

Rockcliffe First School – Maths Curriculum Overview - Nursery

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<i>Continue to explore, sort and compare objects according to colour, shape and size.</i>					
Colour & Shape - Recognise colours - Recognise objects that are the same shape or colour - Match number shapes - Match the same size - Recognise and create matching towers - Match prints - Sort by size, shape & colour	Number - Subitise number 1 - Count 1 - Numeral match number 1 - Subitise number 2 (dice patterns) - Subitise number 2 (different patterns) - Subitise number 2 (different sizes & patterns) - Count 2 (say one number for each item) - Number 2 (link numerals & amounts)		<i>Continue subitising and counting numbers 1&2 (provision, songs and games).</i>		<i>Continue subitising and counting numbers to 5 (provision, songs and games).</i>
	Pattern -Colour AB patterns -Extend AB patterns -Predict what will come next in patterns -Extend ABC patterns -Extend ABC colour patterns	Number -Subitise 3 (dice patterns) -Subitise number 3 (different patterns) -Subitise number 3 (different sizes & patterns) - Count 3 - Numeral 3 - Composition of 3 - Count 4 - Numeral 4 - Composition of 4 - Counting 5 - Numeral 5 - Composition of 5 - Use 5 frame - Count 6 - Introduce 10 frame to count 6	Measures -Compare height (tall and short) -Compare length (long and short) -Mass (introduce balance scales) -Mass (lighter or heavier) -Capacity (full or empty) -Capacity (nearly full or nearly empty) -Capacity (comparing containers)	Sequencing pictures, numbers, rhymes & daily routines Position On, under, in, out, front, behind	
Shape - Recognise triangles - Recognise squares and rectangles - Recognise pentagons		Shape - 2D shapes (circles, triangles, rectangles) - 3D shapes (cubes, cuboids, cylinders and spheres)		Consolidate Number - Composition of 3 - Composition of 4 - Number composition - What comes before or after? - Numbers to 5	
<i>Use the language of measurement and comparison.</i>					
<i>Developing Number Sense – Number rich environment, rich mathematical talk, sequencing through nursery rhymes and daily routines (maths woven into daily routines through calendar, 5 frame self-registration, daily table top game play etc).</i>					

Rockcliffe First School – Maths Curriculum Overview - Reception

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2		
<p>Number and Numerical Patterns</p> <ul style="list-style-type: none"> - identify when a set can be subitised and when counting is needed - subitise different arrangements, both unstructured and structured, including using the Hungarian number frame - make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills - spot smaller numbers ‘hiding’ inside larger numbers <p>connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers</p> <ul style="list-style-type: none"> - hear and join in with the counting sequence, and connect this to the ‘staircase’ pattern of the counting numbers, seeing that each number is made of one more than the previous number - develop counting skills and knowledge, including: that the last number in the count tells us ‘how many’ (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds - compare sets of objects by matching - begin to develop the language of ‘whole’ when talking about objects which have parts 		<p><i>Continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals</i></p>					
		<p>Number and Numerical Patterns</p> <ul style="list-style-type: none"> - begin to identify missing parts for numbers within 5 - explore the structure of the numbers 6 and 7 as ‘5 and a bit’ and connect this to finger patterns and the Hungarian number frame - focus on equal and unequal groups when comparing numbers understand that two equal groups can be called a ‘double’ and connect this to finger patterns - sort odd and even numbers according to their ‘shape’ - continue to develop their understanding of the counting sequence and link cardinality and ordinality through the ‘staircase’ pattern - order numbers and play track games - join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers 		<p><i>Continue to develop their counting skills, counting larger sets as well as counting actions and sounds</i></p>			
				<p>Number and Numerical Patterns</p> <ul style="list-style-type: none"> - explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame - compare quantities and numbers, including sets of objects which have different attributes - continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2 - begin to generalise about ‘one more than’ and ‘one less than’ numbers within 10 - continue to identify when sets can be subitised and when counting is necessary - develop conceptual subitising skills including when using a rekenrek. 			
<p>Spatial reasoning: Space & Shape</p> <p>Experience different viewpoints (visualising how things will appear when turned around and imagining how things might fit together). Use language of position and direction (position: ‘in’, ‘on’, ‘under’, direction: ‘up’, ‘down’, ‘across’). Use language of viewpoint (‘in front of’, ‘behind’, ‘forwards’, ‘backwards’ - ‘left’ and ‘right’ to be used later as ideas develop). Represent spatial relationships (e.g. a map). Develop space awareness through construction. Identify similarities between shapes. Show awareness of properties of shapes. Describe properties of shapes. Develop an awareness of relationships between shapes.</p>							
<p>Measures & Patterns</p> <p>Recognise attributes (e.g. the stick is long, adults are tall). Compare size, mass and capacity. Compare amounts of continuous quantities. Show awareness of comparison in estimating and predicting. Explore, copy and continue simple patterns. Create patterns. Compare indirectly. Recognise the difference between the size of numbers and units. Begin to use units to compare things. Begin to use time to sequence events. Begin to experience specific time durations.</p>							
<p><i>Developing Number Sense – Number rich environment, rich mathematical talk, sequencing through nursery rhymes and daily routines (maths woven into daily routines through calendar, 10 frame self-registration & book voting, game play etc).</i></p>							

Rockcliffe First School - Maths Curriculum Overview - Year 1

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
----------	----------	----------	----------	----------	----------

Number and Place Value

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens.
- Given a number, identify one more and one less.
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.
- Read and write numbers from 1 to 20 in numerals and words.

Number and Place Value

- Read and write numbers from 1 to 20 in numerals and words.
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens.
- Given a number, identify one more and one less.

Addition and Subtraction

- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
- Represent and use number bonds and related subtraction facts within 20.
- Add and subtract one-digit and two-digit numbers to 20, including zero.
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$.

Addition and Subtraction

- Represent and use number bonds and related subtraction facts within 20.
- Add and subtract one-digit and two-digit numbers to 20, including zero.

Geometry (shape)

- 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].

Multiplication and Division

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

Multiplication and Division

Continue to represent and calculate statements for x and \div

Fractions

- Recognise, find and name a half as one of two equal parts of an object, shape or quantity.
- Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Fractions

Continue to identify halves and quarters

Geometry (position and direction)

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

Addition and Subtraction

- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
- Represent and use number bonds and related subtraction facts within 20.
- Add and subtract one-digit and two-digit numbers to 20, including zero.
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.

Multiplication and Division

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

Measures

- Compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume, time
- Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time (hours, minutes, seconds)
- 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 know the value of different denominations of coins and notes.

Measures (time)

- Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- Recognise and use language relating to dates, including days of the week, weeks, months and years
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Developing number sense – explore number in the environment, numbers presented in a variety of contexts (money and measures)

Maths in other subjects – begin to explore organising data/statistics during Science investigations (tables, tally charts and pictograms)

Rockcliffe First School - Maths Curriculum Overview - Year 2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
----------	----------	----------	----------	----------	----------

Number and Place Value

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

Number and Place Value
 - count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
 - compare and order numbers from 0 up to 100; use and = signs
 - read and write numbers to at least 100 in numerals and in words

Addition and Subtraction

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

Addition and Subtraction

- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations

Geometry (shape)

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

Multiplication and Division

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

Multiplication and Division

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x),

Fractions

- recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity
- write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.

Fractions

- continue to find fractions of objects, and quantities.

Geometry (position & direction)

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

Addition and Subtraction

- solve problems with addition and subtraction:
- recall and use addition and subtraction facts to 20 and 100
- add and subtract numbers
- show commutativity
- recognise and use the inverse relationship

Multiplication and Division

- recall and use multiplication and division facts
- calculate mathematical statements for multiplication and division
- show that multiplication of two numbers can be done in any order
- solve problems involving multiplication and division.

Measures

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, mass, volume/capacity and record the results using >, < and =
- recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- find different combinations of coins that equal the same amounts of money
- solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change

Measures (time)

- compare and sequence intervals of time
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- know the number of minutes in an hour and the number of hours in a day.

Developing number sense – Children see number in a variety of contexts throughout the year (money £&p, measures g/kg, ml/l, mm/cm/m), learn and recall x2, x5, and x10 tables.

Maths in other subjects (Statistics is taught and used across STEM subjects – particularly in Science when recording and interpreting data)

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

Rockcliffe First School - Maths Curriculum Overview - Year 3

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Number and Place Value</p> <ul style="list-style-type: none"> - find 10 or 100 more or less than a given number - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - compare and order numbers up to 1000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1000 in numerals and in words - solve number problems and practical problems involving these ideas 	<p><i>Number and Place Value</i></p> <ul style="list-style-type: none"> - count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - read and write numbers up to 1000 in numerals and in words 	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> - add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds - add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction - estimate the answer to a calculation and use inverse operations to check answers - solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. 		<p><i>Addition and Subtraction</i></p> <ul style="list-style-type: none"> - Continue to add and subtract mentally and apply written methods effectively recognising when they are needed 	
	<p>Geometry (shape)</p> <ul style="list-style-type: none"> - draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them - recognise angles as a property of shape - identify horizontal and vertical lines and pairs of perpendicular and parallel lines. 	<p>Multiplication and Division</p> <ul style="list-style-type: none"> - recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables - write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods - solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. 	<p><i>Multiplication and Division</i></p> <ul style="list-style-type: none"> - recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables - Continue to apply formal written methods when solving problems 		
		<p>Fractions</p> <ul style="list-style-type: none"> - count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 - recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators - recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$] - compare and order unit fractions, and fractions with the same denominators - solve problems that involve all of the above. 	<p><i>Fractions</i></p> <ul style="list-style-type: none"> - 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 - compare and order unit fractions, and fractions with the same denominators - recognise and show, using diagrams, equivalent fractions with small denominators 		
			<p>Geometry (position & direction)</p> <ul style="list-style-type: none"> - recognise angles as a property of shape or a description of a turn - identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle 	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> - add and subtract numbers mentally, - add and subtract numbers with up to three digits, using formal written methods - estimate the answer to a calculation and use inverse operations to check answers - solve problems, subtraction. 	<p>Multiplication and Division</p> <ul style="list-style-type: none"> - recall and use multiplication and division facts - write and calculate mathematical statements for multiplication and division - solve missing number and scaling problems
				<p>Measures</p> <ul style="list-style-type: none"> - measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) - measure the perimeter of simple 2-D shapes - add and subtract amounts of money to give change, using both £ and p in practical contexts - tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks - estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight - compare durations of events 	
<p>Measures (time)</p> <ul style="list-style-type: none"> - tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks - estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight - know the number of seconds in a minute and the number of days in each month, year and leap year - compare durations of events [for example to calculate the time taken by particular events or tasks] 					
<p><i>Developing number sense – Children see number in a variety of contexts throughout the year (money £&p, measures g/kg, ml/l, mm/cm/m), learn and recall x3, x4, and x8 tables.</i></p>					
<p><i>Maths in other subjects (Statistics is taught and used across STEM subjects – particularly in Science when recording and interpreting data)</i></p> <ul style="list-style-type: none"> - interpret and present data using bar charts, pictograms and tables - solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. 					

Rockcliffe First School - Maths Curriculum Overview - Year 4

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Number and Place Value</p> <ul style="list-style-type: none"> - find 1000 more or less than a given number - count backwards through zero to include negative numbers - recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) - order and compare numbers beyond 1000 - identify, represent and estimate numbers using different representations - round any number to the nearest 10, 100 or 1000 - solve number and practical problems that involve all of the above and with increasingly large - positive numbers - read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. 	<p><i>Number and Place Value</i></p> <ul style="list-style-type: none"> - count in multiples of 6, 7, 9, 25 and 1000 - find 1000 more or less than a given number - round any number to the nearest 10, 100 or 1000 				
	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> - add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - estimate and use inverse operations to check answers to a calculation - solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. 	<p><i>Addition and Subtraction</i></p> <p>- Continue to add and subtract mentally and apply written methods effectively recognising when they are needed</p>			
	<p>Geometry (shape)</p> <ul style="list-style-type: none"> - compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes - identify acute and obtuse angles and compare and order angles up to two right angles by size - identify lines of symmetry in 2-D shapes presented in different orientations - complete a simple symmetric figure with respect to a specific line of symmetry. 	<p>Multiplication and Division</p> <ul style="list-style-type: none"> - recall multiplication and division facts for multiplication tables up to 12×12 - use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers - recognise and use factor pairs and commutativity in mental calculations - multiply two-digit and three-digit numbers by a one-digit number using formal written layout - solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. 	<p><i>Multiplication and Division</i></p> <p>- recall multiplication and division facts for multiplication tables up to 12×12</p> <p>- Continue to apply formal written methods when solving problems</p>		
		<p>Fractions</p> <ul style="list-style-type: none"> - recognise and show, using diagrams, families of common equivalent fractions - solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number - add and subtract fractions with the same denominator - recognise and write decimal equivalents of any number of tenths or hundredths - recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ - find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths - compare numbers with the same number of decimal places up to two decimal places - solve simple measure and money problems involving fractions and decimals to two decimal places. 	<p><i>Fractions</i></p> <ul style="list-style-type: none"> - count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. - round decimals with one decimal place to the nearest whole number 		
			<p>Geometry (position and direction)</p> <ul style="list-style-type: none"> - describe positions on a 2-D grid as coordinates in the first quadrant - describe movements between positions as translations of a given unit to the left/right and up/down - plot specified points and draw sides to complete a given polygon. 	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> - add and subtract numbers with up to 4 digits using the formal written methods - estimate and use inverse operations to check answers to a calculation - solve addition and subtraction two-step problems in contexts. 	<p>Multiplication and Division</p> <ul style="list-style-type: none"> - recall multiplication and division facts for multiplication tables up to 12×12 - recognise and use factor pairs and commutativity in mental calculations
				<p>Measures</p> <ul style="list-style-type: none"> - Convert between different units of measure [for example, kilometre to metre; hour to minute] - measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres - find the area of rectilinear shapes by counting squares - estimate, compare and calculate different measures, including money in pounds and pence - read, write and convert time between analogue and digital 12- and 24-hour clocks - solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. 	
<p>Measures (time)</p> <ul style="list-style-type: none"> - read, write and convert time between analogue and digital 12- and 24-hour clocks - solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. 					
<p><i>Developing number sense – Children see number in a variety of contexts throughout the year (money £&p, measures g/kg, ml/l, mm/cm/m), children learn and recall tables up to 12×12.</i></p>					
<p><i>Maths in other subjects (Statistics is taught and used across STEM subjects – particularly in Science when recording and interpreting data)</i></p> <ul style="list-style-type: none"> - interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. - solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. 					

