



Maths at Burbage Primary School

The mastery model of learning

Curriculum Intent

Mathematics is an important creative discipline that helps us to understand and change the world. We want all pupils at Burbage Primary School to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject.

At Burbage Primary School, we foster positive 'can do' attitudes, believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems before acceleration through new content.

Curriculum Intent: Skills

We aim for all pupils to:

- + Become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- + Solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios.
- + Reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
- + Have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately.

Curriculum Implementation

Mathematics Lessons: Teach Up Daily	
'Learning Together'	'Support and Challenge'

Maths on Track: Keep Up Daily
Deliberate Practice Sessions Arithmetic/Intervention/Practice

Mathematics Lessons

Each lesson focuses on a manageable step of new learning based on the National Curriculum statements.

Typical Lesson design:

- 1) **Hook It:** Introduction
- 2) **Teach It:** Live modelling of the new learning with explicit use of potential misunderstandings
- 3) **Practise It:** All children practise together **Support & Challenge**
- 4) **Do It:** Up to 5 examples – 5 'What it is' or '3+2 'What it is/What it's also' **Challenge 1: Procedural Fluency**
- 5) **Secure It:** 1 or 2 Misunderstandings (True/false, Spot the mistake) **Challenge 2: Conceptual Understanding**
- 6) **Deepen It:** Apply understanding to solve new problems **Challenge 3: Mathematical Thinking**
- 7) **Review It:** Lesson Recap: Key Concept Statement and Key Vocabulary

MathsOnTrack (MOT) Sessions

Day 1 : Arithmetic

Day 2 : Arithmetic

Day 3 : Deliberate Practice: Past and Present

Day 4: Deliberate Practice: Past and Present

Day 5: Fact Friday

Teachers use AfL to inform Maths On Track Sessions and may use the suggestions for MOT Sessions flexibly to meet pupils needs.

Year One

Term 1

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Count to and across 100, forwards and backwards, beginning with 0 or 1</p> <p>Count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens or from any given number</p> <p>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of <i>equal to</i>, <i>more than</i>, <i>less than (fewer)</i>, <i>most</i>, <i>least</i></p> <p>Given a number, identify one more and one less</p> <p>Read and write numbers from 1 to 20 in numerals and words</p> <p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>Recognise and name common 2D and 3D shapes, including 2D shapes eg rectangles (including</p>	<p>Counting forwards</p> <p>Deliberate Practice: Past and Present</p> <p>1 more up to 10</p> <p>1 less up to 10</p> <p>1 less up to 20</p> <p>1 more up to 30</p> <p>Count objects</p> <p>Know teens are ten and the rest</p> <p>Number Bonds of 5 +</p> <p>Remember It</p> <p>Number Bonds of 5 +/-</p>

squares) circles and triangles, and 3D shapes eg cuboids, including cubes, pyramids and spheres	
<p>Conceptual Vocabulary:</p> <p>Place Value: zero, one, two, three... to twenty, ones, tens, tens frame, digit, number, numeral, position, more, less, greater, larger, smaller</p> <p>Geometry: Properties of Shape: 2D shape, sides, straight, rectangle, square, circle, triangle, equal</p> <p>Addition & Subtraction: zero, one, two, three... to twenty, thirty, digit, plus, total, altogether, addend, subtract, take away, left, partition</p>	

Term 2

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Count to and across 100, forwards and backwards, beginning with 0 or 1	Read and write numbers
Identify and represent numbers using objects and pictorial representations including the number line, and use the language of <i>equal to</i> , <i>more than</i> , <i>less than (fewer)</i> , <i>most</i> , <i>least</i>	Count fluently from any number to and across 100
Given a number, identify one more and one less	Deliberate Practice: Past and Present
Count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens or from any given number	Number Bonds of 6 +
Represent and use number bonds and related subtraction facts within 20	Read and write numbers
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$	Number Bonds of 6 +/-
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Read and write numbers
	Number Bonds of 7 +
	Compare numbers
	Know 1 more than

<p>Recognise and name common 2D and 3D shapes, including 2D shapes eg rectangles (including squares) circles and triangles, and 3D shapes eg cuboids, including cubes, pyramids and spheres</p>	<p>numbers</p> <p>Number Bonds of 7 +/-</p> <p>Number Bonds of 8 +</p> <p>Number Bonds of 8 +/-</p> <p>Order numbers and position them on a number line</p> <p>Know 1 less than numbers Number Bonds of 9 +</p>
<p>Conceptual Vocabulary:</p> <p>Number and Place Value: up to 100: zero, one, two, three... to twenty, thirty, forty, fifty, one hundred, tens, ones, digit, number, position, more, less, greater, larger, smaller.</p> <p>Addition and Subtraction: Facts of 7 – 11: zero, one, two, three... to ten, thirty, digit, plus, total, altogether, addend, subtract, take away, left, partition</p> <p>Geometry: Properties of Shapes: solid, 3-D shape, face, cuboid, rectangle, cube, square, triangle, triangular, flat, curved, sphere</p>	

Term 3

<p>Maths Lessons: Intelligent Practice</p>	<p>Maths on Track: Deliberate Practice</p>
<p>Represent and use number bonds and related subtraction facts within 20</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$.</p>	<p>Know 1 less than numbers</p> <p>Deliberate Practice: Past and Present</p> <p>Number Bonds of 9 +</p>

Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

Compare, describe and solve practical problems for lengths and heights, mass or weight, capacity/volume, time

Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time

Order numbers and position them on a number line

Number Bonds of 9
+/-

Count fluently back from any number

Subtract a single digit number from a teens number

Number Bonds of 10
+

Subtract a single digit number from a teens number

Number Bonds of 10
+/-

Count fluently back from any number

Number Bonds of 10
+

Recall and use addition facts of 10

Recall and use subtraction facts of 10

Number Bonds of 10
+/-

Conceptual Vocabulary:

Addition and Subtraction: partition whole, part, addition, addend, plus, altogether, subtraction, take away, left, total

Measurement: Length: longer than, shorter than, longest, shortest, taller than, shorter than, tallest, shortest, centimetre

Term 4

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Represent and use number bonds and related subtraction facts within 20</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</p> <p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns</p>	<p>Recall and use addition facts of 10</p> <p>Recall and use subtraction facts of 10</p> <p>Deliberate Practice: Past and Present</p> <p>Number Bonds of 11 +</p> <p>Partition 20</p> <p>Number Bonds of 11 +/-</p> <p>Number Bonds of 12 +</p> <p>Recall and use addition facts of 6</p> <p>Add 10 to a number</p> <p>Recall and use addition facts of 7</p> <p>Subtract 10 from a number</p>

	Number Bonds of 12 +/-
<p>Conceptual Vocabulary: Addition and Subtraction: partition, whole, part, addition, addend, plus, altogether, subtraction, take away, left, total Fractions: whole, part, equal, divided, shared Geometry: Position and Direction: between, on top of, above, below, middle, up, down left, right, forwards, backwards, position, turn, half, quarter, three-quarter</p>	

Term 5

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Add and subtract one-digit and two-digit numbers to 20, including zero	Recall and use addition facts of 7
Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	Subtract 10 from a number
Recognise and use language relating to dates, including days of the week, weeks, months and years	Deliberate Practice: Past and Present
Sequence events in chronological order using language such as <i>before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening</i>	Number Bonds of 13 +/-
Compare, describe and solve practical problems for lengths and heights, mass or weight, capacity/volume, time	Use number facts to calculate others
Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time	Recall and use addition facts of 8
	Number Bonds of 14 +/-
	Recall and use addition facts of 9
	Recall and use subtraction facts of 9

	Number Bonds of 15 +/-
<p>Conceptual Vocabulary: Addition and Subtraction: partition, whole, part, addition, addend, plus, altogether, subtraction, take away, left, total Measurement: Time: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, January, February, March, April, May, June, July, August, September, October, November, December, hour, minute, o' clock, half past, earlier than, later than, quicker than, faster than, slower than, longer than</p>	

Term 6

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Compare, describe and solve practical problems for lengths and heights, mass or weight, capacity/volume, time</p> <p>Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time</p> <p>Recognise and know the value of different denominations of coins and notes</p> <p>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</p>	<p>Recall and use addition facts of 9</p> <p>Recall and use subtraction facts of 9</p> <p>Deliberate Practice: Past and Present</p> <p>Number Bonds of 15 +/-</p> <p>Recall and use all the subtraction facts of 10</p> <p>Count in multiples of 2, 5 and 10</p> <p>Number Bonds of 20 +/-</p> <p>Number Bonds of 20 +/</p>

	Order numbers to 100
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Conceptual Vocabulary:

Multiplication and Division: double, halve, half, equal, group, array, row, column

Measurement: Money: coin, pence, worth, value, bronze, silver, note, pound

Measurement: Mass and Capacity: mass, heavy, heavier than, kilogram, light, lighter than, capacity, empty, full, litre

Year Two

Term 1

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</p> <p>Recognise the place value of each digit in a two-digit number (tens, ones)</p> <p>Compare and order numbers from 0 up to 100; use and = signs</p> <p>Identify, represent and estimate numbers using different representations, including the number line</p> <p>Read and write numbers to at least 100 in numerals and in words</p> <p>Use place value and number facts to solve problems</p> <p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>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</p> <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p> <p>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</p>	<p>ArithmeCheck 1</p> <p>Deliberate Practice: Past and Present</p> <p>Number Bonds 6 +</p> <p>Know 1 more than numbers</p> <p>Know 1 less than numbers</p> <p>Number Bonds 6 +/-</p> <p>Number Bonds 7 +</p> <p>Add 10 to a number</p> <p>Subtract 10 from a number</p> <p>Number Bonds 7 +/-</p> <p>Number Bonds 8 +</p> <p>Use known number facts to calculate others</p> <p>Subtract a single digit number from a teens number</p>

Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	Number Bonds 8 +/-
Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.	Number Bonds 9 + Order numbers and position them on a number line
Conceptual Vocabulary: Number and Place Value: tens, exchange, regroup, ones, digit, column, zero, one, two, three... to twenty, zero, ten, twenty... one hundred, position, between Geometry: Properties of Shapes: 2D shape, straight sides, pentagon, hexagon, octagon, symmetry, 3D, vertex, vertices, edge, face Addition and Subtraction: Addition: addend, commutative, sum, total, altogether, tens, ones, digit, column, zero, one, two, three... to twenty, zero, ten, twenty... one hundred, partition, regroup	

Term 2

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Add multiples of 10 to a 2-digit number
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	Partition a 2-digit number in different ways
Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	Deliberate Practice: Past and Present Number Bonds 10 + Number Bonds 10 +/-
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	Number Bonds 10 +/-

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

Order and arrange combinations of mathematical objects in patterns and sequences

Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns

Identify 2-D shapes on the surface of 3-D shapes (for example, a circle on a cylinder and a triangle on a pyramid)

Compare and sort common 2-D and 3-D shapes and everyday objects

Add a single digit number to a 2-digit number using known facts

Subtract single digit number from a 2-digit number using known facts

Number Bonds 20 +

Number Bonds 20 +/-

Number Bonds 15 +

Subtract multiples of 10 from a 2-digit number

Subtract multiples of 10 from a 2-digit number

Number Bonds 15 +/-

Conceptual Vocabulary:

Addition and Subtraction: Subtraction: commutative, tens, ones, subtract, difference

Geometry: Properties of Shapes: 3-D shape, cylinder, circle, circular, cone, flat, curved, 2-D shape, face, surface, straight, properties, edge

Multiplication and Division: multiply, equal, groups, array, rectangular, columns, rows, product, commutative, divide, grouping, sharing

Geometry: Position and Direction: above, below, left, right, clockwise, anti-clockwise, quarter, half, three-quarter, right angle, sequence, pattern, rule, repeating

Term 3

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward	Subtract multiples of 10 from a 2-digit number
Compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$	Deliberate Practice: Past and Present
Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$ C); and capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	Multiplication Tables 2x4
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs	Use rounding to add near multiples of ten
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	Use rounding to subtract near multiples of ten
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	Multiplication 2x6
	Multiplication Tables 2x8
	Multiplication Tables 2x7

	<p>Compare and order numbers to 100</p> <p>Recognise odd and even numbers</p> <p>Multiplication Tables 2x9</p>
<p>Conceptual Vocabulary:</p> <p>Multiplication and Division: Multiplication Tables: factor, product, multiple, odd, even, divisible, multiply, equal, groups, array, rectangular, columns, rows, product, commutative, divide, grouping, sharing</p> <p>Measurement: Length and Mass: scale, heavier than, lighter than, heaviest, lightest, gram, kilogram, longer than, shorter than, longest, shortest, taller than, tallest, centimetre, metre</p>	

Term 4

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Write simple fractions eg $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half	Partition the second number to subtract tens then ones
Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	Double Numbers
Find different combinations of coins that equal the same amounts of money	Deliberate Practice: Past and Present
Compare and sequence intervals of time	Multiplication Tables 6 x 10
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	Multiplication Tables 7 x 10
Know the number of minutes in an hour and the number of hours in a day.	Multiplication 8 x 10

<p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</p>	<p>Partition the second number to add tens then ones</p> <p>Halve numbers</p> <p>Multiplication 9 x 10</p> <p>Multiplication Tables 3 x 5</p> <p>Multiplication Tables 4 x 5</p>
<p>Conceptual Vocabulary:</p> <p>Fractions: part, whole, equal, denominator, numerator, third, quarter, three-quarters, half, equivalent</p> <p>Measurement: Money: part, whole, total, sum, spend, change, pence, pounds, coins, notes</p> <p>Measurement: Time: quarter past, quarter to, past, to, minute, hour, day</p>	

Term 5

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</p> <p>Ask and answer questions about totalling and comparing categorical data</p> <p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <p>Compare and order volume/capacity and record the results using $>$, $<$ and $=$</p>	<p>Use known facts to 10 to derive other facts</p> <p>Solve multiplication problems</p> <p>Deliberate Practice: Past and Present</p> <p>Multiplication Tables 5 x 5</p>

<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p>	<p>Multiplication Tables 6 x 5</p> <p>Multiplication 7 x 5</p> <p>Find the difference between two numbers</p> <p>Use sharing to solve division problems</p> <p>Multiplication Tables 8 x 5</p> <p>Multiplication 9 x 5</p>
<p>Conceptual Vocabulary: Statistics: table, symbol, tally, represent, pictogram, block diagram Measurement: Capacity and Temperature: scale, litre, millilitre, capacity, temperature, degrees, Celsius, thermometer</p>	

Term 6

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Read, write, compare and order 2-digit numbers Find 10 more or less of a 2-digit number</p> <p>Recall and use addition and subtraction facts to 10 and know that addition is commutative</p> <p>Add two 2-digit numbers</p> <p>Subtract two 2-digit numbers</p> <p>Identify and describe the properties of 2-D and 3-D shapes, including the number of edges, vertices and faces</p>	<p>Remember This?</p> <p>Find the difference between two numbers</p> <p>Use sharing to solve division problems</p> <p>Deliberate Practice: Past and Present</p> <p>Multiplication Tables 2x3</p>

<p>Tell the time to quarter to/past and 5-minute intervals</p> <p>Calculate change and combine coins to make amounts</p> <p>Understand how multiplication and division can be represented and know that multiplication is commutative</p> <p>Explain about tens and ones in 2-digit numbers</p> <p>Know and use multiplication and division facts for 2,5 and 10 multiplication tables</p> <p>Partition and recombine to add</p> <p>Read scales in divisions of 1, 2, 5 and 10</p> <p>Recognise and find one half, one third and one quarter</p>	<p>Use known facts to 10 to derive other facts</p> <p>Use grouping to solve division problems</p> <p>Multiplication Tables 2x5</p> <p>Use known facts to 10 to derive other facts</p> <p>Use grouping to solve division problems</p> <p>Multiplication Tables 2x11</p> <p>Multiplication Tables 5 x 11</p> <p>Explain about tens and ones in 2-digit numbers</p> <p>Partition and recombine to add</p> <p>Multiplication Tables 5 x 12</p> <p>Multiplication Tables 10 x 11</p>
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Conceptual Vocabulary:

Place Value: tens, exchange, regroup, ones, digit, column, zero, one, two, three... to twenty, zero, ten, twenty... one hundred, position, between

Addition and Subtraction: commutative, tens, ones, subtract, difference, part, whole, total, sum

Geometry and Measurement: 3-D shape, cylinder, circle, circular, cone, flat, curved, 2-D shape, face, surface, straight, properties, edge, above, below, left, right, clockwise, anti-clockwise, quarter, half, three-quarter, right angle, sequence, pattern, rule, repeating, spend, change, pence, pounds, coins, notes, quarter past, quarter to, past, to, minute, hour, day, scale, litre, millilitre, capacity, temperature, degrees, Celsius, thermometer

Multiplication and Division: multiply, equal, groups, array, rectangular, columns, rows, product, commutative, divide, grouping, sharing

Fractions: part, whole, equal, denominator, numerator, third, quarter, three-quarters, half, equivalent

Year Three

Term 1

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number</p> <p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Compare and order numbers up to 1000</p> <p>Identify, represent and estimate numbers using different representations</p> <p>Read and write numbers up to 1000 in numerals and in words Solve number problems and practical problems involving these ideas</p> <p>Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p> <p>Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them</p>	<p>ArithmeCheck 2</p> <p>Deliberate Practice: Past and Present</p> <p>Multiplication Tables 2x6, 2 x 7, 2x8, 10x7, 10x8, 5x6, 5x7, 5 x 8</p> <p>Double numbers</p> <p>Halve numbers</p> <p>Recognise odd and even numbers</p> <p>Use known facts of 10 to derive other facts</p> <p>Find the difference between two numbers</p> <p>Add multiples of ten to a 2-digit number</p> <p>Subtract multiples of ten from a 2-digit number</p>

Conceptual Vocabulary:

Number and Place Value: hundreds, tens, exchange, ones, digit, column, zero, one, two, three... to twenty, zero, ten, twenty... one hundred, position, decrease, increase, tenths, decimal point

Geometry: Properties of Shapes: horizontal, vertical, parallel, perpendicular, equi-distant, polygon, triangle, quadrilateral, square, hexagon, pentagon, octagon, polyhedron, cuboid, cube, prism, pyramid, cylinder, cone, sphere, face, edge, vertex

Term 2

Maths Lessons: Intelligent Practice

**Maths on Track:
Deliberate Practice**

<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p> <p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers multiplied by 1-digit numbers, using mental methods and progressing to formal written methods</p> <p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects</p>	<p>Use rounding to add near multiples of ten</p> <p>Deliberate Practice: Past and Present</p> <p>Multiplication Tables 3x3, 3x4, 3 x 6, 3 x 7, 3 x 8, 3 x 9, 3 x 12</p> <p>Use rounding to subtract near multiples of ten</p> <p>Add a single digit number to a 2-digit number using known facts</p> <p>Subtract a single digit number from a 2-digit number using number facts</p> <p>Compare and order numbers up to 1000 & position them on a number line</p> <p>Find 10 and 100 more or less than any given number</p>
<p>Conceptual Vocabulary:</p> <p>Multiplication and Division: Multiplication Tables: factor, product, multiple, odd, even, divisible</p> <p>Addition and subtraction: Mental Methods: zero, regroup, ones, tens, hundreds, total, plus, sum, addend, subtract, difference, bridge, partition</p>	

Term 3

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Compare and order unit fractions and fractions with the same denominators</p> <p>Solve problems that involve all of the above</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>Add and subtract numbers with up to three digits, using the formal written methods of columnar addition and subtraction</p> <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>Partition the second number to subtract tens then ones</p> <p>Deliberate Practice of this week's learning</p> <p>Multiplication Tables 4 x 4, 4 x 6, 4 x 7, 4 x 8, 4 x 9, 4 x 12</p> <p>Add numbers by partitioning and recombining</p> <p>Double 3- digit numbers</p> <p>Halve 3-digit numbers</p>
<p>Conceptual Vocabulary: Fractions: denominator, numerator, unit fraction, non-unit fraction, equivalent, fifths, sixths, sevenths, eighths, ninths, tenths Addition and Subtraction: Written Methods: ones, tens, hundreds, regroup, subtract, minuend, subtrahend, exchange</p>	

Term 4

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers multiplied by 1-digit numbers, using mental progressing to formal written methods</p> <p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to objects</p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts</p>	<p>Use rounding to add near multiples of ten</p> <p>Multiply numbers by 10 using place value</p> <p>Deliberate Practice of this week's learning</p> <p>Multiplication Tables 8 x 3, 8 x 4, 8 x 6, 8 x 7, 8 x 8, 8</p>
<p>Conceptual Vocabulary:</p> <p>Multiplication and Division: partition, product, regroup, dividend, divisor, remainder</p> <p>Measurement: Money: part, whole, total, sum, spend, change, pence, pounds, coins, notes</p>	

Term 5

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>Add and subtract fractions with the same denominator within one whole</p> <p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>Compare durations of events</p> <p>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.</p>	<p>Partition 3-digit numbers in different ways</p> <p>Multiply by a multiple of 10 by using place value</p> <p>Deliberate Practice of this week's learning</p> <p>Multiplication Tables 3 x 5, 3 x 11, 8 x 5, 8 x 9, 8 x 12</p> <p>Subtract numbers by finding the difference between them</p> <p>Divide by a multiple of 10 by using place value</p>
<p>Conceptual Vocabulary: Fractions: Calculating: denominator, numerator, unit fraction, non-unit fraction Measurement: Time: Roman numeral, second, minute, day, month, year, leap year, January, February, March, April, May, June, July, August, September, October, November, December, analogue, digital</p>	

Term 6

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables</p> <p>Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle</p> <p>Interpret and present data using bar charts, pictograms and tables.</p> <p>Recognise angles as a property of shape or a description of a turn</p> <p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/ capacity (l/ml)</p> <p>Measure the perimeter of simple 2-D shapes</p>	<p>Add 3-digit numbers using appropriate mental strategies</p> <p>Use partitioning and known facts to multiply 2-digit by 1-digit mentally</p> <p>Deliberate Practice of this week's learning</p> <p>Factor, factor product</p> <p>Subtract 3-digit numbers using appropriate mental strategies</p>
<p>Conceptual Vocabulary:</p> <p>Measurement: Length, Mass and Capacity: length, metre, centimetre, millimetre, unit, perimeter, mass, gram, kilogram, capacity, litre, millilitre, scale</p> <p>Geometry: Properties of Shapes (Angles): angle, right angle, turn, quarter-turn</p> <p>Statistics: pictogram, symbol, represents, scale, bar chart, data table, row, column, category</p>	

Year Four

Term 1

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Count in multiples of 6, 7, 9, 25 and 1000	ArithmeCheck 3
Recognise the place value of each digit in a four-digit number	Deliberate Practice Past and Present
Read Roman numerals to 100 and know that, over time, the numeral system changed to include the concept of zero and place value	Multiplication Tables 3x7, 3 x 8, 4 x6, 4 x7, 4 x 8, 8 x 6, 8 x 7, 8 x 8
Count backwards through zero to include negative numbers	Compare and order numbers up to 1000 and position them on a number line
Solve number and practical problems that involve all of the above and with increasingly large positive numbers	Use place value to find 10 and 100 more or less than 3-digit numbers
Find 1000 more or less than a given number.	Use rounding to add near multiples of 10
Round any number to the nearest 10, 100 or 1000	Use rounding to subtract a near multiple of 10
Identify, represent and estimate numbers using different representations	Partition the second number to add 10s then 1s including bridging
Order and compare numbers beyond 1000	Partition the second number to subtract 10s then 1s including bridging
Identify lines of symmetry in 2-D shapes presented in different orientations	
Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	
Complete a simple symmetric figure with respect to a specific line of symmetry	

	Subtract numbers by finding the difference between them
<p>Conceptual Vocabulary: Number and Place Value: hundreds, thousands, exchange, tens, ones, digit, columns, value, position, increase, decrease, round, multiple, negative, zero Geometry: Properties of Shapes: equilateral, isosceles, scalene, quadrilateral, parallel, parallelogram, rhombus, trapezium, kite, adjacent, classify, property, symmetry, reflection</p>	

Term 2

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</p> <p>Estimate and use inverse operations to check answers to a calculation</p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p> <p>Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers</p> <p>Recall multiplication and division facts for multiplication tables up to 12×12</p>	<p>Multiply numbers by 10 using place value</p> <p>Deliberate Practice Past and Present</p> <p>Multiplication Tables 6×3, 6×4, 6×6, 6×7, 6×8, 6×9, 6×12</p> <p>Divide whole numbers by 10 using place value</p> <p>Multiply numbers by a multiple of 10 using place value</p> <p>Divide whole numbers by a multiple of 10 using place value</p>

	<p>Use partitioning and known facts to multiply 2-digit by 1-digit numbers</p> <p>Double 3-digit numbers</p> <p>Halve 3-digit numbers</p>
<p>Conceptual Vocabulary:</p> <p>Multiplication and Division: Multiplication Tables: zero, factor, product, multiple, odd, even, divisible</p> <p>Addition and Subtraction: Mental Methods Addition: sum, thousands, hundreds, tens, ones, exchange, bridge</p> <p>Addition and Subtraction: Mental Methods Subtraction: thousands, hundreds, tens, ones, subtract, difference, bridge, partition</p>	

Term 3

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Solve calculation. addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Round numbers to the nearest 10, 100 or 1000
Estimate appropriate. and use inverse operations to check answers to a calculation	Deliberate Practice Past and Present
Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Multiplication Tables 7 x3, 7 x 4, 7 x 6, 7 x 7, 7 x 8, 7 x 9
Recognise and use factor pairs and commutativity in mental calculations	Recall and use facts for the 6x table
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	Order numbers beyond 1000

Recall multiplication and division facts for multiplication tables up to 12×12 .	Recall and use facts for the 7x table
<p>Conceptual Vocabulary:</p> <p>Multiplication and Division: Multiplication Tables: zero, factor, product, multiple, odd, even, divisible, commutative</p> <p>Addition and Subtraction: Written Methods Addition: ones, tens, hundreds, thousands, regroup, sum</p> <p>Addition and Subtraction: Written Methods Subtraction: ones, tens, hundreds, thousands, subtract, minuend, subtrahend, exchange</p>	

Term 4

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Multiply two-digit and three-digit numbers by a one-digit number using formal written method	Choose appropriate methods to add
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	Double and halve numbers
Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems, such as n objects are connected to m objects	Deliberate Practice Past and Present
Identify acute and obtuse angles and compare and order angles up to two right angles by size	Multiplication Tables 9 x 6, 9 x 7, 9 x 8, 9 x 9, 12 x 12
	Choose appropriate methods to subtract
	Choose appropriate methods to subtract
	Divide 3-digit numbers by 1 digit numbers

Conceptual Vocabulary:

Multiplication and Division: multiplier, product, dividend, divisor, remainder, quotient

Multiplication and Division: multiplier, product, dividend, divisor, remainder, quotient

Geometry: Properties of Shapes (Angles) angle, acute, obtuse, right angle

Term 5

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Add and subtract fractions with the same denominator</p> <p>Compare numbers with the same number of decimal places up to two decimal places</p> <p>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</p> <p>Round decimals with one decimal place to the nearest whole number</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</p> <p>Recognise and show, using diagrams, families of common equivalent fractions</p> <p>Recognise and write decimal equivalents to $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>Convert between different units of measure (eg kilometre to metre; hour to minute)</p>	<p>Use place value and known facts to multiply mentally</p> <p>Deliberate Practice Past and Present</p> <p>Multiplication Facts 12 x 8, 12 x 7, 12 x 11, 11 x 11, 11 x 12</p> <p>Multiply 3 digit numbers by 1 digit numbers; efficient methods</p> <p>Order decimal numbers and position them on a number line</p> <p>Round numbers with one decimal place to the nearest whole number</p>
<p>Conceptual Vocabulary: Decimals: tenths, hundredths, digit, column, round, whole number, pounds, pence Fractions: Calculating: denominator, numerator, unit fraction, non-unit fraction, equivalent, multiplier</p>	

Term 6

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Solve simple measure and money problems involving fractions and decimals to two decimal places</p> <p>Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</p> <p>Plot specified points and draw sides to complete a given polygon</p> <p>Describe movements between positions as translations of a given unit to the left/ right and up/ down</p> <p>Describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence</p> <p>Convert between different units of measure (eg kilometre to metre; hour to minute)</p> <p>Read write and convert time between analogue and digital 12 and 24 hour clocks</p> <p>Find the area of rectilinear shapes by counting squares.</p>	<p>Order decimal numbers and position them on a number line</p> <p>Deliberate Practice Past and Present</p> <p>Multiplication Tables 7 x 5, 7 x 12, 9 x 4, 9 x 12, 12 x 6, 12 x 3</p> <p>Round numbers with one decimal place to the nearest whole number</p> <p>Use number facts to add</p> <p>Divide whole numbers and decimals by 100</p> <p>Find the difference between two numbers</p> <p>Round and adjust to add numbers</p>

Conceptual Vocabulary:

Addition and Subtraction: Decimals: tenths, hundredths, regroup, exchange, efficient

Measurement: Time and Converting Units: analogue, digital, 24-hour, hour, minute, week, day, litre, millilitre, kilogram, milligram

Measurement: Perimeter and Area: perimeter, area, length, width, rectilinear

Geometry: Position and Direction: co-ordinate, quadrant, polygon, translation, left, right, up, down, horizontal, vertical

Statistics: scale, represent, axes, category

Year Five

Term 1

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	ArithmeCheck
Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	Deliberate Practice Past and Present
Solve number problems and practical problems that involve all of the above	Multiplication Tables 6 x 6, 6 x 7, 7 x 7, 7 x 8, 8 x 6, 8 x 8, 12 x 6, 12 x 7
Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	Order numbers beyond 1000 and position them on a number line
Solve number problems and practical problems that involve all of the above	Round numbers to the nearest 10, 100 or 1000
Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	Use number facts to add
Read Roman numerals to 1000 and recognise years written in Roman numerals	Use number facts to Subtract
Read and write decimal numbers as fractions	Order decimal numbers and position them on a number line
Read, write, order and compare numbers with up to three decimal places.	Round decimals with 1 decimal place to the nearest whole number
Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	
Solve problems involving number up to three decimal places	
Round decimals with two decimal places to the nearest whole number and to one decimal place.	

Identify 3-D shapes, including cubes and other cuboids, from 2-D representations

Choose appropriate written or mental methods to add 4-digit numbers

Choose appropriate written or mental methods to subtract numbers

Conceptual Vocabulary:

Number and Place Value: hundred-thousands, ten-thousands, thousands, hundreds, tens, ones, exchange, digit, columns, value, position, increase, decrease, round, multiple, negative, positive, zero

Decimals: thousandths, hundredths, tenths, ones, digit, column, round, decimal place

Geometry: Properties of Shapes: net, square, rectangle, triangle, polygon, cube, cuboid, prism, pyramid

Term 2

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Solve problems involving number up to three decimal places	Double and halve numbers
Add and subtract numbers mentally with increasingly large numbers	Deliberate Practice Past and Present
Add and subtract whole numbers with more than 4 digits, including using formal written	Multiplication Tables 12 x 8, 12 x 11, 12 x 3, 3 x 3, 3 x 4, 3 x 6, 3 x 7
Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Use place value and known facts to multiply mentally
Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Use place value and known facts to divide mentally
Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Multiply 3-digit numbers by 1-digit numbers using efficient methods
Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers, factor pairs of a number, and common factors of two numbers	Divide 3-digit numbers by 1-digit numbers using efficient methods
Multiply and divide whole numbers and those involving decimals by 10,100 and 1000	Compare and order numbers up to 1,000,000
Establish whether a number up to 100 is prime and recall prime numbers up to 19	Round numbers to the nearest 10, 100, 1000, 10,000 and 100,000
Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	
Recognise and use square numbers and cube numbers, and the notation for squared and cubed	

Conceptual Vocabulary:**Addition and Subtraction:** exchange, regroup, efficient**Multiplication and Division: Powers of 10:** tenths, hundredths, thousandths, column, digit, multiplier, dividend, divisor, _ times larger, _ times smaller**Multiplication and Division: Properties of Number:** prime, composite, factor, multiple, integer, common factor, divisible, squared, cubed**Term 3**

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
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	Compare and order decimals Deliberate Practice Past and Present
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Multiplication Tables 3 x 8, 3 x 9, 4 x 4, 4 x 6, 4 x 7
Multiply and divide numbers mentally drawing upon known facts	Round decimal numbers
Solve equals sign problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Multiply by 10, 100 and 1000
Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Divide by 10, 100 and 1000
Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	
Conceptual Vocabulary: Multiplication and Division: Written Methods: multiplier, multiplicand, product, prime, composite, factor, multiple, integer, common factor, divisible, squared, cubed Geometry: Position and Direction: congruent, translate, translation, reflect, reflection, parallel, axes, object, image	

Term 4

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Read and write decimal numbers as fractions</p> <p>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25</p> <p>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 hundred, and as a decimal</p> <p>Solve problems involving number up to three decimal places</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Compare and order fractions whose denominators are all multiples of the same number</p> <p>Convert between different units of metric measure</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Use all four operations to solve problems involving measure (eg length, mass, volume, money) using decimal notation, including scaling</p>	<p>Use place value or adjusting to add numbers mentally</p> <p>Deliberate Practice Past and Present</p> <p>Multiplication Tables 4×7, 4×8, 4×9</p> <p>Double decimal and whole numbers</p> <p>Use place value or adjusting to subtract numbers mentally</p> <p>Halve decimal and whole numbers</p>

Conceptual Vocabulary:

Fractions, Decimals and Percentages: multiples, denominator, numerator, unit fraction, non-unit fraction, equivalent, tenths, hundredths, thousandths, percentage

Measurement: Length, Mass and Capacity: convert, metres, centimetres, millimetres, litres, millilitres, kilograms, grams, metric, imperial, perimeter, rectilinear, inch, pint, pounds (lbs)

Term 5

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as mixed numbers</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</p>	<p>Multiply numbers mentally using known facts and place value</p> <p>Deliberate practice past and present</p> <p>Multiplication Tables 6 x 6, 6 x 7, 6 x 8</p> <p>Compare and order fractions</p> <p>Divide numbers mentally using known facts and place value</p> <p>Solve problems: Percentage and decimal equivalents</p>
<p>Conceptual Vocabulary:</p> <p>Fractions: Calculating: mixed number, improper fraction, numerator, denominator, equivalent, common denominator, multiple, factor, non-unit fraction, unit fraction, multiplier</p>	

Term 6

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Solve comparison, sum and difference problems using information presented in a line graph	Divide numbers mentally using known facts and place value
Complete, read and interpret information in tables, including timetables	Deliberate Practice Past and Present
Use the properties of a rectangle to deduce related facts and find missing lengths and angles	Multiplication Tables 6 x 8, 6 x 9, 7 x 7, 7 x 8, 7 x 9
Distinguish between regular and irregular polygons based on reasoning about equal sides and angles	Solve problems: Percentage and decimal equivalents
Identify angles at a point and one whole turn, angles at a point on a straight line and $\frac{1}{2}$ a turn, other multiples of 90 degrees	Add numbers with more than 4 digits using efficient methods
Draw given angles and measure them in degrees	Multiply numbers mentally using factors or partitioning
Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles	Subtract numbers with more than 4 digits using efficient methods
Solve problems involving converting between units of time	Divide numbers mentally using factors or partitioning
Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes	
Estimate volume (eg using 1 cm blocks to build cuboids (including cubes)) and capacity	

Conceptual Vocabulary:

Measurement: Area and Volume: area, volume, capacity, squared, cubed

Geometry: Properties of Shapes: angle, acute, obtuse, reflex, degrees ($^{\circ}$), regular, irregular, polygon, rectangle, quadrilateral, diagonal

Measurement: Time: seconds, minutes, hours, days, weeks

Statistics: scale, represent, axes, category, column, row, timetable, duration

Year Six

Term 1

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p> <p>Solve number problems and practical problems that involve all of the above</p> <p>Use negative numbers in context, and calculate intervals across zero</p> <p>Round any whole number to a required degree of accuracy</p> <p>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p> <p>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>Identify common factors, common multiples and prime numbers</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>Perform mental calculations, including with mixed operations and large numbers</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</p>	<p>ArithmeCheck5</p> <p>Deliberate Practice Past and Present</p> <p>Compare and order numbers up to 1,000,000</p> <p>Compare and order decimal numbers</p> <p>Add numbers with more than 4 digit using efficient methods</p> <p>Round decimal numbers</p> <p>Subtract numbers with more than 4 digit using efficient methods</p> <p>Solve problems with negative numbers</p> <p>Round numbers to the nearest 10, 100, 1000, 10,000 and 100,000</p> <p>Multiplication facts: 8 x 8, 8 x 9, 9 x 9, 12 x 3, 12 x 4, 12 x 6</p>

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Solve problems involving addition, subtraction, multiplication and division

Use written division methods in cases where the answer has up to two decimal places

Multiply one-digit numbers with up to two decimal places by whole numbers

Solve problems which require answers to be rounded to specified degrees of accuracy

Identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places

Draw and translate simple shapes on the coordinate plane and reflect them in the axes.

Describe positions on the full coordinate grid (all four quadrants)

Conceptual Vocabulary:

Number and Place Value: million, hundred thousands, ten thousands, thousands, hundreds, tens, ones, exchange, digit, columns, value, position, increase, decrease, round, multiple, negative, positive, zero

Decimals: tenths, hundredths, thousandths, column, digit, multiplicand, multiplier, dividend, divisor, _ times larger, _ times smaller

Multiplication and Division: multiples, common, divisible, factors, prime, multiplier, multiplicand, product, divisor, dividend, quotient, remainder

Geometry: Properties of Shapes: coordinates, axes, x-axis, y-axis, quadrant, negative, positive, origin, translate, reflect, object, image

Term 2

Maths Lessons: Intelligent Practice

**Maths on Track:
Deliberate Practice**

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction

Compare and order fractions, including fractions >1

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

Use their knowledge of the order of operations to carry out calculations involving the four operations

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Illustrate and name parts of circles, including radius, diameter and circumference, and know that the diameter is twice the radius

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons

Recognise, describe and build simple 3-D shapes, including making nets.

Draw 2-D shapes using given dimensions and angles

Add decimal numbers using efficient written or mental methods

Deliberate Practice Past and Present

Subtract decimal numbers using efficient written or mental methods

Multiply numbers using efficient written or mental methods

Divide numbers using efficient written or mental methods

Add and subtract fractions

Place value

Round numbers

Multiplication facts:
 12×7 , 12×8 , 12×9 ,
 12×11

Conceptual Vocabulary:

Fractions, Decimals and Percentages: simplify, denominator, numerator, equivalent, improper, proper, common, multiple, factor, equivalent, percent

Geometry: Properties of Shapes (Angles): degrees, vertex, vertically, opposite, equilateral, isosceles, scalene, quadrilateral, polygon, regular, interior, pentagon, hexagon, octagon

Geometry: Properties of Shapes: symmetry, parallel, perpendicular, dimension, construct, prism, pyramid, polyhedron, face, edge, vertex, vertices, pentagonal, triangular, hexagonal, isometric, circumference, diameter, radius

Addition, Subtraction, Multiplication and Division: addition, subtraction, multiplication, division, brackets, order of operations, indices, squared, cubed

Term 3

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form</p> <p>Divide proper fractions by whole numbers</p>	<p>Calculate duration of events</p> <p>Deliberate Practice Past and Present</p> <p>Negative numbers</p> <p>Count forwards/backwards and sequences</p> <p>Multiples, factors, primes and squares</p> <p>Add and subtract numbers with up to 2 significant figures</p> <p>Add and subtract numbers with more than 4-digits</p>

	<p>Multiply and divide whole numbers mentally using 12x12 facts and place value</p> <p>Multiply and divide whole numbers and decimals up to 2d.p. by powers of 10</p> <p>Multiply and divide 2,3&4-digit numbers by 1&2-digit numbers</p> <p>Recognise and use equivalent fractions</p> <p>Recognise and use equivalencies between simple fractions, decimals and %</p> <p>Multiplication facts: 12 x 11, 12 x 12, 11 x 11</p>
<p>Conceptual Vocabulary: Fractions: Calculating: numerator, denominator, proper fraction, product, Divisor, equivalent, numerator, denominator, proper fraction, improper fraction, mixed number, common denominator, factor</p>	

Term 4

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
<p>Generate and describe linear number sequences</p> <p>Express missing number problems algebraically</p> <p>Use simple formulae</p> <p>Find pairs of numbers that satisfy an equation with two unknowns</p> <p>Enumerate possibilities of combinations of two variables</p> <p>Solve problems involving calculation of percentages and the use of percentages for comparison</p> <p>Solve problems involving the relative sizes of two quantities, where missing values can be found by using integer multiplication and division facts</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found</p> <p>Solve problems involving unequal sharing and grouping, using knowledge of fractions and multiples</p> <p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate</p> <p>Recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>Calculate the area of parallelograms and triangles</p> <p>Convert between miles and kilometres</p>	<p>Recognise and use equivalent fractions</p> <p>Recognise and use equivalencies between fractions, decimals and percentages</p> <p>Address identified gaps / Practise solving routine and non-routine problems</p> <p>Find simple fractions and percentages of a quantity</p> <p>Shape Properties</p> <p>3-D shapes and nets</p> <p>Constructions</p> <p>Add and Subtract Decimals</p> <p>Multiply 1-digit decimal number by single digit number</p> <p>Add and subtract fractions with same denominators including mixed numbers</p>

Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places	Add and subtract fractions, denominators that are multiples of same number
Recognise when it is possible to use formulae for area and volume of shapes	Angle facts
Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed and cubic metres and extending to other units	Co-ordinates
	Reflections and Translations

Conceptual Vocabulary:

Ratio and Proportion: equivalent, percentage, scale factor, dimension, similar

Measurement: Converting Units: convert, miles, kilometres, metres, centimetres, millimetres, litres, millilitres, kilograms, grams

Measurement: Area and Volume: triangle, parallelogram, area, perimeter, base, perpendicular height, volume, cuboid, cube, squared, cubic, cubed

Algebra: formula, unknown, variable, linear sequence, term

Term 5

Maths Lessons: Intelligent Practice	Maths on Track: Deliberate Practice
Interpret and construct pie charts and line graphs and use these to solve problems	Deliberate Practice: Past and Present
Calculate and interpret the mean as an average	Address identified gaps / Practise solving routine and non-routine problems

Conceptual Vocabulary:**Statistics:** line graph, pie chart, mean, average, data, discrete**SAT's Targeted Revision & Problem Solving****Term 6**

Maths Lessons: Intelligent Practice Securing learning - Moving on Up	Maths on Track: Deliberate Practice
Read, write and order numbers up to 10,000,000 Calculate intervals across zero	Identify the value of each digit to 3dp
Multiply and divide numbers up to 4 digits by a 2-digit number choosing efficient methods and interpreting the remainders	Compare and order decimals
Simplify, compare and order fractions, including fractions > 1	Deliberate Practice: Past and Present
Know and use simple fraction, decimal and percentage equivalents	Address identified gaps / Practise solving routine and non-routine problems
Add and subtract fractions with denominators that are not multiples of each other and mixed numbers	Compare and order decimals
Find percentages of an amount	Compare and order fractions
Describe and plot positions on a 2-D grid as coordinates in the four quadrants	Recall and use equivalence between simple fractions and decimals
Know and use angle properties of straight lines, at a point and shapes	
Convert between different units of metric measure	
Calculate the area of rectangles and triangles and volumes of cuboids	
Find possible values in missing number problems involving one or two unknowns	

Conceptual Vocabulary:

Place Value: million, hundred thousands, ten thousands, thousands, hundreds, tens, ones, exchange, digit, columns, value, position, increase, decrease, round, multiple, negative, positive, zero

Multiplication and Division: multiples, common, divisible, factors, prime, multiplier, multiplicand, product, divisor, dividend, quotient, remainder

Fractions, Decimals and Percentages: simplify, denominator, numerator, equivalent, improper, proper, common, multiple, factor, equivalent, percent

Geometry: degrees, vertex, vertically opposite, equilateral, isosceles, scalene, quadrilateral, polygon, regular, interior, pentagon, hexagon, octagon, symmetry, parallel, perpendicular, dimension, construct, prism, pyramid, polyhedron, face, edge, vertex, vertices, pentagonal, triangular, hexagonal, isometric, circumference, diameter, radius

Measurement: convert, miles, kilometres, metres, centimetres, millimetres, litres, millilitres, kilograms, grams, triangle, parallelogram, area, perimeter, base, perpendicular, height, volume, cuboid, cube, squared, cubic, cubed

Algebra: formula, unknown, variable, linear, sequence, term