talk about the above				

Click here to view the progression

Our National curriculum mapping document shows the National curriculum attainment targets that pupils work towards in our units of work, identifying which unit gives coverage of each target.

Strand 1	Unit	Lesson number	Lesson title	NC Objective 1	NC Objective 2	NC Objective 3
Number - number and place value	Unit 1	Numbers to 100	1	Counting objects to 100	Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s (year 1)	
Number - number and place value	Unit 1	Numbers to 100	2	Representing numbers to 100	Identify, represent and estimate numbers using different representations, including the number line	
Number - number and place value	Unit 1	Numbers to 100	3	Tens and ones (1)	Recognise the place value of each digit in a 2-digit number (10s, 1s)	Identify, represent and estimate numbers using different representations, including the number line
Number - number and place value	Unit 1	Numbers to 100	4	Tens and ones (2)	Recognise the place value of each digit in a 2-digit number (10s, 1s)	Identify, represent and estimate numbers using different representations, including the number line

Click here to view the National Curriculum Mapping

Maths Overview

	Autumn	Spring	Summer
1	<ul style="list-style-type: none"> ⇒ Numbers to 10 ⇒ Part Whole within 10 ⇒ Addition and subtraction within 10 ⇒ 2D and 3D shapes ⇒ Numbers to 20 	<ul style="list-style-type: none"> ⇒ Addition within 20 ⇒ Subtraction within 20 ⇒ Numbers to 50 ⇒ Introducing length and height ⇒ Introducing weight and volume 	<ul style="list-style-type: none"> ⇒ Multiplication ⇒ Division ⇒ Halves and Quarters ⇒ Position and direction Numbers to 100 ⇒ Time ⇒ Money
2	<ul style="list-style-type: none"> ⇒ Numbers to 100 ⇒ Addition and Subtraction 1 ⇒ Addition and Subtraction 2 ⇒ Money ⇒ Multiplication and Division 	<ul style="list-style-type: none"> ⇒ Multiplication and Division ⇒ Statistics ⇒ Length and Height ⇒ Properties of Shapes ⇒ Fractions 	<ul style="list-style-type: none"> ⇒ Position and Direction ⇒ Problem solving and efficient methods ⇒ Time ⇒ Weight, volume and temperature
3	<ul style="list-style-type: none"> ⇒ Place Value within 1,000 ⇒ Addition and Subtraction ⇒ Multiplication and Division 	<ul style="list-style-type: none"> ⇒ Multiplication and Division ⇒ Money ⇒ Statistics ⇒ Length ⇒ Fractions 	<ul style="list-style-type: none"> ⇒ Fractions ⇒ Time ⇒ Angles and Properties of Shapes ⇒ Mass ⇒ Capacity

Maths Overview

	Autumn	Spring	Summer
4	<ul style="list-style-type: none"> ⇒ Number and place value ⇒ Addition and subtraction ⇒ Properties of shapes ⇒ Multiplication and division ⇒ Measurement- conversions cm-m- km Algebra 	<ul style="list-style-type: none"> ⇒ Measurement- area, perimeter, time ⇒ Fractions and Decimals- add, subtract, compare, tenths, hundredths, rounding, converting, equivalent, number problems 	<ul style="list-style-type: none"> ⇒ Measurement- Money, capacity ⇒ Position, direction and movement including angles ⇒ Statistics ⇒ Properties of shapes
5	<ul style="list-style-type: none"> ⇒ Place value within 100,000 ⇒ Place value within 1,000,000 ⇒ Addition and subtraction ⇒ Graphs and tables ⇒ Multiplication and division (1) ⇒ Measure - area and perimeter 	<ul style="list-style-type: none"> ⇒ Multiplication and division (2) ⇒ Fractions (1) ⇒ Fractions (2) ⇒ Fractions (3) ⇒ Decimals and percentages 	<ul style="list-style-type: none"> ⇒ Decimals ⇒ Geometry - properties of shapes (1) ⇒ Geometry - properties of shapes (2) ⇒ Geometry - position and direction ⇒ Measure - converting units ⇒ Measure - volume and capacity
6	<ul style="list-style-type: none"> ⇒ Place Value within 10,000,000 ⇒ Four operations ⇒ Fractions ⇒ Geometry – position and direction 	<ul style="list-style-type: none"> ⇒ SATS Revision ⇒ Decimals ⇒ Percentages ⇒ Measure – imperial and metric ⇒ Measure – perimeter, area and volume Ratio and proportion 	<ul style="list-style-type: none"> ⇒ Geometry – properties of shapes ⇒ Problem solving ⇒ Statistics

Year 1 Milestones

Autumn	Spring	Summer
<p>Numbers to 10</p> <ul style="list-style-type: none"> ⇒ Sort and count objects to 10 ⇒ Count and write to 10 ⇒ Count backwards from 10 to 0 ⇒ Count one more and one less ⇒ Compare and order numbers ⇒ Learn to use a number line <p>Part-whole within 10</p> <ul style="list-style-type: none"> ⇒ Use the part-whole model ⇒ Write number sentences ⇒ Find different ways to make a number ⇒ Make number bonds ⇒ Compare number bonds <p>Addition and subtraction within 10</p> <ul style="list-style-type: none"> ⇒ Add parts to find the whole ⇒ Find a missing part ⇒ Practise using number bonds ⇒ Find fact families ⇒ Solve word problems <p>Addition and subtraction within 10 (2)</p> <ul style="list-style-type: none"> ⇒ Take away to find how many are left ⇒ Subtract by breaking the whole into parts ⇒ Discover related number facts ⇒ Comparing additions and subtractions ⇒ Find the difference ⇒ Solve word problems <p>2D and 3D shapes</p> <ul style="list-style-type: none"> ⇒ Name 3D shapes ⇒ Name 2D shapes ⇒ Make patterns with shapes <p>Numbers to 20</p> <ul style="list-style-type: none"> ⇒ Count using tens and ones ⇒ Count one more and one less ⇒ Compare numbers of objects ⇒ Compare and order numbers 	<p>Addition within 20</p> <ul style="list-style-type: none"> ⇒ Add by counting on ⇒ Practise adding ones to help with adding numbers to 20 ⇒ Use number bonds to 10 to help us with numbers bonds to 20 ⇒ Solve word problems <p>Subtraction within 20</p> <ul style="list-style-type: none"> ⇒ Subtract tens and ones ⇒ Learn how to cross a 10 when subtracting ⇒ Compare additions and subtractions ⇒ Solve word and picture problems <p>Numbers to 50</p> <ul style="list-style-type: none"> ⇒ Count up to 50 ⇒ Compare numbers to 50 ⇒ Order numbers ⇒ Count in 2s and 5s ⇒ Solve word and picture problems <p>Introducing length and height</p> <ul style="list-style-type: none"> ⇒ Compare lengths and heights of objects ⇒ Use non-standard units to measure objects ⇒ Measure with a ruler ⇒ Solve word problems about length <p>Introducing weight and volume</p> <ul style="list-style-type: none"> ⇒ Compare the weight of objects ⇒ Weigh objects ⇒ Compare the capacity of objects ⇒ Measure capacity ⇒ Solve word problems about weight and capacity 	<p>Multiplication</p> <ul style="list-style-type: none"> ⇒ Count in 10s, 5s and 2s ⇒ Make and add equal groups ⇒ Make arrays ⇒ Make doubles ⇒ Solve word problems <p>Division</p> <ul style="list-style-type: none"> ⇒ Make equal groups ⇒ Share amounts equally ⇒ Solve word problems <p>Halves and quarters</p> <ul style="list-style-type: none"> ⇒ Find half of a shape or object ⇒ Share equally ⇒ Find a quarter of a shape or object ⇒ Solve word problems about halves and quarters <p>Position and direction</p> <ul style="list-style-type: none"> ⇒ Describe turns ⇒ Use the words left and right ⇒ Say if something is at the top, middle or bottom <p>Numbers to 100</p> <ul style="list-style-type: none"> ⇒ Count in tens ⇒ Learn how to use a 100 square ⇒ Use tens and ones to make larger numbers ⇒ Say which number is larger and smaller ⇒ Find numbers which add to 100 <p>Time</p> <ul style="list-style-type: none"> ⇒ Say if things happen before or after ⇒ Use a calendar ⇒ Tell time to the hour and the half hour ⇒ Compare time ⇒ Solve time word problems <p>Money</p> <ul style="list-style-type: none"> ⇒ Learn about coins ⇒ Learn about notes ⇒ Count in 1s, 2s, 5s and 10s using coins

Year 2 Milestones

Autumn	Spring	Summer
<p>Numbers to 100</p> <ul style="list-style-type: none"> ⇒ Count numbers to 100 ⇒ Use different ways to show numbers to 100 ⇒ Use place value grids to make and compare numbers ⇒ Count in 10s ⇒ Compare and order numbers to 100 ⇒ Count in 2s and 5s <p>Addition and subtraction</p> <ul style="list-style-type: none"> ⇒ Use related number facts ⇒ Compare number sentences ⇒ Make number bonds to 100 ⇒ Add and subtract ones and tens ⇒ Add a 2-digit and a 1-digit number ⇒ Subtract a 1-digit number from a 2-digit number <p>Addition and subtraction (2)</p> <ul style="list-style-type: none"> ⇒ Add two 2-digit numbers ⇒ Subtract 2-digit numbers ⇒ Add three 1-digit numbers ⇒ Solve word problems <p>Money</p> <ul style="list-style-type: none"> ⇒ Count coins and notes ⇒ Compare different amounts of money ⇒ Find different ways to make the same amount ⇒ Work out the amount of change ⇒ Solve two-step problems involving money <p>Multiplication and division</p> <ul style="list-style-type: none"> ⇒ Decide if groups are equal ⇒ Form multiplication sentences ⇒ Use arrays ⇒ Practise the 2, 5 and 10 times-tables ⇒ Solve multiplication word problems 	<p>Multiplication and division (2)</p> <ul style="list-style-type: none"> ⇒ Divide by 2 ⇒ Learn about odd and even numbers ⇒ Divide by 5 and 10 ⇒ Divide by grouping and by sharing ⇒ Use related multiplication facts to solve division problems <p>Statistics</p> <ul style="list-style-type: none"> ⇒ Make tally charts ⇒ Use pictograms ⇒ Use block diagrams ⇒ Solve word problems <p>Length and height</p> <ul style="list-style-type: none"> ⇒ Measure objects in centimetres and metres ⇒ Compare two lengths ⇒ Put lengths in order ⇒ Solve word problems about length <p>Properties of shapes</p> <ul style="list-style-type: none"> ⇒ Recognise 2D and 3D shapes ⇒ Count the sides and vertices on 2D shapes ⇒ Learn about symmetry ⇒ Count the faces, edges and vertices on 3D shapes ⇒ Sort 2D and 3D shapes <p>Fractions</p> <ul style="list-style-type: none"> ⇒ Learn about the whole and equal parts ⇒ Recognise and find a half ⇒ Recognise and find a quarter ⇒ Learn about unit fractions ⇒ Count in halves and quarters 	<p>Position and direction</p> <ul style="list-style-type: none"> ⇒ Describe movement ⇒ Describe turns ⇒ Make patterns by turning shapes <p>Problem solving and efficient methods</p> <ul style="list-style-type: none"> ⇒ Compare ways of calculating ⇒ Use mental addition and subtraction ⇒ Look for the most efficient way to solve a problem ⇒ Use number facts to solve problems ⇒ Solve word problems using all four operations <p>Time</p> <ul style="list-style-type: none"> ⇒ Tell the time to the hour, the half hour and quarter hour ⇒ Tell the time to five minutes ⇒ Find start and end times ⇒ Find out how long something lasts ⇒ Compare amounts of time <p>Weight, volume and temperature</p> <ul style="list-style-type: none"> ⇒ Compare and measure mass ⇒ Compare and measure volume ⇒ Measure temperature ⇒ Read a thermometer

Year 3 Milestones

Autumn	Spring	Summer
<p>Place Value within 1,000</p> <ul style="list-style-type: none"> ⇒ Count in 100s ⇒ Partition a number in 100s, 10s and 1s ⇒ Find 100, 10 and 1 more or less ⇒ Compare and order numbers up to 1,000 ⇒ Count in 50s <p>Addition and subtraction</p> <ul style="list-style-type: none"> ⇒ Add 1s and 10s to 3-digit numbers ⇒ Subtract 1s and 10s from 3-digit numbers ⇒ Add and subtract 3-digit and 2-digit numbers ⇒ Learn when to exchange 1s, 10s and 100s ⇒ Add and subtract using mental and written methods <p>Addition and subtraction (2)</p> <ul style="list-style-type: none"> ⇒ Add and subtract 3-digit numbers ⇒ Decide if we need to exchange ⇒ Exchange across more than one column ⇒ Learn how to check our answers in different ways ⇒ Use bar models to solve 1- and 2-step problems <p>Multiplication and division</p> <ul style="list-style-type: none"> ⇒ Recognise when groups are equal and when they are not ⇒ Learn the 3, 4 and 8 times-tables ⇒ Find a simple remainder when a number is divided ⇒ Use a bar model to solve multiplication and division problems 	<p>Multiplication and division (2)</p> <ul style="list-style-type: none"> ⇒ Compare multiplication and division statements using inequality signs ⇒ Use known multiplication facts to solve other multiplication problems ⇒ Find multiplication and division fact families ⇒ Learn to multiply and divide by partitioning ⇒ Solve mixed multiplication and division problems including multi-step problems <p>Money</p> <ul style="list-style-type: none"> ⇒ Record money in £ and p ⇒ Convert money ⇒ Add and subtract amounts of money ⇒ Solve problems including ones that involve finding change <p>Statistics</p> <ul style="list-style-type: none"> ⇒ Present information in different ways ⇒ Use pictograms, bar charts and tables ⇒ Answer questions based on information that is presented in different ways <p>Length</p> <ul style="list-style-type: none"> ⇒ Measure lengths in millimetres, centimetres and metres ⇒ Compare lengths ⇒ Add and subtract lengths ⇒ Measure the perimeter of a shape ⇒ Learn about equivalent lengths <p>Fractions</p> <ul style="list-style-type: none"> ⇒ Make a whole with unit and non-unit fractions ⇒ Explore tenths as fractions ⇒ Understand fractions as numbers ⇒ Calculate fractions of a set of objects 	<p>Fractions (2)</p> <ul style="list-style-type: none"> ⇒ Find equivalent fractions ⇒ Compare fractions ⇒ Add and subtract fractions ⇒ Solve word problems about fractions and finding fractions of an amount <p>Time</p> <ul style="list-style-type: none"> ⇒ Learn about hours, days, months and years ⇒ Estimate times ⇒ Tell the time to the nearest minute ⇒ Calculate start and end times ⇒ Solve time problems <p>Angles and properties of shape</p> <ul style="list-style-type: none"> ⇒ Learn about turns ⇒ Learn what a right angle is ⇒ Understand and draw parallel and perpendicular lines ⇒ Identify and draw vertical and horizontal lines ⇒ Recognise and describe right angles and parallel and perpendicular lines in 2D shapes ⇒ Recognise, describe and construct 3D shapes <p>Mass</p> <ul style="list-style-type: none"> ⇒ Measure mass in kilograms and grams ⇒ Work out different intervals on a scale ⇒ Add, subtract and compare masses ⇒ Solve problems involving mass <p>Capacity</p> <ul style="list-style-type: none"> ⇒ Measure capacity in litres and millilitres ⇒ Convert between litres and millilitres ⇒ Compare and order capacities ⇒ Add and subtract capacities ⇒ Solve problems involving capacities

Year 4 Milestones

Autumn	Spring	Summer
<p>Place Value—4 digit numbers</p> <ul style="list-style-type: none"> ⇒ Round numbers to the nearest 10 or 100 Count in 1,000s ⇒ Represent 4-digit numbers ⇒ Use number lines ⇒ Learn about Roman numerals <p>Place Value—4 digit numbers (2)</p> <ul style="list-style-type: none"> ⇒ Find 1,000 more or less ⇒ Compare and order numbers to 10,000 ⇒ Round numbers to the nearest 1,000 ⇒ Count in 25s ⇒ Count back through 0 into negative numbers <p>Addition and subtraction</p> <ul style="list-style-type: none"> ⇒ Add and subtract 1s, 10s, 100s and 1,000s ⇒ Add and subtract two 4-digit numbers using the column method ⇒ Learn how to find and use equivalent difference, and other mental methods ⇒ Estimate answers to additions and subtractions ⇒ Learn how to check strategies and apply our knowledge <p>Measure—perimeter</p> <ul style="list-style-type: none"> ⇒ Convert between kilometres and metres ⇒ Find perimeters of shapes ⇒ Work out missing lengths ⇒ Find solutions involving perimeter <p>Multiplication and division</p> <ul style="list-style-type: none"> ⇒ Multiply by and divide multiples of 10 and 100 ⇒ Multiply and divide by 0 and 1 ⇒ Learn all of our times-tables from 1 to 12 ⇒ Understand related multiplication and division facts ⇒ Find solutions to multiplication and division word problems 	<p>Multiplication and division (2)</p> <ul style="list-style-type: none"> ⇒ Learn how to multiply a number using the written method ⇒ Learn how to multiply and divide numbers in our heads ⇒ Find the remainder when a number is divided ⇒ Use bar models and part-whole models to solve multiplication and division problems <p>Measure –area</p> <ul style="list-style-type: none"> ⇒ Learn what ‘area’ means ⇒ Find areas of shapes by counting squares ⇒ Draw shapes with different areas ⇒ Compare the area of different shapes <p>Fractions</p> <ul style="list-style-type: none"> ⇒ Find the links between tenths and hundredths ⇒ Identify equivalent fractions ⇒ Simplify fractions ⇒ Look at fractions that are greater than 1 <p>Fractions (2)</p> <ul style="list-style-type: none"> ⇒ Learn to add and subtract fractions with the same denominator ⇒ Learn to subtract a fraction from a whole number ⇒ Understand how to find a fraction of an amount <p>Decimals</p> <ul style="list-style-type: none"> ⇒ Learn about the decimal point, and tenth and hundredth columns ⇒ Explore tenths and hundredths as decimals ⇒ Understand how to divide 1- and 2-digit numbers by 10 and 100 ⇒ Complete calculations resulting in a decimal answer 	<p>Decimals (2)</p> <ul style="list-style-type: none"> ⇒ Work out what we need to make a whole ⇒ Write a decimal and represent it on a place value grid ⇒ Compare and order decimals ⇒ Round decimals to the nearest whole number ⇒ Learn the decimal equivalents of fractions such as $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ ⇒ Convert different units of measurement <p>Money</p> <ul style="list-style-type: none"> ⇒ Write money in pounds and pence, using a decimal point ⇒ Order, add and subtract amounts of money ⇒ Round money to the nearest 10p or nearest £1 ⇒ Find change ⇒ Solve simple word problems involving money <p>Time</p> <ul style="list-style-type: none"> ⇒ Convert between units of time ⇒ Write times in different ways ⇒ Compare times by converting units ⇒ Solve problems about units of time <p>Statistics</p> <ul style="list-style-type: none"> ⇒ Present data in pictograms, bar charts and tables ⇒ Explore line graphs ⇒ Solve problems based on data <p>Geometry—angles and 2D shapes</p> <ul style="list-style-type: none"> ⇒ Learn to recognise obtuse, acute and right angles ⇒ Understand regular and irregular shapes ⇒ Name and describe quadrilaterals and triangles ⇒ Identify lines of symmetry in shapes and patterns <p>Geometry—position and direction</p> <ul style="list-style-type: none"> ⇒ Use numbers to say where things are on a grid ⇒ Plot points on a grid ⇒ Use our knowledge of shapes to complete diagrams D ⇒ Describe movements on a grid

Year 5 Milestones

Autumn	Spring	Summer
<p>Place Value within 100,000</p> <ul style="list-style-type: none"> ⇒ Find the value of each digit in numbers to 100,000 ⇒ Partition numbers in different ways ⇒ Round numbers ⇒ Compare and order numbers ⇒ Represent numbers in different ways including Roman numerals <p>Place Value within 1,000,000</p> <ul style="list-style-type: none"> ⇒ Understand the value of any digit in numbers up to 1,000,000 ⇒ Compare and order numbers ⇒ Round numbers ⇒ Use negative numbers ⇒ Create number sequences <p>Addition and subtraction</p> <ul style="list-style-type: none"> ⇒ Add and subtract numbers with up to 5 digits ⇒ Use the column method for addition and subtraction ⇒ Round numbers to estimate answers to problems ⇒ Add and subtract mentally ⇒ Solve problems <p>Graphs and tables</p> <ul style="list-style-type: none"> ⇒ Read information from tables ⇒ Understand and create two-way tables ⇒ Read information from line graphs ⇒ Answer questions relating to the information in graphs and tables ⇒ Draw simple line graphs <p>Multiplication and division</p> <ul style="list-style-type: none"> ⇒ Recognise and find multiples and factors ⇒ Recognise and identify prime numbers ⇒ Calculate square and cube numbers ⇒ Use inverse operations ⇒ Multiply and divide by 10, 100 and 1,000 ⇒ Multiply and divide by multiples of 10, 100 and 1,000 <p>Measure—Area and perimeter</p> <ul style="list-style-type: none"> ⇒ Measure shapes to find their perimeter ⇒ Calculate the perimeter of squares, rectangles and other rectilinear shapes ⇒ Use a formula to find the area of squares and rectangles ⇒ Estimate the area of different 	<p>Multiplication and division (2)</p> <ul style="list-style-type: none"> ⇒ Multiply a number up to 4 digits by a 1- or 2-digit number ⇒ Divide a number up to 4 digits by a 1-digit number ⇒ Interpret remainders ⇒ Solve problems involving multiplication, division and remainders <p>Fractions (1)</p> <ul style="list-style-type: none"> ⇒ Find and use equivalent fractions ⇒ Convert between improper fractions and mixed numbers ⇒ Compare and order fractions ⇒ Understand fractions as division ⇒ Use fractions to show remainders <p>Fractions (2)</p> <ul style="list-style-type: none"> ⇒ Add and subtract fractions with the same denominator ⇒ Add and subtract fractions, including mixed numbers, where one denominator is a multiple of the other ⇒ Solve word problems involving fractions <p>Fractions (3)</p> <ul style="list-style-type: none"> ⇒ Multiply proper fractions and mixed numbers by whole numbers ⇒ Find a fraction of an amount ⇒ Understand how fractions can be operators ⇒ Solve word problems involving fractions <p>Decimals and percentages</p> <ul style="list-style-type: none"> ⇒ Read and write decimals up to three decimal places, including numbers greater than 1 ⇒ Round decimals to nearest whole number and to one decimal place ⇒ Order and compare decimal numbers up to three decimal places ⇒ Write percentages as fractions and as decimals. 	<p>Decimals</p> <ul style="list-style-type: none"> ⇒ Add and subtract decimals with the same number of digits after the decimal point ⇒ Add and subtract decimals with a different number of digits after the decimal point ⇒ Add whole numbers to decimals ⇒ Subtract decimals from whole numbers ⇒ Solve problems involving addition and subtraction of decimals including money problems ⇒ Multiply and divide decimals and whole numbers by 10, 100 and 1,000 <p>Geometry—Properties of shape</p> <ul style="list-style-type: none"> ⇒ Measure angles in degrees ⇒ Learn to measure angles with a protractor ⇒ Draw lines and angles accurately ⇒ Calculate missing angles ⇒ Learn about angles in shapes <p>Geometry—Properties of shape (2)</p> <ul style="list-style-type: none"> ⇒ Recognise and draw parallel lines ⇒ Recognise and draw perpendicular lines ⇒ Label parallel and perpendicular lines with the correct notation ⇒ Accurately identify regular and irregular polygons ⇒ Recognise different 3D shapes from different views <p>Geometry—Position and direction</p> <ul style="list-style-type: none"> ⇒ Learn to reflect simple 2D shapes in vertical and horizontal lines ⇒ Plot and find coordinates of a reflected point on a grid ⇒ Use coordinates to calculate new points of a reflected shape ⇒ Translate 2D shapes on grid paper ⇒ Use coordinates to find translations <p>Measure—Converting Units</p> <ul style="list-style-type: none"> ⇒ Convert between metric units of length, mass and capacity ⇒ Recognise imperial units and understand how to convert them into metric units ⇒ Convert between units of time ⇒ Read timetables and understand the information they show ⇒ Solve problems based on measures <p>Measure—Volume and Capacity</p> <ul style="list-style-type: none"> ⇒ Learn what the volume of a shape is ⇒ Find volumes of shapes by counting unit cubes ⇒ Draw shapes with different volumes ⇒ Compare the volume of different shapes ⇒ Estimate the capacity of different shapes

Year 6 Milestones

Autumn	Spring	Summer
<p>Place value within 10,000,000</p> <ul style="list-style-type: none"> ⇒ Learn to read and write numbers to 10,000,000 ⇒ Partition, compare and order numbers up to 10,000,000 ⇒ Round numbers ⇒ Work with negative numbers <p>Four operations</p> <ul style="list-style-type: none"> ⇒ Use written methods for addition and subtraction ⇒ Learn to use column multiplication ⇒ Learn different written methods for division ⇒ Learn checking strategies for our calculations <p>Four operations (2)</p> <ul style="list-style-type: none"> ⇒ Find common factors and multiples ⇒ Learn about prime, square and cube numbers ⇒ Learn about the order of operations ⇒ Solve mental calculations <p>Fractions (1)</p> <ul style="list-style-type: none"> ⇒ Simplify fractions ⇒ Compare and order fractions ⇒ Add and subtract fractions including mixed numbers ⇒ Solve problems involving adding and subtracting fractions <p>Fractions (2)</p> <ul style="list-style-type: none"> ⇒ Multiply any fraction by a whole number or another fraction ⇒ Divide a fraction by a whole number ⇒ Solve problems involving all four operations with fractions ⇒ Solve problems involving a fraction of an amount <p>Geometry—Position and direction</p> <ul style="list-style-type: none"> ⇒ Look at how we can use coordinates to describe the position of a point on a grid ⇒ Look at how coordinates can have positive or negative values ⇒ Explore how we can use our knowledge of properties of shape to help us solve problems on a coordinate grid ⇒ Explore how we can move and change shapes on a coordinate grid, through translations and reflections 	<p>Decimals</p> <ul style="list-style-type: none"> ⇒ Recognise the value of each digit in a decimal number ⇒ Multiply and divide decimals by 10, 100 and 1,000 ⇒ Convert between fractions and decimals ⇒ Multiply and divide decimals by single digit numbers <p>Percentages</p> <ul style="list-style-type: none"> ⇒ Develop a deeper understanding of percentages as parts of 100 ⇒ Understand a range of methods to work out percentages ⇒ Find 1% and multiples of 1% ⇒ Work out missing values, such as 30% of ? = 60 ⇒ Convert, order and solve problems involving fractions, percentages and decimals <p>Algebra</p> <ul style="list-style-type: none"> ⇒ Find and write algebraic rules ⇒ Write algebraic expressions ⇒ Write algebraic formulae ⇒ Write and solve algebraic equations ⇒ Solve equations that have lots of solutions <p>Measure—Imperial and metric units</p> <ul style="list-style-type: none"> ⇒ Choose the most appropriate metric units of measurement to measure different things ⇒ Convert between metric units, between imperial units and from one to the other ⇒ Solve problems involving metric units ⇒ Recognise the difference between metric and imperial units of measurement and what they are worth <p>Measure—Perimeter, area, volume</p> <ul style="list-style-type: none"> ⇒ Find and draw shapes with the same area or perimeter ⇒ Explore how the perimeter changes when the area changes and vice versa ⇒ Calculate the area of parallelograms and triangles ⇒ Calculate and estimate the volume of cubes and cuboids <p>Ratio and proportion</p> <ul style="list-style-type: none"> ⇒ Calculate ratios ⇒ Use ratios to work out amounts ⇒ Enlarge shapes by a scale factor ⇒ Identify similar shapes ⇒ Solve problems involving ratio 	<p>Geometry—Properties of shape</p> <ul style="list-style-type: none"> ⇒ Measure angles and draw shapes accurately using a ruler and protractor ⇒ Calculate unknown angles in shapes and on lines using angle facts ⇒ Explore properties of polygons and circles ⇒ Identify 3D shapes from 2D representations ⇒ Draw multiple nets for a 3D shape <p>Problem solving</p> <ul style="list-style-type: none"> ⇒ Solve problems about number, including fractions and ratio ⇒ Use representations to help make sense of problems ⇒ Use the four operations flexibly ⇒ Reason about problems with a context and without a context ⇒ Apply understanding of measurement and geometry to solve problems <p>Statistics</p> <ul style="list-style-type: none"> ⇒ Learn to calculate the mean of a set of data ⇒ Use the mean to find missing data ⇒ Read and interpret pie charts using fractions ⇒ Read and interpret pie charts using percentages ⇒ Interpret and create line graphs