Woodfield Primary School

Mathematics Planning Progression

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This planning document is for support when structuring your objectives across the year. Topics are revisited each term and it is essential that key concepts are revisited regularly to embed in long term memory. Objectives marked in bold have been identified by subject leaders as key concepts which are essential building blocks for the next steps in learning. These objectives must be embedded across the year so that children are fluent.

Always consider the opportunities for reasoning, problem solving and fluency that you are presenting to children. These can be taught in any order and are not hierarchical. Children can often reason mathematically before they are able to solve the same problem using calculation or can answer the question easily but struggle to break down the problem.

Number fluency is key to children having a secure understanding of mathematics so opportunities should be built into your school day to recap on number bonds, times tables, fluency with operations in addition to your daily maths lessons.

Teaching should always be based on your assessment of the prior knowledge of the children in your class and will need to build from lesson to lesson. Planning must be adapted in response to the feedback from the children and will be different from year to year and class to class.

The year group overviews give the structure of the year and beneath these there are objectives linked to each topic. For ideas or resources linked to these objectives the maths leaders across the MAT will be creating a bank of resources to support you. These resources will need to be adapted for your own class.

The aims of the National Curriculum for KS1 and KS2 are relevant to all our children and should be considered when you are planning for your own class.

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 should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

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Year 1

Autumn	**Spring**	**Summer**
Number and Place Value	Number and Place Value	Number and Place Value
Addition and Subtraction	Addition and Subtraction	Addition and Subtraction
Fractions	Multiplication and Division	Multiplication and Division
Measures o Time o Length/Capacity o Money	Measures **o** Time **o** Length/Capacity **o** Mass/Weight	Measurement o Time o Length/Capacity o Mass/Weight
Geometry – properties of shapes	2d and 3d Shapes	2d and 3d Shapes
	Fractions	Fractions
		Position and direction

Year 1 Objectives

Number – number and place value
▪ 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 twos**, fives and tens ▪ **given a number, identify one more and one less** (under 100) ▪ 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
▪ 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 zero ▪ 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
▪ 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
▪ recognise, find and name a half as one of two equal parts of an object, shape or quantity ▪ recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
Measurement
compare, describe and solve practical problems for: ▪ lengths and heights [for example, long/short, longer/shorter, tall/short,

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double/half] ▪ mass/weight [for example, heavy/light, heavier than, lighter than] ▪ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ▪ time [for example, quicker, slower, earlier, later] 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 [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] ▪ 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
▪ 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
▪ describe position, direction and movement, including whole, half, quarter and three quarter turns.

Year 1 Autumn Term

Number – number and place value (4 weeks)
▪ 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 within 20 ▪ count to and across 20, forwards and backwards, beginning with 0 or 1, or from any given number ▪ count, read and write numbers to 20 in numerals; ▪ **read and write numbers from 1 to 20 in numerals and words.** ▪ **given a number, identify one more and one less (within 20)**
Number – addition and subtraction (3 weeks)
▪ **represent and use number bonds and related subtraction facts within 10** ▪ add and subtract one-digit numbers within 10, including zero ▪ read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs using one-digit numbers ▪ solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations
Number Fractions (1 week)
▪ recognise, find and name a half as one of two equal parts of an object, shape or quantity
Measurement (2/3 weeks)
compare, describe and solve practical problems for: ▪ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]

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measure and begin to record the following: ▪ lengths and heights recognise and know the value of different denominations of coins and notes sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] ▪ recognise and use language relating to dates, including days of the week, weeks, months and years
Geometry – properties of shapes (1 week)
▪ recognise and name common 2-D, including: ▪ 2-D shapes [for example, rectangles (including squares), circles and triangles]

Year 1 Spring Term

Number – number and place value (3 weeks)
▪ 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 within 50 ▪ count to and across 50, forwards and backwards, beginning with 0 or 1, or from any given number ▪ **count in multiples of twos** up to 50 ▪ given a number, identify one more and one less (within 50)
Number – addition and subtraction (2 weeks)
▪ **represent and use number bonds and related subtraction facts within 20** ▪ **add and subtract one-digit and two-digit numbers to 20, including zero** ▪ read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs up to 20 ▪ 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 (2 weeks)
▪ solve one-step problems involving multiplication and division, by calculating the answer using concrete objects and pictorial representations.
Number Fractions (1 week)
▪ recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
Measurement (3 weeks)
compare, describe and solve practical problems for: ▪ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ▪ time [for example, quicker, slower, earlier, later] measure and begin to record the following: ▪ mass/weight ▪ capacity and volume ▪ time (hours, minutes, seconds) ▪ revisit sequencing events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] ▪ rehearse recognising and using language relating to dates, including days of the week, weeks, months and years

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Geometry – properties of shapes (1 week)
▪ recognise and name common 3-D shapes, including: 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].

Year 1 Summer Term

Number – number and place value (2 weeks)
▪ 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 up to 100 ▪ count, read and write numbers to 100 in numerals; ▪ **count in multiples of twos**, fives and **tens** up to 100 ▪ **given a number, identify one more and one less** up to 100
Number – addition and subtraction (2 weeks)
▪ **Practice representing and using number bonds and related subtraction facts within 20** ▪ Revisit reading, writing and interpreting mathematical statements involving addition (+), subtraction (–) and equals (=) signs ▪ Rehearse solving one-step problems that involve addition and subtraction, using pictorial representations, and missing number problems such as 7 = ☐ – 9.
Number – multiplication and division (2 weeks)
▪ Practice solving 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 (1 week) - review
▪ Recap recognising, finding and naming a half as one of two equal parts of an object, shape or quantity ▪ Recap recognising, finding and naming a quarter as one of four equal parts of an object, shape or quantity.
Measurement (2 weeks) – review some objectives
Revisit comparing, describing and solving practical problems for: ▪ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] ▪ mass/weight [for example, heavy/light, heavier than, lighter than] ▪ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] measure and begin to record the following: ▪ tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
Geometry – position and direction (2 weeks)
▪ describe position, direction and movement, including whole, half, quarter and three quarter turns.

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Year 2

Autumn	**Spring**	**Summer**
Number and Place Value	Number and Place Value	Number and Place Value
Addition and Subtraction	Addition and Subtraction	Addition and Subtraction
Multiplication and Division	Multiplication and Division	Multiplication and Division
Measures o **Length/Capacity** o **Money**	Measures o Time o Length/Capacity o Mass/Weight o Temperature	Measurement o Time o Length/Capacity o Money
2d and 3d shapes	2d and 3d Shapes	2d and 3d Shapes
Fractions	Fractions	Fractions
	Statistics	Position and direction
		Statistics

Year 2 Objectives

Number – number and place value
• **count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward** • **recognise the place value of each digit in a two-digit number (tens, ones)** • 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
• solve problems with addition and subtraction: o using concrete objects and pictorial representations, including those involving numbers, quantities and measures o 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:** o **a two-digit number and ones** o **a two-digit number and tens** o **two two-digit numbers** o **adding three one-digit numbers** • **show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another**

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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
• **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 two numbers can be done in any order (commutative) and division of one 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
• **recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$ 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
• 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
• **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]

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• compare and sort common 2-D and 3-D shapes and everyday objects.
Geometry – position and direction
• 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
• interpret and construct simple pictograms, tally charts, block diagrams and simple 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.

Year 2 Autumn Term

Number – number and place value (3 weeks)
• **recognise the place value of each digit in a two-digit number (tens, ones)** • identify, represent and estimate numbers using different representations • read and write numbers to at least 100 in numerals and in words • **count in steps of 2, and 5 from 0, forward and backward** • use place value and number facts to solve problems relating to the above objectives
Number – addition and subtraction (3 weeks)

• **add and subtract numbers using concrete objects and pictorial representations including:**
  o **a two-digit number and ones**
  o **a two-digit number and tens**
  o **adding three one-digit numbers**
• **show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot**
• **recall and use addition and subtraction facts to 20 fluently**
• add and subtract numbers mentally, including:
  o a two-digit number and ones
  o a two-digit number and tens
  o adding three one-digit numbers
• recognise and use the inverse relationship between addition and subtraction and use this to check calculations
• solve problems with addition and subtraction:
• applying their increasing knowledge of mental and written methods

Number – multiplication and division (2 weeks)
• calculate mathematical statements for multiplication and division within the multiplication tables (2 and 10) and write them using the multiplication (×), division (÷) and equals (=) signs

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• **show that multiplication of two numbers can be done in any order (commutative)** • **recall and use multiplication and division facts for the 2 and 10 multiplication tables, including recognising odd and even numbers** • solve problems involving multiplication and division, using materials, arrays, repeated addition, and multiplication and division facts.
Number Fractions (2 weeks)
• **recognise, find, name and write fractions $\frac{1}{4}$, $\frac{2}{4}$, $\frac{1}{2}$, of a shape, set of objects or quantity**
Measurement (2 weeks)
• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); capacity (litres/ml) to the nearest appropriate unit, using rulers and measuring vessels • 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
Geometry – properties of shapes (1 week)
• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • compare and sort common 2-D and everyday objects.

Year 2 Spring Term

Number – number and place value (2 weeks)
• compare and order numbers from 0 up to 50; use <, > and = signs • practice identifying, representing and estimating numbers using different representations, including the number line • recap counting in steps of 2, and 5 from 0, and in tens from any number, forward and backward • revisit using place value and number facts to solve problems relating to the above objectives
Number – addition and subtraction (2 weeks)

• **recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100**
• **add and subtract numbers mentally, including:**
  o **a two-digit number and tens**
  o **two two-digit numbers**
• rehearse solving problems with addition and subtraction:
  o using concrete objects and pictorial representations, including those involving numbers, quantities
  o applying their increasing knowledge of mental and written methods

Number – multiplication and division (3 weeks)
• **revisit recalling and using multiplication and division facts for**

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the 2, 5 and 10 multiplication tables • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • rehearse solving problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Number Fractions (2 weeks)
• **practice recognising, finding, naming and writing fractions, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$ 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 (2 weeks)
• choose and use appropriate standard units to estimate and measure mass (kg/g); temperature (°C); to the nearest appropriate unit, using scales, thermometers • compare and order lengths, mass, volume/capacity and record the results using >, < and = • compare and sequence intervals of time • **know the number of minutes in an hour and the number of hours in a day.**
Geometry – properties of shapes (1 week)
• **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]
Statistics (2 weeks)
• interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity

Year 2 Summer Term

Number – number and place value (2 weeks) – including some review
• **Revisit recognising the place value of each digit in a two-digit number (tens, ones)** • compare and order numbers from 0 up to 100; use <, > and = signs • **revisit counting in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward** • rehearse using place value and number facts to solve problems relating to the above objectives
Number – addition and subtraction (2 weeks)

• add and subtract numbers using concrete objects and pictorial representations, and mentally including:
  o a two-digit number and tens
  o two two-digit numbers

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• **practice recognising and using the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.**
• Revisit solving problems with addition and subtraction:
  o using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  o applying their increasing knowledge of mental and written methods

Number – multiplication and division (2 weeks)
• revisit calculating mathematical statements for multiplication and division within the multiplication tables (2, 5 and 10) and write them using the multiplication (×), division (÷) and equals (=) signs • **rehearse recalling and using multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers** • recap solving problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Number Fractions (1 week)
• **rehearse recognising, finding, naming and writing fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ of a length, shape, set of objects or quantity**
Measurement (2 weeks)
• revisit choosing and using appropriate standard units to estimate and measure to the nearest appropriate unit, using rulers, and measuring vessels • **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**
Geometry – properties of shapes (1 week)
• compare and sort common 2-D and 3-D shapes and everyday objects.
Geometry – position and direction (2 weeks)
• 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 (2 weeks)
• practice interpreting and constructing tally charts, block diagrams and simple tables • ask and answer questions about totalling and comparing categorical data.

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Year 3

Autumn	Spring	Summer
Number and Place Value	Number and Place Value	Number and Place Value
Addition and Subtraction	Addition and Subtraction	Addition and Subtraction
Multiplication and Division	Multiplication and Division	Multiplication and Division
Measures o **Length/Capacity** o **Perimeter** o **Mass**	Measures o Time o Length/Capacity o Money	Measurement o Time o Length/Capacity o Mass
Geometry – properties of shape	Geometry – properties of shape	Geometry – properties of shape
Fractions	Fractions	Fractions
	Statistics	Position and direction
		Statistics

Year 3 Objectives

Number – number and place value
• **count from 0 in multiples of 3, 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 three-digit number (hundreds, tens, ones)** • compare and order numbers up to 1000 • identify, represent and estimate numbers using different representations • read and write numbers up to 1000 in numerals and in words • solve number problems and practical problems involving these ideas.
Number – addition and subtraction
• **add and subtract numbers mentally, including:** o **a three-digit number and ones** o **a three-digit number and tens** o **a three-digit number and hundreds** • **add and subtract numbers with up to three 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
• **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**

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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
• 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

• 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;
  o record and compare time in terms of seconds, minutes and hours;
  o use vocabulary such as o'clock, a.m./p.m., 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 [for example to calculate the time taken by particular events or tasks].

Geometry – properties of shapes
• 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 two right angles make a half-turn, three make three quarters of a turn and four 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

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parallel lines.
Statistics
• interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables.

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Autumn Term Year 3

Number – number and place value (3 weeks)
• **recognise the place value of each digit in a three-digit number (hundreds, tens, ones)** • read and write numbers up to 500 in numerals and in words • compare and order numbers up to 500 • **find 10 or 100 more or less than a given number up to 500** • **count from 0 in multiples of 3, 4, and 100** • solve number problems and practical problems involving these ideas.
Number – addition and subtraction (2 weeks)

• **add and subtract numbers with up to two digits**, using formal written methods of columnar addition and subtraction
• **add and subtract numbers mentally, including:**
  o **a three-digit number and ones**
  o **a three-digit number and tens**
• **solve problems, including missing number problems, using number facts, place value**

Number – multiplication and division (1 week)
• **recall and use multiplication and division facts for the 3 and 4 multiplication tables**
Number Fractions (1 week)
• **recognise, find and write fractions of a discrete set of objects: unit fractions** • solve problems that involve all of the above.
Measurement (2 weeks)
• measure, compare, add and subtract: lengths (m/cm/mm) • measure the perimeter of simple 2-D shapes
Geometry – properties of shapes (1 week)
• draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them

Year 3 Spring Term

Number – number and place value (2 weeks)
• **recap finding 10 or 100 more or less than a given number** up to 750 • **count from 0 in multiples of 4, 8, 50** • practice solving number problems and practical problems involving these ideas.
Number – addition and subtraction (2 weeks)

• **add and subtract numbers with up to three digits**, using formal written methods of columnar addition and subtraction
• estimate the answer to a calculation and use inverse operations to check answers
• **revisit adding and subtracting numbers mentally, including:**
  o **a three-digit number and tens**
  o **a three-digit number and hundreds**
• rehearse solving problems, including missing number problems,

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using number facts, place value, and more complex addition and subtraction.
Number – multiplication and division (2 weeks)
• **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 • **recall and use multiplication and division facts for the 4 and 8 multiplication tables** • **solve problems, including missing number problems, involving multiplication and division**
Number Fractions (2 weeks)
• 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 and use fractions as numbers: unit fractions • **compare and order unit fractions**, and fractions with the same denominators • recognise and show, using diagrams, equivalent fractions with small denominators • **recognise, find and write fractions of a discrete set of objects:** non-unit fractions with small denominators • solve problems that involve all of the above.
Measurement (3 weeks)
• measure, compare, add and subtract: mass (kg/g) • add and subtract amounts of money to give change, using both £ and p in practical contexts • estimate and read time with increasing accuracy to the nearest minute; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • compare durations of events [for example to calculate the time taken by particular events or tasks].
Geometry – properties of shapes (1 week)
• recognise angles as a property of shape or a description of a turn • **identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle**
Statistics (1 week)
• interpret and present data using bar charts, pictograms and tables

Year 3 Summer Term

Number – number and place value (2 weeks)
• compare and order numbers up to 1000 • read and write numbers up to 1000 in numerals and in words • **revisit finding 10 or 100 more or less than a given number** up to 1000 • rehearse solving number problems and practical problems involving

these ideas.
Number – addition and subtraction (1 week)
• **recap adding and subtracting numbers mentally, including:**   o **a three-digit number and hundreds** • **practice solving problems, including missing number problems,** using number facts, place value, and more complex addition and subtraction.
Number – multiplication and division (2 weeks)
• **recap writing and calculating mathematical statements for multiplication and division using the multiplication tables that they know,** including for two-digit numbers times one-digit numbers, using 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 (2 weeks)
• recognise and use fractions as numbers: non-unit fractions with small denominators • recognise and show, using diagrams, equivalent fractions • add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7}+\frac{1}{7}=\frac{6}{7}$ • **rehearse recognising, finding and writing fractions of a discrete set of objects: unit fractions** and non-unit fractions with small denominators • solve problems that involve all of the above.
Measurement (2 weeks)
• add and subtract: volume/capacity (l/ml) • **tell and write the time from an analogue clock,** including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • recap estimating and reading time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours • **know the number of seconds in a minute and the number of days in each month, year and leap year**
Geometry – properties of shapes (1 week)
• identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
Statistics (1 week)
• solve one-step and two-step questions [for example, ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables.

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Year 4

Autumn	**Spring**	**Summer**
Number and Place Value	Number and Place Value	Number and Place Value
Addition and Subtraction	Addition and Subtraction	Addition and Subtraction
Multiplication and Division	Multiplication and Division	Multiplication and Division
Measures o **Conversion** o **Area and Perimeter** o **Money**	Measures o Time o Area and Perimeter o Money	Measures o Money o Time o Perimeter
Fractions (including decimals)	Fractions (including decimals)	Fractions (including decimals)
	Geometry – Properties of shape	Geometry – Properties of shape
	Statistics	Geometry – Position and Direction

Year 4 Objectives

Number – number and place value
• **count in multiples of 6, 7, 9, 25 and 1000** • **find 1000 more or less than a given number** • **count backwards through zero to include negative numbers** • **recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)** • order and compare numbers beyond 1000 • identify, represent and estimate numbers using different representations • **round any number to the nearest 10, 100 or 1000** • 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 zero and place value.
Number – addition and subtraction
• **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
• **recall multiplication and division facts for multiplication tables up to 12 × 12** • **use place value, known and derived facts to multiply and**

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divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three 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 one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.**
Number Fractions (including decimals)
• **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 one hundred and dividing tenths by ten. • **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 hundredths • 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 one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places • solve simple measure and money problems involving fractions and decimals to two decimal places.
Measurement
• 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
• 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 two right angles by size** • **identify lines of symmetry in 2-D shapes presented in**

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different orientations • **complete a simple symmetric figure with respect to a specific line of symmetry.**
Geometry – position and direction
• **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
• **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.

Year 4 Autumn Term

Number – number and place value (3 weeks)
• **recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)** • order and compare numbers beyond 1000 • **find 1000 more or less than a given number** • **count in multiples of 6, and 1000** • **round any number to the nearest 10, 100 or 1000** • read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. • solve number and practical problems that involve all of the above and with increasingly large numbers
Number – addition and subtraction (2 weeks)
• **add and subtract numbers with up to 3 digits using the formal written methods of columnar addition and subtraction where appropriate** • **solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.**
Number – multiplication and division (1 week)
• **recall multiplication and division facts for multiplication tables up to 12 × 12 (6 and 7)** • **use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1**
Number Fractions (including decimals) (2 weeks)
• **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** • **solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities**
Measurement (1 week)

• Convert between different units of measure [for example, kilometre to metre; hour to minute] • calculate different measures, including money in pounds and pence

Year 4 Spring Term

Number – number and place value (2 weeks)
• **count in multiples of 7, 9, 25** • **count backwards through zero to include negative numbers** • resolve number and practical problems that involve all of the above and with increasingly large numbers
Number – addition and subtraction (2 weeks)
• **revisit adding and subtracting 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 • **practice solving addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.**
Number – multiplication and division (2 weeks)
• **multiply two-digit numbers by a one-digit number using formal written layout** • **recall multiplication and division facts for multiplication tables up to 12 × 12 (9, 11 and 12)** • recognise and use factor pairs and commutativity in mental calculations • **revisit using place value, known and derived facts to multiply and divide mentally, including: multiplying together three numbers** • **solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit**
Number Fractions (including decimals) (2 weeks)
• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • **recognise and show, using diagrams, families of common equivalent fractions** • **add and subtract fractions with the same denominator** • **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**
Measurement (2 weeks)
• **measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres** • **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.

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Geometry – properties of shapes (2 weeks)
• 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 two right angles by size**
Statistics (2 weeks)
• **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.

Year 4 Summer Term

Number – number and place value (2 weeks)
• **instant recall of recognising the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)** • **identify, represent and estimate numbers using different representations** • **revisit finding 1000 more or less than a given number** • **rehearse counting in multiples of 6, 7, 9, 25 and 1000** • practice solving number and practical problems that involve all of the above and with increasingly large numbers
Number – addition and subtraction (1 week)
• **rehearse adding and subtracting numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** • recap estimating and using inverse operations to check answers to a calculation • **revisit solving addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.**
Number – multiplication and division (2 weeks)
• **practice multiplying two-digit and three-digit numbers by a one-digit number using formal written layout** • **rehearse recalling multiplication and division facts for multiplication tables up to 12 × 12** • **solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.**
Number Fractions (including decimals) (2 weeks)
• recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ • compare numbers with the same number of decimal places up to two decimal places • round decimals with one decimal place to the nearest whole number • solve simple measure and money problems involving fractions and decimals to two decimal places.

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Measurement (1 week)
• **find the area of rectilinear shapes by counting squares** • estimate, compare and calculate different measures, including money in pounds and pence
Geometry – properties of shapes (1 week)
• **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 (2 weeks)
• **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.

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Year 5

Autumn	Spring	Summer
Number and Place Value	Number and Place Value	Number and Place Value
Addition and Subtraction	Addition and Subtraction	Addition and Subtraction
Multiplication and Division	Multiplication and Division	Multiplication and Division
Measures o **Area** o **Perimeter of composite shapes**	Measures o Time o conversion o Metric and imperial	Measures o Conversion o Volume o Problem Solving
Fractions	Fractions and decimals	Geometry Properties of shape Position and direction
	Geometry - shape	Fractions, decimals and percentages
		Statistics – line graphs

Year 5 Objectives

Number – number and place value
• **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 zero • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
Number – addition and subtraction
• **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
• **identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers** • know and use the vocabulary of prime numbers, prime factors and

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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 1000**
- recognise and use square numbers and cube numbers, and the notation for squared ($\square^2$) and cubed ($\square^3$)
- 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 ratio.

Number Fractions (including decimals and percentages)

- **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 two decimal places to the nearest whole number and to one decimal place
- read, write, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places
- **recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal**
- solve problems which require knowing percentage and decimal

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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
• **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), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • estimate volume [for example, using 1 cm^3 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

• 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:**
  o **angles at a point and one whole turn (total 360°)**
  o **angles at a point on a straight line and $\frac{1}{2}$a turn (total 180°)**
  o **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
• 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
• **solve comparison, sum and difference problems using information presented in a line graph** • complete, read and interpret information in tables, including timetables.

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Year 5 Autumn Term

Number – number and place value (3 weeks)
• **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 500 000 • round any number up to 1 000 000 to the nearest 10, 100, 1000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • solve number problems and practical problems that involve all of the above
Number – addition and subtraction (2 weeks)
• **add and subtract whole numbers with 4 digits, including using formal written methods (columnar addition and subtraction)** • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Number – multiplication and division (3 weeks)
• **multiply numbers up to 4 digits by a one** using a formal written method • **multiply and divide numbers mentally drawing upon known facts** • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • **identify multiples and factors, including finding all factor pairs of a number** • recognise and use square numbers and cube numbers, and the notation for squared ($\square^2$) and cubed ($\square^3$) • know and use the vocabulary of prime numbers and composite (non-prime) numbers • solve problems involving multiplication and division
Number Fractions (including decimals and percentages) (2 weeks)
• **identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** • add and subtract fractions with the same denominator
Measurement (1 week)
• calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • **measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres**

Year 5 Spring Term

Number – number and place value (2 weeks)
• **revisit interpreting negative numbers in context, count forwards and backwards with positive and negative whole**

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numbers, including through zero • read Roman numerals to 1000 (M) and recognise years written in Roman numerals. • Practice solving number problems and practical problems that involve all of the above
Number – addition and subtraction (2 weeks)
• **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 • recap solving addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Number – multiplication and division (2/3 weeks)
• **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** • **divide numbers up to 4 digits by a one-digit number using the formal written method of short division** • practice solving problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • identify multiples and factors and common factors of two numbers • **establish whether a number up to 100 is prime** • **multiply and divide whole numbers and those involving decimals by 10, 100 and 1000** • solve problems involving multiplication and division including using their knowledge of factors and multiples
Number Fractions (including decimals and percentages) (3 weeks)
• compare and order fractions whose denominators are all multiples of the same number • **add and subtract fractions with the same denominator and denominators that are multiples of the same number** • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • **read and write decimal numbers as fractions [for example, 0.71 =** $\frac{71}{100}$**]** • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places • 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 (2 weeks)
• solve problems involving converting between units of time • **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
Geometry – properties of shapes (1 week)
• identify 3-D shapes, including cubes and other cuboids, from 2-D representations • use the properties of rectangles to deduce related facts and find missing lengths and angles

Year 5 Summer Term

Number – number and place value (2 weeks)
• **round any number up to 1 000 000 to the nearest 10 000 and 100 000** • **count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000** • rehearse reading Roman numerals to 1000 (M) and recognise years written in Roman numerals. • Recap solving number problems and practical problems that involve all of the above
Number – addition and subtraction (2 weeks)
• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • practice solving addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Number – multiplication and division (2 weeks)
• **multiply numbers - long multiplication for two-digit numbers** • **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** • **revisit multiplying and dividing whole numbers and those involving decimals by 10, 100 and 1000** • **rehearse recognising and using square numbers and cube numbers, and the notation for squared (❑^{2}) and cubed (❑^{3})** • know and use the vocabulary of prime factors • recall prime numbers up to 19 • solve problems involving multiplication and division including using their knowledge of squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple ratio.
Number Fractions (including decimals and percentages) (2 weeks)
• **practice adding and subtracting fractions with the same denominator and denominators that are multiples of the same number** • **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,** $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$ • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • **recognise the per cent symbol (%) and understand that per**

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cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • revisit solving 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 (2 weeks)
• **practice converting between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)** • estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
Geometry – properties of shapes (2 weeks)

• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
• draw given angles, and measure them in degrees (°)
• **identify:**
  o **angles at a point and one whole turn (total 360°)**
  o **angles at a point on a straight line and $\frac{1}{2}$a turn (total 180°)**
  o **other multiples of 90°**
• distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Geometry – position and direction (1 week)
• 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 (1 week)
• **solve comparison, sum and difference problems using information presented in a line graph** • complete, read and interpret information in tables, including timetables.

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Year 6

Autumn	Spring	Summer
Number and Place Value	Number and Place Value	Review/Application - Number and Place Value
Addition and Subtraction	Addition and Subtraction	Review/Application - Addition and Subtraction
Multiplication and Division	Multiplication and Division	Review/Application - Multiplication and Division
Measures o **Area** o **Perimeter**	Measures **o** Time **o** Length/Capacity/ Mass **o** Money	Review/Application - Measures
Fractions, decimals and percentages	Fractions and decimals	Review/Application - Geometry Properties of shape Position and direction
Statistics	Geometry – shape Properties of shape Position and direction	Review/Application - Fractions, decimals and percentages
		Review/Application - Statistics

Year 6 Objectives

Number – number and place value
• **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 zero • **solve number and practical problems that involve all of the above.**
Number – addition, subtraction, multiplication and division
• **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 number using the formal written method of short division where appropriate, interpreting remainders according to the context** • 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 • **perform mental calculations, including with mixed operations and large numbers** • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy identify

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common factors, common multiples and prime numbers • **solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** • use their knowledge of the order of operations to carry out calculations involving the four operations • **solve problems involving addition, subtraction, multiplication and division**
Number Fractions (including decimals and percentages)
• 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, [$\frac{1}{4} x \frac{1}{2} = \frac{1}{8}$ • 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, $\frac{3}{8}$]** • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • **identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places** • multiply one-digit numbers with up to two decimal places by whole numbers • use written division methods in cases where the answer has up to two decimal places • **solve problems which require answers to be rounded to specified degrees of accuracy**
Ratio and proportion
• **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 the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. • solve problems involving similar shapes where the scale factor is known or can be found
Algebra
• **use simple formulae** • **generate and describe linear number sequences** • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns

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• enumerate possibilities of combinations of two variables.
Measurement
• **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 three decimal places** • convert between miles and kilometres • **solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate** • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • recognise that shapes with the same areas can have different perimeters and vice versa • 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 [for example, mm^3 and km^3].
Geometry – properties of shapes
• **compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons** • draw 2-D shapes using given dimensions and angles • 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.** • recognise, describe and build simple 3-D shapes, including making nets
Geometry – position and direction
• **describe positions on the full coordinate grid (all four quadrants)** • draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Statistics
• 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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