



Maths Planning Overviews

This planning document is in line with the National Curriculum 2014 and St Alban's Catholic Primary School Calculation Policy (2018).

Aims

The National Curriculum 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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.
- 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.

These overviews provide a basis for class teacher planning. They should be adapted and modified to suit the learning needs of groups and individuals based on teachers' professional judgements. It is designed to work in conjunction with the School's Mathematics and Calculation policies.

The termly plans should be completed at the start of the year and adjusted at least half-termly based on teacher assessments and analyses. The plans may also need adjusting due to changes in the number of weeks in a term or half term. Cross-curricular links between mathematics and other subjects should be explored wherever relevant.

These overviews should be further broken down into weekly plans by each class teacher. It is suggested that at least three days per week of mathematics sessions are spent with a number focus.

The Subject leader will monitor coverage and impact throughout the year.

Year 1

<u>Topic</u>	Curriculum Objectives (derived from 2014 Curriculum)
	Assess and Review – Formative and Summative assessment built in to assess the half term’s work.
Numbers to 10.c	<ul style="list-style-type: none"> • Count to ten, forwards and backwards, beginning with 0 or 1, or from any given number • Count, read and write numbers to 10 in numerals and words • 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 • Given a number, identify one more and one less • Count in multiples of twos
Addition and Subtraction within 10.	<ul style="list-style-type: none"> • Represent and use number bonds and related subtraction facts [within 10] • Add and subtract one-digit ... numbers [to 10], including zero • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems
Shapes and Patterns	<ul style="list-style-type: none"> • 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 • Describe position, direction and movement, including whole, half, quarter and three-quarter turns
Numbers to 20	<ul style="list-style-type: none"> • Count to twenty, forwards and backwards, beginning with 0 or 1, or from any given number • Count, read and write numbers from 1 to 20 in numerals and words • 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 • Count in multiples of twos and fives
Addition and Subtraction within 20	<ul style="list-style-type: none"> • 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 • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$
Exploring Calculation Strategies within 20	<ul style="list-style-type: none"> • Represent and use number bonds and related subtraction facts within 20 • Add and subtract one-digit and two-digit numbers to 20, including zero

	<ul style="list-style-type: none"> • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$
Time	<ul style="list-style-type: none"> • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times • Recognise and use language relating to dates, including days of the week, weeks, months and years
Time	<ul style="list-style-type: none"> • Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] and measure and begin to record time (hours, minutes, seconds) • Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
Numbers to 40	<ul style="list-style-type: none"> • Count to forty, forwards and backwards, beginning with 0 or 1, or from any given number • Count, read and write numbers from 1 to 20 in numerals and words • 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 • Given a number, identify one more and one less • Recognise the place value of each digit in a two-digit number (tens, ones)
Adding and Subtracting within 40	<ul style="list-style-type: none"> • Represent and use number bonds and related subtraction facts within 20 • Add and subtract one-digit and two-digit numbers to 20, including zero • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$
Length, Weight and Volume	<ul style="list-style-type: none"> • Compare, describe and solve 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: lengths and heights; mass/weight; capacity and volume
Numbers to 100	<ul style="list-style-type: none"> • Count to and across 100, forwards and backwards, beginning with 0

	<p>or 1, or from any given number</p> <ul style="list-style-type: none"> • Count, read and write numbers from 1 to 20 in numerals and words • 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 • Recognise the place value of each digit in a two-digit number (tens, ones) • Identify, represent and estimate numbers to 100 using different representations • Given a number, identify one more and one less • Read and write numbers to at least 100 in numerals and in words
<p>Adding and Subtracting within 100</p>	<ul style="list-style-type: none"> • Add and subtract one-digit and two-digit numbers to 20, including zero • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers • Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$
<p>Money</p>	<ul style="list-style-type: none"> • Recognise and know the value of different denominations of coins and notes • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$
<p>Multiplication and Division</p>	<ul style="list-style-type: none"> • 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 • 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

Year 2

<u>Topic</u>	Curriculum Objectives (derived from 2014 Curriculum) Assess and Review – Formative and Summative assessment built in to assess the half term’s work.
Number and Place Value: counting, reading and writing 2- digit numbers, place value.	<ul style="list-style-type: none"> • To count in steps of 2, 3 and 5 from 0; and count in tens from any number forwards and backwards. • To recognise the place value of each digit in a 2-digit number (tens, ones). • To identify, represent and estimate numbers from 0 up to 100; use <, > and = (equals to) signs. • To read and write numbers to at least 100 in numerals and in words. • To use place value and number facts to solve problems.
Addition and Subtraction: Concrete, visual and symbolic practise of number facts.	<ul style="list-style-type: none"> • To solve problems with addition and subtraction: <ul style="list-style-type: none"> ○ Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ○ Applying their increasing knowledge of mental and written methods. • To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • To add and subtract using concrete objects, pictorial representations and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers. • Recognise and understand the inverse relationship between addition and subtraction and use this to check calculation and missing number problems. • To show that addition can be done in any order (commutative) and subtraction cannot.
Multiplication and Division: Repeated addition and repeated subtraction.	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. • To calculate mathematical statements for multiplication and division within the multiplication tables and write them using x, ÷ and = (equals to) signs. • To recognise and use the inverse relationship between multiplication and division in calculations. • To investigate to show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot. • To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
Geometry: Properties of 3D and 2D shapes.	<ul style="list-style-type: none"> • To identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line. • To identify and describe the properties of 3D shapes including

	<p>the number of edges, vertices and faces.</p> <ul style="list-style-type: none"> • To identify “D shapes on the surface of 3D shapes, for example a circle on a cylinder and a triangle on a pyramid. • To compare and sort common 2D and 3D shapes and everyday objects.
<p>Measures: Length, mass, capacity, money.</p>	<ul style="list-style-type: none"> • To choose and use the appropriate standard units to estimate and measure length/height in any direction: mass, temperature, volume and capacity to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels. • To compare and order lengths, mass, volume/capacity and record the results using $<$, $>$ and $=$ (equals to) signs. • To recognise and use the symbols for pounds and pence; to combine amounts to make a particular value. • To investigate to find different combinations of coins that equal the same amounts of money. • To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
<p>Number and Place Value: Comparing and ordering 2-digit numbers and knowing their place value.</p>	<ul style="list-style-type: none"> • To count in steps of 2, 3 and 5 from 0, and count in tens from any number, forwards or backwards. • To recognise the place value of each digit in a two-digit number (tens, ones). • To identify, represent and estimate numbers using different representations, including the number line. • To compare and order numbers from 0 up to 100, using $<$, $>$ and $=$ (equals to) signs. • To read and write numbers to at least 100 in numerals and in words. • To use place value and number facts to solve problems.
<p>Addition and Subtraction: Using recall of addition and subtraction facts and mental calculation strategies.</p>	<ul style="list-style-type: none"> • To solve problems with addition and subtraction: <ul style="list-style-type: none"> ○ Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ○ Applying their increasing knowledge of mental and written methods. • To add and subtract using concrete objects, pictorial representations and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers. • To show that addition can be done in any order (commutative) and subtraction cannot. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
<p>Multiplication and Division: Repeated addition and subtraction, arrays, grouping and using times table facts.</p>	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers. • To calculate mathematical statements for multiplication and division with the multiplication tables and write them

	<p>using the \times, \div and = (equals to) signs.</p> <ul style="list-style-type: none"> • To recognise and use the inverse relationship between multiplication and division in calculations. • To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot. • To solve one-step problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
<p>Fractions: Finding fractions of quantities, shapes and sets of objects.</p>	<ul style="list-style-type: none"> • To understand the concept that fractions are a part of a whole. • To recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$. • To write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.
<p>Geometry: Position, Direction and Motion.</p> <p>Measures: Time.</p>	<ul style="list-style-type: none"> • To order and arrange combinations of mathematical objects in patterns. • To use mathematical vocabulary to describe position, direction and movement including distinguishing between rotation as a turn and I terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) and movement in a straight line. • To compare and sequence intervals of time. • To tell and write the time to five minutes, including quarter past/to the hour and draw the hands on an analogue clock face to show these times.
<p>Data: Solving problems that involve collecting data in tallies, tables and pictograms.</p>	<ul style="list-style-type: none"> • To interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • To ask and answer questions about totaling and compare categorical data.
<p>Number and Place Value: Estimating, counting and comparing quantities.</p>	<ul style="list-style-type: none"> • To count in steps of 2, 3 and 5 from 0, and count in tens from any number, forwards or backwards. • To recognise the place value of each digit in a two-digit number (tens, ones). • To identify, represent and estimate numbers using different representations, including the number line. • To compare and order numbers from 0 up to 100, using $<$, $>$ and = (equals to) signs. • To read and write numbers to at least 100 in numerals and in words. • To use place value and number facts to solve problems.
<p>Addition and Subtraction: Using recall of addition and subtraction facts and mental calculation strategies.</p>	<ul style="list-style-type: none"> • To solve problems with addition and subtraction: <ul style="list-style-type: none"> ○ Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ○ Applying their increasing knowledge of mental and written methods. • To add and subtract using concrete objects, pictorial representations

	<p>and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers.</p> <ul style="list-style-type: none"> • To show that addition can be done in any order (commutative) and subtraction cannot. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
<p>Addition and Subtraction: Using partitioning and counting on strategies.</p>	<ul style="list-style-type: none"> • To solve problems with addition and subtraction. • Using concrete objects and pictorial representations including those involving numbers, quantities and measures. • Applying their increasing knowledge of mental and written methods. • To add and subtract using concrete objects, pictorial representations and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers. • To show that addition can be done in any order (commutative) and subtraction can not. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
<p>Multiplication and Division: Repeated addition and subtraction, arrays, grouping and using times table facts.</p>	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers. • To calculate mathematical statements for multiplication and division with the multiplication tables and write them using the \times, \div and $=$ (equals to) signs. • To recognise and use the inverse relationship between multiplication and division in calculations. • To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot. • To solve one-step problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
<p>Geometry: Properties of 3D and 2D shapes.</p>	<ul style="list-style-type: none"> • To identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line. • To identify and describe the properties of 3D shapes including the number of edge, vertices and faces. • To identify 2D shapes on the surface of 3D shapes, for examples a circle on a cylinder or a triangle on a pyramid.
<p>Measures: Length, mass, capacity and money.</p>	<ul style="list-style-type: none"> • To choose and use appropriate standard units to estimate and measure length/height in any direction (mm, cm, m); mass (g, kg); temperature ($^{\circ}\text{C}$); volume/capacity (ml, litres) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels. • To compare and order lengths, mass, volume/capacity and record the results using

	<p><, > and = (equals to) signs.</p>
<p>Number and Place Value: Estimating, counting and comparing quantities.</p>	<ul style="list-style-type: none"> • To count in steps of 2, 3 and 5 from 0, and count in tens from any number, forwards or backwards. • To recognise the place value of each digit in a two-digit number (tens, ones). • To identify, represent and estimate numbers using different representations, including the number line. • To compare and order numbers from 0 up to 100, using <, > and = (equals to) signs. • To read and write numbers to at least 100 in numerals and in words. • To use place value and number facts to solve problems.
<p>Addition and Subtraction: Using recall of addition and subtraction facts and mental calculation strategies.</p>	<ul style="list-style-type: none"> • To solve problems with addition and subtraction: <ul style="list-style-type: none"> ○ Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ○ Applying their increasing knowledge of mental and written methods. • To add and subtract using concrete objects, pictorial representations and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers. • To show that addition can be done in any order (commutative) and subtraction cannot. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
<p>Multiplication and Division: Repeated addition and subtraction, arrays, grouping and using times table facts.</p>	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers. • To calculate mathematical statements for multiplication and division with the multiplication tables and write them using the x, ÷ and = (equals to) signs. • To recognise and use the inverse relationship between multiplication and division in calculations. • To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot. • To solve one-step problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
<p>Fractions: Finding fractions of quantities, shapes and sets of objects.</p>	<ul style="list-style-type: none"> • To understand the concept that fractions are a part of a whole. • To recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$. • To write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.
<p>Geometry: Position, Direction and Motion. Measures: Time.</p>	<ul style="list-style-type: none"> • To order and arrange combinations of mathematical objects in patterns. • To use mathematical vocabulary to describe position, direction and movement including distinguishing between rotation as a turn and I terms of right angles for quarter, half and three-quarter turns

	<p>(clockwise and anti-clockwise) and movement in a straight line.</p> <ul style="list-style-type: none"> • To compare and sequence intervals of time. • To tell and write the time to five minutes, including quarter past/to the hour and draw the hands on an analogue clock face to show these times.
<p>Statistics: Solving problems that involve collecting data in tallies, tables and pictograms.</p>	<ul style="list-style-type: none"> • To interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • To ask and answer questions about totaling and comparing categorical data.
<p>Number and Place Value: Estimating, counting, comparing and ordering quantities.</p>	<ul style="list-style-type: none"> • To recognise the place value of each digit in a two-digit number (tens, ones). • To identify, represent and estimate numbers using different representations, including the number line. • To compare and order numbers from 0 up to 100, using $<$, $>$ and $=$ (equals to) signs. • To read and write numbers to at least 100 in numerals and in words.
<p>Addition and Subtraction: Using mental calculation strategies.</p>	<ul style="list-style-type: none"> • To solve problems with addition and subtraction: <ul style="list-style-type: none"> ○ Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ○ Applying their increasing knowledge of mental and written methods. • To add and subtract using concrete objects, pictorial representations and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers. • To show that addition can be done in any order (commutative) and subtraction can not. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
<p>Multiplication and Division: Repeated addition and subtraction, arrays, grouping and using times table facts.</p>	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers. • To calculate mathematical statements for multiplication and division with the multiplication tables and write them using the \times, \div and $=$ (equals to) signs. • To recognise and use the inverse relationship between multiplication and division in calculations. • To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot. • To solve one-step problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.

<p>Fractions: Finding fractions of quantities, shapes and sets of objects.</p>	<ul style="list-style-type: none"> • To recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$. • To write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.
<p>Geometry: Properties of 3D and 2D shapes.</p>	<ul style="list-style-type: none"> • To identify and describe the properties of 2D and 3D shapes, including the number of sides, symmetry in a vertical line, edges, vertices and faces. • To identify 2D shapes on a surface of 3D shapes and everyday objects. • To solve one-step problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts including problems in contexts.
<p>Measures: Length, mass (weight), capacity and money.</p>	<ul style="list-style-type: none"> • To choose and use appropriate standard units to estimate and measure length/height in any direction; mass; temperature; volume/capacity to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels. • To compare and order lengths, mass, volume/capacity and record the results using <, > and = (equals to) signs. • To recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. • To find different combinations of coins to equal the same amounts of money. • To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
<p>Number and Place Value: Estimating, counting, comparing and ordering quantities.</p>	<ul style="list-style-type: none"> • To recognise the place value of each digit in a two-digit number (tens, ones). • To identify, represent and estimate numbers using different representations, including the number line. • To compare and order numbers from 0 up to 100, using <, > and = (equals to) signs. • To read and write numbers to at least 100 in numerals and in words. • To use place value and number facts to solve problems. •
<p>Addition and Subtraction: Using partitioning and counting on strategies.</p>	<ul style="list-style-type: none"> • To solve problems with addition and subtraction. • Using concrete objects and pictorial representations including those involving numbers, quantities and measures. • Applying their increasing knowledge of mental and written methods. • To add and subtract using concrete objects, pictorial representations and mentally including: a 2-digit number and ones; a 2-digit number and tens; two 2-digit numbers and three 1-digit numbers. • To show that addition can be done in any order (commutative) and subtraction cannot. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
<p>Multiplication and Division: Repeated addition and subtraction, arrays, grouping</p>	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers.

and using times table facts.	<ul style="list-style-type: none"> • To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the x, ÷ and = (equals to) signs. • To recognise and use the inverse relationship between multiplication and division in calculations. • To solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
Fractions: Finding fractions of quantities, shapes and sets of objects.	<ul style="list-style-type: none"> ☑ To recognise, find, name and write fractions, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, $\frac{1}{2}$, $\frac{2}{2}$. • To write simple fractions for example $\frac{1}{2}$ of 18 = 9 and recognise the equivalence of two quarters and one half.
Geometry: Position, Direction and Motion. Measures: Time.	<ul style="list-style-type: none"> • To order and arrange combinations of mathematical objects in patterns. • To use mathematical vocabulary to describe position, direction and movement including distinguishing between rotation as a turn and I terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) and movement in a straight line. • To compare and sequence intervals of time. • To tell and write the time to five minutes, including quarter past/to the hour and draw the hands on an analogue clock face to show these times.
Solving problems by gathering data and representing in tallies, tables, pictograms and block diagrams.	<ul style="list-style-type: none"> • To interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • To ask and answer questions about totalling and comparing categorical data.
<u>Year 3</u>	
<u>Topic</u>	Curriculum Objectives (derived from 2014 Curriculum)
	Assess and Review – Formative and Summative assessment built in to assess the half term’s work.
Number and Place Value:	<ul style="list-style-type: none"> • To recognise the place value of each digit in a 3-digit number

Reading, writing and ordering 2- and 3-digit numbers.	<p>(hundreds, tens, ones).</p> <ul style="list-style-type: none"> • To compare and order numbers up to 100. • To read and write numbers up to 1000 in numerals and words.
Addition and Subtraction: Counting and estimating.	<ul style="list-style-type: none"> • To count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number. • To identify, represent and estimate numbers using different representations.
Addition and Subtraction: 1- and 2-digit numbers. Number facts to 20 and to 100.	<ul style="list-style-type: none"> • To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ○ A 3-digit number and ones. ○ A 3-digit number and tens. ○ A 3-digit number and hundreds. • To solve problems including missing number problems using number facts, place value and more complex addition and subtraction written methods (see Calculation Policy).
Multiplication and Division: Number facts.	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • To recognise the link between the 4 and 8 multiplication tables (8 times tables are double 4 times tables, 4 times tables are double 2 times tables etc). • To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know including for 2-digit numbers time 1-digit numbers, using mental and progressing to formal written methods (see Calculation Policy). • To solve problems including missing number problems involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects (see Calculation Policy).
Geometry: Recognising, describing and making 2D and 3D shapes.	<ul style="list-style-type: none"> • To draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them with increasing accuracy. • To identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.
Addition and Subtraction: 1- and 2-digit numbers. Number facts to 20 and to 100.	<ul style="list-style-type: none"> • To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ○ A 3-digit number and ones. ○ A 3-digit number and tens. ○ A 3-digit number and hundreds. • To solve problems including missing number problems using number facts, place value and more complex addition and subtraction written methods (see Calculation Policy).
Addition and Subtraction: 2- and 3-digit numbers using a number line and columns.	<ul style="list-style-type: none"> • To add and subtract numbers with up to 3-digits, using the efficient written methods of columnar addition and subtraction (see Calculation Policy). • To estimate the answer to a calculation and use inverse operations to check answers. • To solve problems, including missing number problems, using number facts, place value and more complex addition and

	subtraction written methods.
Multiplication and Division: Doubling, Halving and TU x U.	<ul style="list-style-type: none"> To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods (see Calculation Policy). To solve problems including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects (See Calculation Policy).
Fractions: Representing, comparing and ordering unit fractions of shapes and numbers.	<ul style="list-style-type: none"> To recognise, find and write fractions of a discrete set of objects; unit fractions and non-unit fractions with small denominators. To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. To compare and order unit fractions and fractions with the same denominator. To solve problems that involve all of the above.
Measures: Read and write time to 5 minute intervals.	<ul style="list-style-type: none"> To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clock. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hour and o'clock; use vocabulary such as am/pm, morning, afternoon, noon and midnight. To know the number of seconds in a minute and the number of days in each month, year and leap year. To compare durations of events, for example to calculate the time taken by particular events or tasks.
Statistics: Read, present and interpret bar charts, pictograms and tables.	<ul style="list-style-type: none"> To interpret and present data using bar charts, pictograms and tables. To solve one-step and two-step questions e.g. "How many more?" and "How many fewer?" using information presented in scaled bar charts, pictograms and tables. To discuss the best format for presenting different information i.e. bar charts, pictograms, tallies or tables.
Number and Place Value: Counting and rounding.	<ul style="list-style-type: none"> To count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number. To recognise the place value of each digit in a 3-digit number (hundreds, tens, ones). To compare and order numbers up to 1000. To identify, represent and estimate numbers using different representations. To read and write numbers up to 1000 in numerals and words. To solve number problems and practical problems involving these ideas.
Addition and	<ul style="list-style-type: none"> To add and subtract numbers mentally, including:

<p>Subtraction: Use partitioning to add and subtract 2-digit numbers.</p>	<ul style="list-style-type: none"> ○ A 3-digit number and ones. ○ A 3-digit number and tens. ○ A 3-digit number and hundreds. ● To estimate the answer to a calculation and use inverse operations to check answers. ● To solve problems including missing number problems using number facts, place value and more complex addition and subtraction written methods (see Calculation Policy).
<p>Multiplication and Division: Multiplying 1-digit numbers by multiples of 10. Practical and Informal Written Methods.</p>	<ul style="list-style-type: none"> ● To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. ● To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods. ● To solve problems including missing number problems involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
<p>Measures: Adding and subtracting money.</p>	<ul style="list-style-type: none"> ● To add and subtract amounts of money to give change, using both £ and p in practical contexts.
<p>Geometry: Recognising and drawing right angles in 2D shapes.</p>	<ul style="list-style-type: none"> ● To recognise angles as a property of shape and associate angles with turning. ● To identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.
<p>Addition and Subtraction: 2-digit numbers using columns.</p>	<ul style="list-style-type: none"> ● To add and subtract numbers with up to 3-digits, using the efficient written methods of columnar addition and subtraction. ● To estimate the answer to a calculation and use inverse operations to check answers. ● To solve problems including missing number problems, using number facts, place value and more complex addition and subtraction.
<p>Multiplication and Division: Multiplying by multiples of 10 and dividing with remainders. Multiplying and dividing larger numbers.</p>	<ul style="list-style-type: none"> ● To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. ● To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods. ● To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
<p>Measures: Measuring using standard units of measurement e.g. grams and kilograms.</p>	<ul style="list-style-type: none"> ● To measure, compare, add and subtract: lengths (mm, cm, m); mass (g, kg); volume/capacity (ml,l).
<p>Fractions:</p>	<ul style="list-style-type: none"> ● To count up and down in tenths; recognise that tenths arise from

<p>Representing, comparing and ordering unit and non-unit fractions of shapes and numbers.</p>	<p>dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10.</p> <ul style="list-style-type: none"> • To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. • To recognise and show, using diagrams, equivalent fractions with small denominators. • To compare and order unit fractions, and fractions with the same denominators. • To solve problems that involve all of the above.
<p>Statistics: Read and interpret bar charts, using scales.</p>	<ul style="list-style-type: none"> • To interpret and present data using bar charts, pictograms and tables. • To solve one-step and two-step questions such as “How many more?” and “How many fewer?” using information presented in scaled bar charts, pictograms and tables.
<p>Number and place value: Read, write, order and round 2- and 3-digit numbers.</p>	<ul style="list-style-type: none"> • To count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number. • To recognise the place value of each digit in a 3-digit number (hundreds, tens, ones). • To compare and order numbers up to 1000. • To identify, represent and estimate numbers using different representations. • To read and write numbers up to 1000 in numerals and words. • To solve number problems and practical problems involving these ideas.
<p>Multiplication and Division: Solving problems.</p>	<ul style="list-style-type: none"> • To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods. • To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
<p>Addition and Subtraction: 3-digit numbers and ones, tens and hundreds.</p>	<ul style="list-style-type: none"> • To add and subtract numbers with up to 3-digits, using the efficient written methods of columnar addition and subtraction. • To estimate the answer to a calculation and use inverse operations to check answers. • To solve problems including missing number problems, using number facts, place value and more complex addition and subtraction.
<p>Shape: Identifying horizontal, vertical and curved lines.</p>	<ul style="list-style-type: none"> • To draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them with increasing accuracy. • To recognise angles as a property of shape and associate angles with turning.

	<ul style="list-style-type: none"> To identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 complete a turn; identify whether angles are greater or less than a right angle. To identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.
Measures: Measuring using standard units e.g. millilitres and litres.	<ul style="list-style-type: none"> To measure, compare, add and subtract: lengths (mm, cm, m); mass (g, kg); volume/capacity (ml, l).
Addition and Subtraction: 2-digit numbers using columns.	<ul style="list-style-type: none"> To add and subtract numbers with up to 3-digits, using the efficient written methods of columnar addition and subtraction. To estimate the answer to a calculation and use inverse operations to check answers. To solve problems including missing number problems, using number facts, place value and more complex addition and subtraction.
Multiplication and Division: Written methods. Short multiplication and division (see Calculation Policy).	<ul style="list-style-type: none"> To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods. To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
Fractions: Equivalence, addition and subtraction within 1, finding tenths.	<ul style="list-style-type: none"> To count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10. To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. To recognise and show, using diagrams, equivalent fractions with small denominators. To add and subtract fractions with the same denominator within one whole e.g. $5/7 + 1/7 = 6/7$. To solve problems that involve all of the above.
Measures: Read and write time using 12 and 24 hour clocks.	<ul style="list-style-type: none"> To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clock. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hour and o'clock; use vocabulary such as am/pm, morning, afternoon, noon and midnight. To know the number of seconds in a minute and the number of days in each month, year and leap year. To compare durations of events, for example to calculate the time taken by particular events or tasks.
Statistics: To construct and	<ul style="list-style-type: none"> To interpret and present data using bar charts, pictograms and tables.

interpret bar charts using scales.	<ul style="list-style-type: none"> To solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables.
------------------------------------	---

<u>Year 4</u>	
<u>Topic</u>	Curriculum Objectives (derived from 2014 Curriculum) Assess and Review – Formative and Summative assessment built in to assess the half term’s work.
Number and Place Value: Number, Place Value and rounding.	<ul style="list-style-type: none"> To recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones). To identify, represent and estimate numbers using different representations. To order and compare numbers beyond 1000. To round any number to the nearest 10, 100 or 1000. To count in multiples of 6,7, 9, 25, 1000. To find 1000 more or less than a given numbers.
Addition and Subtraction: Written methods.	<ul style="list-style-type: none"> To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction when appropriate. To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Multiplication: Rapid recall.	<ul style="list-style-type: none"> To recall multiplication facts for multiplication tables up to 12 x 12. To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three 1-digit numbers. To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
Geometry: Properties of shapes.	<ul style="list-style-type: none"> To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. To identify lines of symmetry in 2D shapes presented in different orientations. To complete a simple symmetrical figure with respect to a specific line of symmetry.
Measures: Converting units of measurement.	<ul style="list-style-type: none"> To convert between different units of measure (e.g. kilometre to metre, hour to minute). To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. To solve problems involving converting from hours to minutes;

	<p>minutes to seconds; years to months; weeks to days.</p> <ul style="list-style-type: none"> To estimate, compare and calculate different measures, including money in pounds and pence.
<p>Addition and Subtraction: Mental and written methods.</p>	<ul style="list-style-type: none"> To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. To estimate and use the inverse operations to check answers to a calculation. To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
<p>Multiplication: Rapid recall, mental strategies and written methods.</p>	<ul style="list-style-type: none"> To recall multiplication facts for multiplication tables up to 12 x 12. To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1, multiplying together three 1-digit numbers. To recognise and use factor pairs and commutativity in mental calculations. To multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
<p>Fractions: Counting and calculating fractions, recognising equivalence.</p>	<ul style="list-style-type: none"> To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. To 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. To recognise and show, using diagrams, families of common equivalent fractions.
<p>Geometry: Coordinates and geometric shapes; identifying and comparing angles.</p>	<ul style="list-style-type: none"> To describe positions on a 2D grid as coordinates in the first quadrant. To plot specified points and draw sides to complete a given polygon. To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. To identify acute and obtuse angles and compare and order angles up to two right angles by size.
<p>Data Handling and Time: Presenting, comparing and problem solving with data; reading and converting time.</p>	<ul style="list-style-type: none"> To read, write and convert time between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. (ICT) To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs.
<p>Number and Place Value: Number, place value and rounding.</p>	<ul style="list-style-type: none"> To recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones). To identify, represent and estimate numbers using different

	<p>representations.</p> <ul style="list-style-type: none"> • To order and compare numbers beyond 1000. • To round any number to the nearest 10, 100 or 1000. • To count in multiples of 6,7, 9, 25, 1000. • To find 1000 more or less than a given numbers.
<p>Addition and Subtraction: Mental and written methods.</p>	<ul style="list-style-type: none"> • To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction when appropriate. • To estimate and use inverse operations to check answers to a calculation. • To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. • To estimate, compare and calculate different measures, including money in pounds and pence.
<p>Multiplication: Mental and written methods.</p>	<ul style="list-style-type: none"> • To recall multiplication facts for multiplication tables up to 12 x 12. • To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; multiplying together three 1-digit numbers. • To recognise and use factor pairs and commutativity in mental calculations. • To multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. • To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
<p>Division: Mental and written methods.</p>	<ul style="list-style-type: none"> • To recall division facts for multiplication tables up to 12 x 12. • To use place value, known and derived facts to multiply and divide mentally, including dividing by 1.
<p>Fractions: Counting and calculating fractions, recognising equivalence.</p>	<ul style="list-style-type: none"> • To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. • To 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. • To recognise and show, using diagrams, families of common equivalent fractions.
<p>Fractions and Decimals: Calculating, counting, rounding, comparing and solving problems.</p>	<ul style="list-style-type: none"> • To recognise and write decimal equivalents of any number of tenths or hundredths. • To recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$. • To find the effect of dividing a one- or two-digit number by 10 and 100; identifying the values of the digits in the answer as units, tenths and hundredths. • To round decimals with one decimal place to the nearest whole number. • To compare numbers with the same number of decimal places up to two decimal places.

	<ul style="list-style-type: none"> To solve simple measure and money problems involving fractions and decimals to two places.
<p>Mental Calculation: Solving problems, checking strategies and rapid recall.</p>	<ul style="list-style-type: none"> To estimate and use inverse operations to check answers to a calculation. To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. To recall multiplication and division facts for multiplication tables up to 12 x 12. To recognise and use factor pairs and commutativity in mental calculations. To solve problems involving multiplying and adding, including the distributive law and harder multiplication problems such as which n objects are connected to m objects (See Calculation Policy).
<p>Addition and Subtraction: Written methods.</p>	<ul style="list-style-type: none"> To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. To estimate and use inverse operations to check answers to a calculation. To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
<p>Measures: Converting units of time; Solving problems that inv.</p>	<ul style="list-style-type: none"> To read, write and convert between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months and weeks to days.
<p>Multiplication and Division: Written methods.</p>	<ul style="list-style-type: none"> To recall multiplication facts for multiplication tables up to 12 x 12. To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; multiplying together three 1-digit numbers. To recognise and use factor pairs and commutativity in mental calculations. To multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
<p>Geometry: Translations, Coordinates and properties of shape.</p>	<ul style="list-style-type: none"> To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. To identify acute and obtuse angles and compare and order angles up to two right angles by size. To describe positions on a 2D grid as coordinates in the first quadrant. To describe movements between positions as translations of a give unit to the left/right and up/down. To plot specified points and draw sides to complete a given polygon.
<p>Data Handling and Measurement: Interpreting, Presenting and solving</p>	<ul style="list-style-type: none"> To interpret and present discrete data using bar charts and continuous data using time graphs. To solve comparison, sum and difference problems using

<p>problems with data; Converting and calculating different units of measurement.</p>	<p>information presented in bar charts, pictograms, tables and simple line graphs.</p> <ul style="list-style-type: none"> • To convert between different units of measures (kilometre to metre; hour to minute). • To estimate, compare and calculate different measures, including money in pounds and pence.
<p>Number and Place Value: Counting, Rounding and Negative Numbers.</p>	<ul style="list-style-type: none"> • To count in multiples of 6, 7, 9, 25 and 1000. • To find 1000 more or less than a given number. • To count backwards through zero to include negative numbers. • To recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones). • To order and compare numbers beyond 1000. • To identify, represent and estimate numbers using different representations. • To round any number to the nearest 10, 100 or 1000. • To solve number and practical problems that involve all of the above with increasingly large positive numbers.
<p>Addition, Subtraction and Measures: Mental addition and subtraction with measures (using measures as a context for problem solving).</p>	<ul style="list-style-type: none"> • To estimate and use inverse operations to check answers to a calculation. • To solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why. • To estimate, compare and calculate different measures, including money in pounds and pence.
<p>Addition, Subtraction and Measures: Written addition and subtraction with measures (using measures as a context for problem solving).</p>	<ul style="list-style-type: none"> • To add and subtract numbers with up to 4-digits using the efficient written methods of columnar addition and subtraction where appropriate. • To estimate and use inverse operations to check answers to a calculation. • To solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why.
<p>Multiplication and Division: Mental and written methods.</p>	<ul style="list-style-type: none"> • To recall multiplication and division facts for multiplication tables up to 12 x 12. • To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three 1-digit numbers. • To recognise and use factor pairs and commutativity in mental calculations. • To multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m
<p>Fractions: Counting, Calculating, Equivalence and problem solving.</p>	<ul style="list-style-type: none"> • To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. • To solve problems involving increasingly harder fractions to calculate

	<p>quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.</p> <ul style="list-style-type: none"> • To recognise and show, using diagrams, families of common equivalent fractions. • To add and subtract fractions with the same denominator.
Measures: Area and perimeter of rectilinear shapes and capacity.	<ul style="list-style-type: none"> • To convert between different units of measure (litres to ml). • To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. • To find the area of rectilinear shapes by counting. • To estimate, compare and calculate different measures, including capacity measures and money in pounds and pence.
Mental Calculations	<ul style="list-style-type: none"> • To estimate and use inverse operations to check answers to a calculation. • To solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why. • To recall multiplication and division facts for multiplication tables up to 12 x 12. • To recognise and use factor pairs and commutativity in mental calculations. • To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to which m objects.
Measures: Converting, Estimating, calculating and solving problems.	<ul style="list-style-type: none"> • To convert between different units of measure (km to m, hour to minute). • To measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m. • To find the area of rectilinear shapes by counting. • To estimate, compare and calculate different measures, including money in pounds and pence. • To read, write and convert time between analogue and digital 12- and 24-hour clocks. • To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
Addition and Subtraction: Written methods.	<ul style="list-style-type: none"> • To add and subtract numbers with up to 4-digits using the efficient written methods of columnar addition and subtraction where appropriate. • To estimate and use inverse operations to check answers to a calculation. • To solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and Division: Written methods.	<ul style="list-style-type: none"> • To recall multiplication and division facts for multiplication tables up to 12 x 12. • To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying

	<p>together three 1-digit numbers.</p> <ul style="list-style-type: none"> • To recognise and use factor pairs and commutativity in mental calculations. • To multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. • To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
Geometry: 2D shape, angles and coordinates.	<ul style="list-style-type: none"> • To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. • To identify acute and obtuse angles and compare and order angles up to two right angles by size. • To identify lines of symmetry in 2D shapes presented in different orientations. • To describe positions on a 2D grid as coordinates in the first quadrant. • To describe movements between positions as translations of a given unit to the left/right and up/down. • To plot specified points and draw sides to complete a given polygon.
Statistics: Interpreting and presenting data; Solving data problems.	<ul style="list-style-type: none"> • To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. • To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs.

Year 5

<u>Topic</u>	Curriculum Objectives (derived from 2014 Curriculum)
	Assess and Review – Formative and Summative assessment built in to assess the half term’s work.
Number and Place Value: Place value of numbers to 1,000,000.	<ul style="list-style-type: none"> • To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit. • To count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000.
Addition and Subtraction: Mental and written methods.	<ul style="list-style-type: none"> • To add and subtract whole numbers with more than 4-digits, including using efficient written methods (columnar addition and subtraction). • To add and subtract numbers mentally with increasingly large numbers. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and Division: Factors, prime and composite numbers.	<ul style="list-style-type: none"> • To identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. • To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors. • To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • To establish whether a number up to 100 is prime and recall prime numbers up to 19.
Multiplication and Division: Mental methods.	<ul style="list-style-type: none"> • To multiply and divide numbers mentally drawing upon known facts. • To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Geometry:	<ul style="list-style-type: none"> • To know angles are measured in degrees; estimate and compare

	<p>acute, obtuse and reflex angles.</p> <ul style="list-style-type: none"> • To draw given angles, and measure them in degrees using the ° symbol. • To identify: <ul style="list-style-type: none"> ○ Angles at a point and one whole turn (total 360°). ○ Angles at a point on a straight line and ½ a turn (total 180°). ○ Other multiples of 90°.
Measures: Length, perimeter and area.	<ul style="list-style-type: none"> • To convert between different units of measure (for example, kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). • To understand and use equivalences between metric units and common imperial units such as inches, pounds and pints. • To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation and scaling. • To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. • To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.
Multiplication: Written methods.	<ul style="list-style-type: none"> • To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • To multiply numbers up to 4-digits by a 1- or 2-digit number using an efficient written method, including long multiplication for 2-digit numbers. • To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates (See Calculation Policy).
Division: Division with 4-digit numbers.	<ul style="list-style-type: none"> • To divide numbers up to 4-digits by a 1-digit number using the efficient written method of short division and interpret remainders appropriately for the context. • To multiply and divide numbers mentally drawing upon known facts. • To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Fractions and Decimals: Tenths and Hundredths.	<ul style="list-style-type: none"> • To compare and order fractions whose denominators are all multiples of the same number. • To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. • To read and write decimal numbers as fractions (e.g. 0.71 = 71/100).
Decimals: Tenths, Hundredths and Thousandths.	<ul style="list-style-type: none"> • To read, write, order and compare numbers with up to three decimal places. • To read and write decimal numbers as fractions. • To round decimals with two decimal places to the nearest whole numbers and to one decimal place. • To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. • To solve problems involving number up to three decimal places.

<p>Geometry: 2D and 3D shapes.</p>	<ul style="list-style-type: none"> • To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • To use the properties of rectangles to deduce related facts and find missing lengths and angles. • To identify 3D shapes, including cubes and cuboids from 2D representations.
<p>Statistics: Tables and Bar Charts.</p>	<ul style="list-style-type: none"> • To complete, read and interpret information in tables, including timetables.
<p>Number and Place Value: Negative numbers, Rounding and solving problems involving numbers.</p>	<ul style="list-style-type: none"> • To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit. • To count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000. • To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero. • To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10 000 and 100,000. • To solve number problems and practical problems that involve all of the above.
<p>Addition and Subtraction: Mental and written methods.</p>	<ul style="list-style-type: none"> • To add and subtract whole numbers with more than 4-digits, including using efficient written methods (columnar addition and subtraction). • To add and subtract numbers mentally with increasingly large numbers. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • To solve problems involving numbers up to three decimal places.
<p>Multiplication: Long multiplication, square numbers and cube numbers.</p>	<ul style="list-style-type: none"> • To multiply and divide numbers mentally drawing upon known facts. • To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. • To multiply numbers up to 4-digits by a 1- or 2-digit number using an efficient written method, including long multiplication for 2-digit numbers. • To recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). • To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.
<p>Fractions: Adding and subtracting fractions.</p>	<ul style="list-style-type: none"> • To recognise mixed numbers and improper fractions and convert from one form to the other, write mathematical statements > 1 as a mixed number: $2/5 + 4/5 = 6/5 = 11/5$ (= symbol referred to as equals to).

	<ul style="list-style-type: none"> To add and subtract fractions with the same denominator and multiples of the same number.
Geometry: Reflections and translations.	<ul style="list-style-type: none"> To identify, describe and represent the position of a shape following a reflection or translation using the appropriate language and know that the shape has not changed.
Measures: Mass.	<ul style="list-style-type: none"> To convert between different units of measure (km to m, m and cm, cm and mm, kg and g, l and ml). To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints. To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.
Addition and Subtraction: Mental and written methods.	<ul style="list-style-type: none"> To add and subtract whole numbers with more than 4-digits, including using efficient written methods (columnar addition and subtraction). To add and subtract numbers mentally with increasingly large numbers. To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Multiplication and Division: Written methods.	<ul style="list-style-type: none"> To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. To multiply numbers up to 4-digits by a 1- or 2-digit number using an efficient written method, including long multiplication for 2-digit numbers. To divide numbers up to 4-digits by a 1-digit number using the efficient written method of short division and interpret remainders, appropriately for the context. To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the is equal to sign (=).
Fractions: Adding and subtracting fractions.	<ul style="list-style-type: none"> To recognise mixed numbers and improper fractions and convert from one form to the other, write mathematical statements > 1 as a mixed number: $2/5 + 4/5 = 6/5 = 11/5$ (= symbol referred to as equals to or is equal to). To add and subtract fractions with the same denominator and multiples of the same number. To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
Percentages.	<ul style="list-style-type: none"> To 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 of a hundred, and as a decimal fraction.
Measures: Measuring, Converting and Estimating	<ul style="list-style-type: none"> To convert between different units of measure (km to m, m and cm, cm and mm, kg and g, l and ml).

Capacity.	<ul style="list-style-type: none"> • To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints. • To estimate volume and capacity. • To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.
Statistics: Line graphs/ comparative graphs.	<ul style="list-style-type: none"> • To solve comparison, sum and different problems using information presented in a line graph. • To discuss and understand which types of graphs suit which types of data sets.
Numbers and Place Value: Negative numbers and Roman numerals.	<ul style="list-style-type: none"> • To count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000. • To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero. • To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10 000 and 100,000. • To solve number problems and practical problems that involve all of the above. • To read numerals to 1000 (M) and recognise years written in Roman numerals.
Addition and Subtraction: Mental and written methods.	<ul style="list-style-type: none"> • To add and subtract whole numbers with more than 4-digits, including using efficient written methods (columnar addition and subtraction). • To add and subtract numbers mentally with increasingly large numbers. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • To solve problems involving numbers up to three decimal places.
Multiplication and Division: Long multiplication and Division with Remainders.	<ul style="list-style-type: none"> • To multiply numbers up to 4-digits by a 1- or 2-digit number using an efficient written method, including long multiplication for 2-digit numbers. • To divide numbers up to 4-digits by a 1-digit number using the efficient written method of short division and interpret remainders, appropriately for the context. • To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the is equal to sign (=).
Fractions: Adding and subtracting fractions.	<ul style="list-style-type: none"> • To recognise mixed numbers and improper fractions and convert from one form to the other, write mathematical statements > 1 as a mixed number: $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ (= symbol referred to as equals to or is equal to). • To add and subtract fractions with the same denominator and

	<p>multiples of the same number.</p>
<p>Geometry: Diagonals and problems involving angles.</p>	<ul style="list-style-type: none"> • To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. • To draw given angles, and measure them in degrees (°). • To identify: <ul style="list-style-type: none"> • Angles at a point and one whole turn (total 360°). • Angles at a point on a straight line and ½ a turn (total 180°). • Other multiples of 90°. • To use the properties of a rectangle to deduce related facts and find missing lengths and angles. • To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
<p>Measures: Volume, Time and Money.</p>	<ul style="list-style-type: none"> • To estimate volume (e.g. using 1cm³ blocks to build cubes and cuboids) and capacity (e.g. using water). • To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. • To solve problems involving converting between units of time.
<p>Addition and Subtraction: Mental and written methods.</p>	<ul style="list-style-type: none"> • To add and subtract whole numbers with more than 4-digits, including using efficient written methods (columnar addition and subtraction). • To add and subtract numbers mentally with increasingly large numbers. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
<p>Multiplication and Division: Money.</p>	<ul style="list-style-type: none"> • To multiply numbers up to 4-digits by a 1- or 2-digit number using an efficient written method, including long multiplication for 2-digit numbers. • To multiply and divide numbers mentally, drawing upon known facts. • To identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. • To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors (See Calculation Policy). • To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the is equal to sign (=).
<p>Percentages: Solving Problems.</p>	<ul style="list-style-type: none"> • To 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 of a hundred, and as a decimal fraction. • To solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 4/5 and those with a denominator of a multiple of 10 or 25.
<p>Geometry and Measures: Perimeter, area and scale drawing.</p>	<ul style="list-style-type: none"> • To measure and calculate the perimeter of composite rectilinear shapes in cm and m. • To calculate and compare the area of squares and rectangles

	<p>using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.</p> <ul style="list-style-type: none"> To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Statistics: Using tables and line graphs.	<ul style="list-style-type: none"> To complete, read and interpret information in tables, including timetables. To solve comparison, sum and difference problems using information presented in a line graph.

<u>Year 6</u>	
<u>Topic</u>	Curriculum Objectives (derived from 2014 Curriculum) Assess and Review – Formative and Summative assessment built in to assess the half term’s work.
Number and Place Value: Place value and rounding.	<ul style="list-style-type: none"> To read, write, order and compare numbers at least to 10,000,000 and determine the value of each digit. To round any whole number to a required degree of accuracy. To solve number problems and practical problems that involve all of the above.
Addition and Subtraction: Mental and written strategies.	<ul style="list-style-type: none"> To perform mental calculations, including with mixed operations and large numbers. To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and Division: Multiples, factors and prime numbers.	<ul style="list-style-type: none"> To perform mental calculations, including with mixed operations and large numbers. To identify common factors, common multiples and prime numbers. To solve problems involving addition, subtraction, multiplication and division.
Multiplication and Division:	<ul style="list-style-type: none"> To multiply multi-digit numbers up to 4-digits by a 2-digit

<p>Written methods for multiplication and division: HTU x TU and HTU x U.</p>	<p>whole number using the efficient written method of long multiplication.</p> <ul style="list-style-type: none"> • To divide numbers up to 4-digits by a 2-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context. • To solve problems, involving addition, subtraction, multiplication and division. • To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<p>Geometry: Circles and angles.</p>	<ul style="list-style-type: none"> • To illustrate and name parts of circles, including radius, diameter and circumference. • To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
<p>Measures: Units of measure.</p>	<ul style="list-style-type: none"> • To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate. • To 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 three decimal places.
<p>Multiplication and Division: Written methods.</p>	<ul style="list-style-type: none"> • To multiply multi-digit numbers up to 4-digits by a 2-digit whole number using the efficient written method of long division (see Calculation policy). • To divide numbers up to 4-digits by a 2-digit whole number using efficient written methods of long division; interpret remainders as whole numbers, remainders, fractions or by rounding to the appropriate context.
<p>Fractions: Comparing, ordering and simplifying fractions.</p>	<ul style="list-style-type: none"> • To compare and order fractions > 1. • To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
<p>Multiplication and Division: Multiplying decimals by 10, 100 and 1000.</p>	<ul style="list-style-type: none"> • To identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100, 1000 where the answers are up to three decimal places. • To solve problems which require answers to be rounded to specified degrees of accuracy.
<p>Calculation: Order of calculations.</p>	<ul style="list-style-type: none"> • To perform mental calculations, including with mixed operations and large numbers. • To use their knowledge of the order of operations to carry out calculations involving the four operations. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • To solve problems involving addition, subtraction, multiplication and division. • To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

<p>Geometry: 2D and 3D shapes.</p>	<ul style="list-style-type: none"> ● To draw 2D shapes using given dimensions and angles. ● To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. ● To recognise, describe and build simple 3D shapes, including making nets.
<p>Statistics: Pie charts.</p>	<ul style="list-style-type: none"> ● To interpret and construct pie charts and line graphs and use these to solve problems.
<p>Number and Place Value: Negative numbers, and solving problems involving numbers</p>	<ul style="list-style-type: none"> ● To read, write, order and compare numbers at least to 10,000,000 and determine the value of each digit. ● To round any whole number to a required degree of accuracy. ● To use negative numbers in context, and calculate intervals across zero. ● To solve number problems and practical problems that involve all of the above.
<p>Calculation: Mental and written addition and subtraction of decimals and money</p>	<ul style="list-style-type: none"> ● To perform mental calculations, including with mixed operations and large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<p>Multiplication and Division: Mental and written multiplication and division</p>	<ul style="list-style-type: none"> ● To perform mental calculations, including with mixed operation and large numbers. ● To identify common factors, common multiples and prime numbers (Children could practise using mental methods that involve using factors, for example.) ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<p>Calculation: Calculating with fractions</p>	<ul style="list-style-type: none"> ● To add and subtract fractions with different denominators, using the concept of equivalent fractions. ● To associate a fraction with division to calculate decimal fraction equivalents (0.375) for a simple fraction (3/8). ● To multiply simple pairs of proper fractions, writing the answer in its simplest form ($1/4 \div 1/2 = 1/8$). ● To divide proper fractions by whole numbers ($1/3 \div 2 = 1/6$).
<p>Geometry: Reflections and translations on coordinate axes</p>	<ul style="list-style-type: none"> ● To describe positions on the full co-ordinate grid (all four quadrants). ● To draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.
<p>Measurement: Perimeter, area and volume</p>	<ul style="list-style-type: none"> ● To recognise that shapes with the same area can have different perimeters and vice versa. ● To calculate the area of parallelograms and triangles. ● To recognise when it is necessary to use the formulae for area and volume of shapes. ● To calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³) and extending to other units such as mm³ and km³.

<p>Calculation: Calculating with large numbers</p>	<ul style="list-style-type: none"> ● To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication. ● To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. ● To perform mental calculations, including with mixed operations and large numbers. ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To solve problems involving addition, subtraction, multiplication and division.
<p>Multiplication and Division: Multiplying and dividing decimals</p>	<ul style="list-style-type: none"> ● To multiply one-digit numbers with up to two decimal places by whole numbers. ● To use written division methods in cases where the answer has up to two decimal places. ● To solve problems which require answers to be rounded to specified degrees of accuracy.
<p>Numbers and Fractions: Percentages, decimals and fractions</p>	<ul style="list-style-type: none"> ● To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison. ● To recall and use equivalences between simple fractions, decimals and percentages, including different contexts.
<p>Algebra: Simple formulae</p>	<ul style="list-style-type: none"> ● To express missing number problems algebraically. ● To use simple formulae expressed in words. ● To find pairs of numbers that satisfy number sentences involving two unknowns. ● To enumerate all possibilities of combinations of two variables.
<p>Measurement: Area and volume</p>	<ul style="list-style-type: none"> ● To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places, where appropriate. To 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 three decimal places. ● To calculate the area of parallelograms and triangles. ● To recognise when it is necessary to use the formulae for area and volume of shapes.
<p>Data Handling: Line graphs</p>	<ul style="list-style-type: none"> ● To interpret and construct pie charts and line graphs and use these to solve problems.
<p>Number and Place Value: Problems involving number</p>	<ul style="list-style-type: none"> ● To read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. ● To round any whole number to a required degree of accuracy. ● To use negative numbers in context and calculate intervals across zero. ● To solve number problems and practical problems that involve all the above.
<p>Calculation: Adding</p>	<ul style="list-style-type: none"> ● To perform mental calculations, including with mixed operations

and subtracting large and small numbers	<p>and large numbers.</p> <ul style="list-style-type: none"> ● To solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<p>Multiplication and Division: Long multiplication and division</p>	<ul style="list-style-type: none"> ● To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written methods of long multiplication. ● To divide numbers up to 4 digits by two digit whole numbers using the efficient written method of long division and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<p>Fractions: Working with fractions</p>	<ul style="list-style-type: none"> ● To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. ● To multiply simple pairs of proper fractions, writing the answer in its simplest form. ● To divide proper fractions by whole numbers.
<p>Numbers and Fractions: Problems involving percentages, fractions and decimals</p>	<ul style="list-style-type: none"> ● To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison. ● To recall and use equivalences between simple fractions, decimals and percentages including in different contexts.
<p>Ratio and proportion: Solving problems with ratio and proportion</p>	<ul style="list-style-type: none"> ● To solve problems involving the relative size of two quantities where missing values can be found by using integer multiplication and division facts. <p>To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p> <ul style="list-style-type: none"> ● To solve problems involving similar shapes where the scale factor is known or can be found.
<p>Calculation: Solving problems involving money</p>	<ul style="list-style-type: none"> ● To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication. ● To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. ● To perform mental calculations, including with mixed operations and large numbers. ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To solve problems involving addition, subtraction, multiplication and division. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<p>Algebra: Number puzzles</p>	<ul style="list-style-type: none"> ● To express missing number problems algebraically. ● To use simple formulae expressed in words.

	<ul style="list-style-type: none"> ● To generate and describe linear number sequences. ● To find pairs of numbers that satisfy number sentences involving two unknowns. ● To enumerate all possibilities of combinations of two variables.
Fractions: Fractions with different denominators	<ul style="list-style-type: none"> ● To multiply simple pairs of proper fractions, writing the answer in its simplest form ($1/4 \div 1/2 = 1/8$). ● To use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ● To add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions.
Numbers and percentages: Problems involving percentages and decimals	<ul style="list-style-type: none"> ● To solve problems involving the calculation of percentages of whole numbers or measures such as 15% of 360 and the use of percentages for comparison. ● To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Measurement: Problems involving measures	<ul style="list-style-type: none"> ● To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate. ● To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a large unit and vice versa, using decimal notation to three decimal places.
Data Handling: Using data	<ul style="list-style-type: none"> ● To interpret and construct pie charts and line graphs and use these to solve problems. ● To calculate and interpret the mean as an average.