

# Mathematics



## Evelyn Street Primary Academy

Intended curriculum

## **Evelyn Street Primary Academy – Medium Term Plans**

Our curriculum is built on the National Curriculum, which we then underpin with WhiteRose resources, First4Maths, NCETM (National Council for Excellence in the Teaching of Mathematics) and the Department for Education's maths guidance 2020 to ensure all of our children are ready to progress to the next step in their learning. The fundamental idea behind our curriculum design is to support our children to be able to perform simpler tasks so they can then move on to perform more complex tasks. Through this 'small step' teaching approach we support our children to develop the necessary skills to become 'deep thinkers'. Learning across the year is linked, ensuring there are plenty of opportunities to revisit core skills and apply learning from other topics within maths. This approach means that our children are able to make rich connections and acquire skills that can be recalled quickly and be transferred and applied in different contexts in Maths and more widely. Children are set into two groups across the year group, with targeted support for those struggling or for those needing deeper challenge. We ensure that maths is taught in creative and engaging ways. Wherever possible, mathematical concepts are introduced and explored within everyday contexts, giving children the chance to experience hands-on learning.

Our aim is to ensure that the three core areas of the national curriculum are covered in all our lessons: fluency, reasoning and problem solving. Children get to practice their maths skills regularly, with a focus on developing their ability to recall and apply their knowledge rapidly and accurately. As well as a daily maths lesson, we teach daily 'arithmetic' lessons which focus on calculation and fluency, as well as continually recapping prior knowledge.

### **What your child will learn**

- To talk confidently about Maths and their learning, relating it to real life purposes.
- Use acquired vocabulary in lessons and discussions
- Use mathematical methods independently and show perseverance when tackling problems.
- Use different representations of mathematical concepts.

# NURSERY

## Evelyn Street Primary School- Number and Number Patterns

### Maths progression through EYFS Nursery

**Educational Programme:** Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

**ELG: Number** ■ Have a deep understanding of number to 10, including the composition of each number ■ Subitise (recognise quantities without counting) up to 5 ■ Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts

**ELG: Numerical Patterns** ■ Verbally count beyond 20, recognising the pattern of the counting system ■ Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity ■ Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally

Focus	Place value: Counting	Place value: Represent	Place value: Use and compare	Addition and subtraction; recall, represent, use	Addition and subtraction: Calculation	Addition and subtraction: Solve problems
<b>Nursery Skills, Knowledge &amp; Understanding</b>	<ul style="list-style-type: none"> <li>Enjoy counting verbally as far as they can go</li> <li>Point or touch (tag) each item, saying one number for each item, using the stable order of 1,2,3,4,5</li> <li>Use some number names and number language within play, and may show fascination with large numbers</li> </ul>	<ul style="list-style-type: none"> <li>Begin to recognise numerals 0 to 10</li> <li>Subitise one, two and three objects (without counting)</li> <li>Link numerals with amounts up to 5 and maybe beyond</li> </ul>	<ul style="list-style-type: none"> <li>Compare two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. <i>You've got two, I've got two. Same!</i></li> </ul>	<ul style="list-style-type: none"> <li>Count up to five items, recognising that the last number said represents the total counted so far (cardinal principle)</li> <li>Ascribe mathematical meaning to own marks</li> </ul>	<ul style="list-style-type: none"> <li>Through play and exploration, begin to learn that numbers are made up (composed) of smaller numbers</li> <li>Begin to recognise that each counting number is one more than the one before</li> </ul>	<ul style="list-style-type: none"> <li>Begin to use understanding of number to solve practical problems in play and meaningful activities</li> <li>Separate a group of three or four objects in different ways, beginning to recognise that the total is still the same</li> </ul>

Focus	Spatial Awareness	Shape	Pattern	Measures
<b>Nursery Skills, Knowledge &amp; Understanding</b>	<ul style="list-style-type: none"> <li>Respond to and uses language of position and direction</li> <li>Predict, move and rotate objects to fit the space or create the shape they would like</li> </ul>	<ul style="list-style-type: none"> <li>Choose items based on their shape which are appropriate for a purpose</li> <li>Know 2D shapes names – circle, triangle, rectangle, square</li> <li>Know some 3D shape names</li> <li>Show awareness of shape similarities and differences between objects</li> <li>Enjoy partitioning and combining shapes to make new shapes with 2D and 3D shapes</li> <li>Attempt to create arches and enclosures when building, using trial and improvement to select blocks</li> </ul>	<ul style="list-style-type: none"> <li>Create their own spatial patterns showing some organisation or regularity</li> <li>Explore and adds to simple linear patterns of two or three repeating items, e.g., <i>stick, leaf (AB) or stick, leaf, stone (ABC)</i></li> <li>Join in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next</li> </ul>	<ul style="list-style-type: none"> <li>In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items</li> <li>Recall a sequence of events in everyday life and stories</li> </ul>

□ Children will be exposed to mathematical vocabulary and mathematical experiences in the indoor and outdoor classrooms. □ Through well-chosen resources such as water play, sand play, construction and small world children will be able to play what they know in a purposeful way whilst learning.

EYFS – Reception Year

EYFS Curriculum (ELGs in bold)	Key Performance Indicators	Potential to deepen the learning
<b>Cardinality and Counting</b> (Mostly incorporated within ELG statement <i>Have a deep understanding of number to 10</i> )		
Accurately count a set of up to 10 objects and say how many there are	<ul style="list-style-type: none"> <li>Recites 1-10 in a stable counting order</li> <li>Uses 1:1 correspondence to accurately count a set of up to 5 objects</li> <li>Understands last number said represents whole set up to 5</li> <li>Counts out up to 5 objects from a larger group</li> <li>Uses 1:1 correspondence to accurately count a set of up to 10 objects</li> <li>Understands last number said represents whole set up to 10</li> <li>Counts out up to 10 objects from a larger group</li> </ul>	
<b>Subitise (recognise quantities without counting) up to 5</b>	<ul style="list-style-type: none"> <li>Can subitise regular arrangements of the quantities 1-3 e.g. a dice face, fingers or structured manipulatives like numicon or counters on a five frame</li> <li>Can recognise small amounts (up to three) when they are not in the 'regular' arrangement, e.g. small handfuls of objects</li> <li>Can subitise regular arrangements of quantities 1-5 e.g. a dice face, fingers or structured manipulatives like numicon or counters on a tens frame</li> <li>Can subitise small amounts (up to five) when they are not in the 'regular' arrangement, e.g. small handfuls of objects.</li> </ul>	<ul style="list-style-type: none"> <li>Applies subitising when showing/getting a set or playing a game? (e.g. instantly picks up 5 pebbles on request without counting)</li> </ul>
Read and match number symbols to sets of objects	<ul style="list-style-type: none"> <li>Can say the number word when shown numerals 1-5</li> <li>Counts out and matches sets of objects to numerals 1-5</li> <li>Can put the numeral cards 1-5 in order</li> <li>Can say the number word when shown numerals 6-10</li> <li>Counts out and matches sets of objects to numerals 6-10</li> <li>Can put the numeral cards 1-10 in order</li> </ul>	<ul style="list-style-type: none"> <li>Begin to reason and problem solve within the range 1-10</li> </ul>
Recognise when amounts have been rearranged and generalise that, if nothing has been added or taken away, then the amount is the same.	<ul style="list-style-type: none"> <li>Knows that it doesn't matter which item you count first the count will be the same</li> <li>Arranges a given set of objects in different ways and still knows how many there are without recounting</li> <li>Corrects a puppet that thinks there are more objects when items are more spread out</li> </ul>	<ul style="list-style-type: none"> <li>Begin to reason and problem solve within the range 1-10</li> </ul>
Can count forwards and backwards from any number to 10	<ul style="list-style-type: none"> <li>Can count backwards from 10-0</li> <li>Can count forwards to 10 from any start number</li> <li>Can count forwards from any number and stop at a given number e.g. count from 2-7</li> <li>Can count backwards to zero from any number</li> <li>Can count backwards starting from any number to 10 and stop at a given number e.g. count backwards from 8 to 3</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<b>Verbally count beyond 20, recognising the pattern of the counting system;</b>	<ul style="list-style-type: none"> <li>Begins to count a few numbers past 10</li> <li>Can join in with whole class counting in highly patterned parts e.g. 22, 23, 24</li> <li>Counts to 20 accurately without missing out numbers</li> <li>Can spot the 1-9 pattern appearing again and again within each decade on a 100 square and uses this to support counting from 20-29</li> </ul>	<ul style="list-style-type: none"> <li>Knows the order of the tens to confidently count beyond 29 including over each tens barrier e.g. 69, 70, 71</li> </ul>

**Comparison**

*(Partly incorporated within ELG statement **Have a deep understanding of number to 10**)*

<p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p>	<ul style="list-style-type: none"> <li>• Compares sets with big differences in number and uses more than and fewer than to compare</li> <li>• Can compare sets of items with smaller differences (including some that are the same) by pairing up one-to-one</li> <li>• Can compare more than two sets of objects and use most and fewest</li> </ul>	<ul style="list-style-type: none"> <li>• Can reason about which set has more and how to make them equal</li> </ul>
<p>Compare two numbers up to 10 and say which is more/less</p>	<ul style="list-style-type: none"> <li>• Can say which numeral is more or less by making sets and comparing</li> <li>• Can say which numeral is more or less using the relative position in the counting sequence</li> </ul>	<ul style="list-style-type: none"> <li>• Position numerals on an empty 1-10 number track using reasoning e.g. I know 9 goes here because it is just before 10.</li> </ul>
<p>Use 1 more and 1 less relationship to predict how many there will be if you add one or take one away from a set of objects up to 10</p>	<ul style="list-style-type: none"> <li>• Count out a set of objects onto a tens frame to match a numeral. Add one more object and count or subitise to find the answer to one more question.</li> <li>• Count out objects onto a number track to work out the answer and through doing this make links to counting sequence.</li> <li>• Count out a set of objects onto a tens frame to match a numeral. Take one object away and count or subitise to find the answer to one less question.</li> <li>• Count out objects onto a number track to work out the answer and through doing this make links to using the counting sequence.</li> <li>• Develop mental number line linked to staircase pattern to say 1 more for any number to 10 without apparatus</li> <li>• Develop mental number line linked to staircase pattern to say 1 less for any number to 10 without apparatus</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate other staircase patterns (e.g. going up in steps of 2 from 1 or 2), can they work out what is happening? Can they record the pattern and link it to the number track?</li> </ul>

**Composition**

*(Mostly incorporated within ELG statement **Have a deep understanding of number to 10, including the composition of each number**)*

<p>Notice and subitise small groups within a larger set of objects (conceptual subitising)</p>	<ul style="list-style-type: none"> <li>• Use subitising to notice small groups (1-3) within a larger group of objects</li> <li>• Use subitising to notice small groups (up to 5) within a larger group of objects</li> <li>• Applies subitising (up to 5) to create groups within groups exploring different ways each number to 5 can look and describes what they see e.g. With my 5 I have made a 3 and a 2</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Begins to combine small groups to a total and articulates this e.g. I know there are 4 because I can see a 2 and a 2</li> <li>• Be more systematic in exploring all the groups within groups for a given number so they know they have found all the possible representations</li> </ul>
<p>In practical activities, partition and recombine numbers up to 5 and then 10 into different pairs of numbers</p>	<ul style="list-style-type: none"> <li>• Investigates inverse operations through play – taking things away and putting them back</li> <li>• Physically separating a group of up to 10 objects (whole) into two parts (part- part-whole model)</li> <li>• Constructing a group of up to 10 (whole) from two kinds of things (parts)</li> <li>• Explore numbers 6-10 on apparatus that allows children to relate them back to 5 e.g. on tens frames 7 is a whole row of 5 and 2 more, on bead strings 7 is 5 white beads and 2 red ones</li> </ul>	<ul style="list-style-type: none"> <li>• Makes generalisations e.g. each part can never be bigger than the whole</li> </ul>
<p>Automatically recall (without reference to rhymes, counting or other aides) number bonds up to 5 (including subtraction facts)</p>	<ul style="list-style-type: none"> <li>• Use a systematic approach to find all the ways to make all the numbers up to 5 and begin to know some of these facts</li> <li>• In a play-based context, for numbers up to 5, predict all the pairs that can be made when you partition the number (number bonds)</li> </ul>	<ul style="list-style-type: none"> <li>• Makes generalisations and easily notices and uses patterns like always starting with the number and zero and then 1 less than the number and 1 or realising that every pair can be switched around to make a new pair</li> <li>• Reason and problem solve using known facts</li> </ul>
<p>Automatically recall (without reference to rhymes, counting or other aides) some number bonds to 10, including double facts.</p>	<ul style="list-style-type: none"> <li>• Use a systematic approach to find all the ways to make 10</li> <li>• In a play-based context with 10 objects, predict a few of the pairs that can be made when you partition ten (number bonds)</li> <li>• Link composition work to work in pattern to explore how some numbers can be partitioned into equal parts and learn these double facts</li> </ul>	<ul style="list-style-type: none"> <li>• Uses generalisations from knowing number bonds 1-5 to explain how to find pairs that make 6-9 more efficiently e.g. knows to start with 0 and the number being partitioned, then put the 0 up by 1 and the other number down by 1</li> </ul>

**Pattern**

<p>Recognise, continue, copy and create repeating patterns</p>	<ul style="list-style-type: none"> <li>• Can continue an AB pattern</li> <li>• Can copy an AB pattern</li> <li>• Can make their own AB patterns</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
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	<ul style="list-style-type: none"> <li>● Can continue an ABC, ABB, AABB, ABBC pattern</li> <li>● Can copy an ABC, ABB, AABB, ABBC pattern</li> <li>● Can make their own ABC, ABB, AABB, ABBC patterns</li> </ul>	
Identify the unit of repeat in a repeating pattern	<ul style="list-style-type: none"> <li>● Identify the smallest part of a pattern and use this to 'name' a pattern</li> <li>● Split a pattern into these parts and use this to be able to spot errors in patterns</li> <li>● Use this knowledge to continue a pattern from the midpoint of a unit of repeat</li> <li>● Use this knowledge to correct a pattern without having to start all over again</li> </ul>	<ul style="list-style-type: none"> <li>● Make circular patterns – investigating whether their pattern will fit</li> <li>● Make square border patterns investigating whether their pattern will fit</li> </ul>
Symbolise the unit structure of a repeating pattern and generalise the structure to another context	<ul style="list-style-type: none"> <li>● Use own mark making ideas to record a pattern e.g. record a colour pattern with tally marks in different colours</li> <li>● Use objects to record a pattern e.g. picture cards to represent movements in a dance pattern</li> <li>● Make links between different contexts e.g. link the 2 ideas above by using a red tally to be a spin and a green tally to be a clap for example create the same pattern in a different context</li> </ul>	<ul style="list-style-type: none"> <li>● Apply ability to symbolise patterns to reason about whether a given pattern will fit around a circle or a square border</li> <li>●</li> </ul>
Spot and create staircase patterns	<ul style="list-style-type: none"> <li>● Notice growing patterns in books e.g. There was an old lady who swallowed a fly and order images as a staircase pattern</li> <li>● Make staircase patterns in ones with concrete apparatus such as Cuisenaire rods or numicon</li> <li>● Make link to 1 more and 1 less on number track and develop mental number line until they can say 1 more and 1 less for any number to 10</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>● Investigate other staircase patterns, can they work out what is happening? Can they record the pattern and link it to the number track?</li> </ul>
Explore and represent patterns within numbers up to 10, including evens and odds.	<ul style="list-style-type: none"> <li>● Sort odd and even representations of numbers e.g. numicon, numberblocks or counters on tens frames</li> <li>● Understand that even numbers can be represented exactly by sets of 2 and odd numbers have an odd one out</li> <li>● Use this to prove with practical apparatus whether a number is odd or even in range 0-10•</li> </ul>	<ul style="list-style-type: none"> <li>● Link odds and evens back to step patterns in twos and predict an odd or even number beyond 10</li> </ul>
Explore and represent patterns within numbers up to 10, including double facts and how quantities can be distributed equally.	<ul style="list-style-type: none"> <li>● Make reflective patterns e.g. using paint and fold in half then add extra pattern components on both sides or using graphics package with reflection enabled</li> <li>● Reflect sets of objects and record how many there are in total</li> <li>● Link sharing equally to known facts from composition work e.g. 2 composed from 1 and 1, 4 (2 and 2), 10 (5 and 5)</li> <li>● Moderation Comment and Date.</li> </ul>	<ul style="list-style-type: none"> <li>● Systematically generate doubles and halves facts to 10 and learn them all off by heart</li> </ul>

# YEAR 1 END GOALS

<b>Autumn</b>	<p style="text-align: center;"><b>Number: Place Value (within 10)</b></p> <ul style="list-style-type: none"> <li>RTP: NPV1 Count within 100, forwards and backwards, starting with any number.</li> <li>RTP: NPV2 Reason about the location of numbers to 20 within the linear number system, including comparing using <math>&lt;</math> <math>&gt;</math> and <math>=</math></li> <li>NC: count, read and write numbers to 100 in numerals</li> <li>NC: given a number, identify 1 more and 1 less</li> <li>NC: 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</li> <li>NC: read and write numbers from 1 to 20 in numerals and words.</li> </ul>		<p style="text-align: center;"><b>Number: Addition and Subtraction (within 10)</b></p> <ul style="list-style-type: none"> <li>RTP: NF1 Develop fluency in addition and subtraction facts within 10.</li> <li>RTP: AS1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.</li> <li>RTP: AS2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.</li> <li>NC: read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</li> <li>NC: represent and use number bonds and related subtraction facts within 20</li> <li>NC: add and subtract one-digit including 0</li> <li>NC: solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = ? - 9</math></li> </ul>		<p style="text-align: center;"><b>Geometry: Shape</b></p> <ul style="list-style-type: none"> <li>RTP: G1 Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.</li> <li>NC: 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].</li> </ul>	
<b>Spring</b>	<p style="text-align: center;"><b>Number: Place Value (within 20)</b></p> <ul style="list-style-type: none"> <li>RTP: NPV1 Count within 100, forwards and backwards, starting with any number.</li> <li>RTP: NPV2 Reason about the location of numbers to 20 within the linear number system, including comparing using <math>&lt;</math> <math>&gt;</math> and <math>=</math></li> <li>NC: given a number, identify 1 more and 1 less</li> <li>NC: 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</li> <li>NC: read and write numbers from 1 to 20 in numerals and words.</li> </ul>	<p style="text-align: center;"><b>Number: Addition and Subtraction (within 20)</b></p> <ul style="list-style-type: none"> <li>RTP: AS2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.</li> <li>NC: read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</li> <li>NC: represent and use number bonds and related subtraction facts within 20</li> <li>NC: add and subtract one-digit and two-digit numbers to 20, including 0</li> <li>NC: solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = ? - 9</math></li> </ul>	<p style="text-align: center;"><b>Place value within 50</b></p> <ul style="list-style-type: none"> <li>RTP: NPV1 Count within 100, forwards and backwards, starting with any number.</li> <li>RTP: NF2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</li> <li>NC: count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>NC: count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s</li> <li>NC: given a number, identify 1 more and 1 less</li> <li>NC: 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</li> <li>NC: read and write numbers from 1 to 20 in numerals and words.</li> </ul>	<p style="text-align: center;"><b>Measurement: Length and height</b></p> <ul style="list-style-type: none"> <li>RTP: NPV2 Reason about the location of numbers to 20 within the linear number system, including comparing using <math>&lt;</math> <math>&gt;</math> and <math>=</math></li> <li>RTP: AS2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.</li> <li>NC: compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</li> <li>NC: measure and begin to record lengths and heights</li> </ul>	<p style="text-align: center;"><b>Measurement: Mass and Volume</b></p> <ul style="list-style-type: none"> <li>RTP: AS2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.</li> <li>NC: compare, describe and solve practical problems for <b>mass / weight AND capacity and volume</b></li> <li>NC: measure and begin to record mass/weight AND capacity and volume</li> </ul>	
<b>Summer</b>	<p style="text-align: center;"><b>Number: Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>RTP: NF2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning</li> <li>NC: 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.</li> </ul>	<p style="text-align: center;"><b>Number: Fractions</b></p> <ul style="list-style-type: none"> <li>NC: recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity</li> <li>NC: recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity</li> </ul>	<p style="text-align: center;"><b>Geometry: Position &amp; Direction</b></p> <ul style="list-style-type: none"> <li>RTP: G2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations</li> <li>NC: describe position, directions and movements, including whole, half, quarter and three-quarter turns.</li> </ul>	<p style="text-align: center;"><b>Number: Place Value (within 100)</b></p> <ul style="list-style-type: none"> <li>RTP: NPV1 Count within 100, forwards and backwards, starting with any number.</li> <li>NC: count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>NC: count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s</li> <li>NC: given a number, identify 1 more and 1 less</li> <li>NC: identify and represent numbers using objects and pictorial representations including the number line, and use the language of correspondence</li> </ul>	<p style="text-align: center;"><b>Measures: Money</b></p> <ul style="list-style-type: none"> <li>NC: recognise and know the value of different denominations of coins and notes</li> </ul>	<p style="text-align: center;"><b>Measurement: Time</b></p> <ul style="list-style-type: none"> <li>NC: compare, describe and solve practical problems for <b>time</b></li> <li>NC: measure and begin to record time (hours, minutes, seconds)</li> <li>NC: sequence events in chronological order using language</li> <li>NC: recognise and use language relating to dates, including days of the week, weeks, months and years</li> <li>NC: tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</li> </ul>

## YEAR 2 END GOALS

Autumn	<p style="text-align: center;"><b><u>Number: Place Value</u></b></p> <ul style="list-style-type: none"> <li>RTP: NPV1 Recognise place value of each digit in 2 digit numbers; compose and decompose 2 digit numbers (standard + non- standard partitioning)</li> <li>NC: read and write numbers to at least 100 in numerals and in words</li> <li>RTP: NPV2 Reason about the location of any 2 digit number, including identifying the previous and next multiple of 10.</li> <li>NC: identify, represent and estimate numbers using different representations, including the number line</li> <li>NC: compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</li> <li>NC: count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</li> <li>NC: use place value and number facts to solve problems.</li> <li>TAF = read scales in divisions of ones, twos, fives and tens</li> <li>TAF = partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus</li> </ul>				<p style="text-align: center;"><b><u>Number: Addition and Subtraction</u></b></p> <ul style="list-style-type: none"> <li>RTP: NF1 Secure fluency in addition and subtraction facts within 10, through continued practice.</li> <li>NC: recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> <li>RTP: AS1 Add and subtract across 10.</li> <li>NC: add and subtract numbers using various representations <u>mentally</u>, including: a two-digit and 1s, a two-digit and 10s, 2 two-digit numbers, 3 one-digit numbers</li> <li>RTP: AS2 Recognise the subtraction structure of 'difference' (How many more...?)</li> <li>NC: show that addition of 2 numbers is commutative and subtraction of one number from another is not</li> <li>NC: recognise and use the inverse relationship between addition and subtraction (use to check and solve missing number problems)</li> <li>RTP: AS3 and AS4 Add and subtract within 100: add and subtract only ones or only tens to/from a two- digit number <u>and</u> add and subtract any 2 two- digit numbers.</li> <li>NC: solve problems with addition and subtraction using representations, applying their increasing knowledge of mental and written methods</li> <li>TAF = add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17)</li> <li>TAF = recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 – 3 = 4, then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)</li> </ul>				<p style="text-align: center;"><b><u>Geometry: Properties of Shape</u></b></p> <ul style="list-style-type: none"> <li>RTP: G1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.</li> <li>NC: identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</li> <li>NC: identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</li> <li>NC: identify 2-D shapes on the surface of 3-D shapes</li> <li>NC: compare and sort common 2-D and 3-D shapes and everyday objects.</li> <li>TAF = name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.</li> </ul>			
Spring Y2	<p style="text-align: center;"><b><u>Measurement: money</u></b></p> <ul style="list-style-type: none"> <li>Continue to explore RTP: NPV2 and AS1 – AS4</li> <li>NC: recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>NC: find different combinations of coins that equal the same amounts of money.</li> <li>NC: solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</li> <li>TAF = use different coins to make the same amount</li> </ul>		<p style="text-align: center;"><b><u>Number: Multiplication and Division</u></b></p> <ul style="list-style-type: none"> <li>RTP: MD1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables</li> <li>RTP: MD2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).</li> <li>NC: recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including odd and even numbers</li> <li>NC: calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</li> <li>NC: show that multiplication of 2 numbers is commutative and division is not</li> <li>NC: solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</li> <li>TAF = recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary</li> </ul>		<p style="text-align: center;"><b><u>Measurement: Length &amp; Height</u></b></p> <ul style="list-style-type: none"> <li>NC: choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); to the nearest appropriate unit using rulers (tape measure etc)</li> <li>NC: compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</li> </ul>		<p style="text-align: center;"><b><u>Measurement: Mass, Capacity and Temperature</u></b></p> <ul style="list-style-type: none"> <li>NC: choose and use appropriate standard units for mass (kg/g); temperature (°C); capacity (litres/ml) use scales, thermometers and measuring vessels</li> <li>NC: compare and order measures and record the results using &gt;, &lt; and =</li> </ul>					
<p style="text-align: center;"><b><u>Number: Fractions</u></b></p> <ul style="list-style-type: none"> <li>NC: recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity</li> <li>NC: write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.</li> <li>TAF = identify ¼, 1/3, ½, 2/4, ¾ of a number or shape, and know that all parts must be equal parts of the whole</li> </ul>		<p style="text-align: center;"><b><u>Measurement: Time</u></b></p> <ul style="list-style-type: none"> <li>NC: compare and sequence intervals of time</li> <li>NC: 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.</li> <li>NC: know the number of minutes in an hour and the number of hours in a day</li> <li>TAF= read the time on a clock to the nearest 15 minutes</li> </ul>		<p style="text-align: center;"><b><u>Statistics</u></b></p> <ul style="list-style-type: none"> <li>RTP: MD1</li> <li>RTP: NPV2</li> <li>NC: interpret and construct simple pictograms, tally charts, block diagrams and tables</li> <li>NC: ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>NC: ask and answer questions about totalling and comparing categorical data</li> </ul>		<p style="text-align: center;"><b><u>Geometry: Position and Direction</u></b></p> <ul style="list-style-type: none"> <li>NC: order and arrange combinations of mathematical objects in patterns and sequences</li> <li>NC: use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).</li> </ul>						



Term	3/4 key vocabulary overview			
Autumn	<p><b>Number: Place Value</b></p> <p>Yr 3 = ten times the size of, previous and next multiple of 10 or 100, ascending and descending, Scale up, regroup, interval</p> <p>Yr 4 = consecutive, integer, positive, negative (do not use minus to refer to negative numbers), closest multiple, rounded to</p>	<p><b>Number: Addition and Subtraction</b></p> <p>Yr 3 = partition, regroup, estimate, check, inverse, efficiency, Missing part, minuend, subtrahend, difference sum, addend</p> <p>Yr 4 = scaling, formal, columnar, estimate, regroup</p>	<p><b>Number: Multiplication and Division</b></p> <p>Yr 3 = Factor, product, double and double again, six fours are twenty-four (verbalise sound pattern of 3 relevant numbers), quotient, sharing (partitive), grouping (quotitive)</p> <p>Yr 4 = dividend, multiple, divisor, remainder, factor pairs, commutative, distributive, quotient, represents, correspondence problems</p>	
Spring	<p><b>Number: Multiplication and Division</b></p> <p>Yr 3 = Factor, product, Double and double again, six fours are twenty-four (verbalise sound pattern of 3 relevant numbers), quotient, sharing (partitive), grouping (quotitive)</p> <p>Yr 4 = dividend, multiple, divisor, remainder, factor pairs, commutative, distributive, quotient, represents, correspondence problems</p>	<p><b>Measurement: Length, Perimeter and area</b></p> <p>Yr 3 = perimeter, length (m/cm/mm), duration</p> <p>Yr 4 = metric unit, rectilinear, mm, cm, m, km (kilo), units of measure, area</p>	<p><b>Number: Fractions</b></p> <p>Yr 3 = tenths, unit/non-unit fraction, numerator, denominator mixed number, equal parts, interval</p> <p>Yr 4 = proper and improper, equivalent</p>	<p><b>Measures: Mass and Capacity</b></p> <p>Yr 3 = volume/capacity (l/ml) Grams, kilograms, mass (kg/g); litres, millilitres,</p> <p>Yr 4 = unit of measure, metric</p>
Summer	<p><b>Number: Decimals</b> <b>Measure: Money</b></p> <p>Yr 3 = add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <p>Yr 4 = equivalent, 2 decimal places (2dp), round, nearest whole number, tenth, hundredth, estimate, compare</p>	<p><b>Measurement: Time</b></p> <p>Yr 3 = Calendar, a.m. p.m., Roman numerals, 12 hour clock and 24 hour clock, analogue and digital, use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight, duration, year and leap year</p> <p>Yr 4 = convert, approximately, difference</p>	<p><b>Statistics</b></p> <p>Yr 3 = interpret, present, pictogram, bar chart, frequency table, Venn diagram, axis/axes</p> <p>Yr 4 = interpret, present discrete and continuous data, using appropriate, time graphs, Carroll diagram</p>	<p><b>Geometry: Properties of shape</b> <b>Position and direction</b></p> <p>Yr 3 = 2-D shapes and 3-D shapes, parallel, perpendicular, polygon, polyhedron, sphere, cuboid, cylinder, pyramid, cone, prism, horizontal, vertical, orientation, angles, turn, greater than, less than, half turn, right angle, quarter turn, clockwise, anti-clockwise</p> <p>Yr 4 = quadrilateral, triangle, regular, irregular, symmetry, orientation, edge, vertex, isosceles, equilateral, scalene, trapezium, parallelogram, rhombus, interior angles, acute, obtuse, straight line, properties, coordinates, plot, translation, first quadrant, x and y axis</p>

## 3/4 Autumn END GOALS

Number: Place Value		Number: Addition and Subtraction		Number: Multiplication and Division	
3	4	3	4	3	4
<ul style="list-style-type: none"> <li>NPV1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.</li> <li>NPV2 Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.</li> <li>NPV3 Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.</li> <li>NPV4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.</li> <li>NC: solve number problems and practical problems involving these ideas</li> </ul>	<ul style="list-style-type: none"> <li>NPV1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.</li> <li>NPV2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. NC: identify, represent and estimate numbers using different representations</li> <li>NPV3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100 (AND 10), and rounding to the nearest of each.</li> <li>NC: count backwards through 0 to include negative numbers</li> <li>NC: solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>NC: count in multiples of 25 and 1,000</li> <li>NC: read Roman numerals to 100 and know that over time, the numeral system changed to include 0 and place value</li> </ul>	<ul style="list-style-type: none"> <li>AS1 Calculate complements to 100, for example: <math>46 + ? = 100</math></li> <li>AS2 Add and subtract up to three-digit numbers using columnar methods.</li> <li>AS3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.</li> <li>NF1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.</li> <li>NF3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).</li> <li>NC: solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</li> </ul>	<ul style="list-style-type: none"> <li>NF3 Apply place-value knowledge to known additive facts (scaling facts by 100)</li> <li>NC: add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> <li>NC: estimate and use inverse operations to check answers to a calculation</li> <li>NC: solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	<ul style="list-style-type: none"> <li>MD1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.</li> <li>NF2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number</li> <li>NF3</li> <li>NPV1</li> <li>NC: 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</li> </ul>	<ul style="list-style-type: none"> <li>NF1 Recall multiplication and division facts up to <math>12 \times 12</math> and recognise products in multiplication tables as multiples of the corresponding number.</li> <li>NF3 Apply place-value knowledge to known multiplicative number facts (scaling facts by 100)</li> <li>MD1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.</li> <li>MD2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.</li> <li>NC: count in multiples of 6, 7, 9, 25 and 1,000</li> </ul>

## 3/4 Spring END GOALS

Number: Multiplication and Division		Measurement: Length, Perimeter and area		Number: Fractions		Measures: Mass and Capacity Number: Decimals	
3	4	3 = Length and perimeter	4 = Length, perimeter and area	3	4	3 = Measure	4 = Decimals
<ul style="list-style-type: none"> <li>• MD1</li> <li>• NC: recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> <li>• NC: 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</li> <li>• NC: 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</li> </ul>	<ul style="list-style-type: none"> <li>• NF1, NF3, MD2</li> <li>• MD3 Understand and apply the distributive property of multiplication</li> <li>• NF2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders</li> <li>• NC: use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers</li> <li>• NC: recognise and use factor pairs and commutativity in mental calculations</li> <li>• NC: multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>• NC: solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</li> </ul>	<ul style="list-style-type: none"> <li>• NPV2, AS2 and NPV3</li> <li>• NC: measure, compare, add and subtract: lengths (m/cm/mm)</li> <li>• NC: measure the perimeter of simple 2-D shapes</li> </ul>	<ul style="list-style-type: none"> <li>• NPV4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.</li> <li>• G2 Find the perimeter of regular and irregular polygons.</li> <li>• NC: convert between different units of measure</li> <li>• NC: measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li>• NC: find the area of rectilinear shapes by counting squares</li> </ul>	<ul style="list-style-type: none"> <li>• F1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts (unit fractions and non-unit fractions with small denominators)</li> <li>• F2 Find unit fractions of quantities using known division facts (multiplication tables fluency).</li> <li>• F3 Reason about the location of any fraction within 1 in the linear number system.</li> <li>• NC: 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</li> <li>• NC: recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>• NC: compare and order unit fractions, and fractions with the same denominators</li> <li>• F4 Add and subtract fractions with the same denominator, within 1.</li> <li>• NC solve problems that involve all of the above</li> </ul>	<ul style="list-style-type: none"> <li>• F1 Reason about the location of mixed numbers in the linear number system.</li> <li>• F2 Convert mixed numbers to improper fractions and vice versa.</li> <li>• F3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.</li> <li>• NC: recognise and show, using diagrams, families of common equivalent fractions</li> <li>• NC: count up and down in hundredths; recognise that hundredths arise when dividing an object by a 100 and dividing tenths by 10.</li> <li>• NC: 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</li> <li>• NC: solve simple measure and money problems involving fractions and decimals to 2 decimal places</li> </ul>	<ul style="list-style-type: none"> <li>• NC: measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</li> </ul>	<ul style="list-style-type: none"> <li>• NC: 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</li> <li>• NC: recognise and write decimal equivalents of any number of tenths or hundredths</li> </ul>

## 3/4 Summer END GOALS

Number: Decimals Measure: Money		Measurement: Time		Statistics		Geometry: Properties of shape	
3 = Consolidation of place value and money	4 = Decimals and money	3 = Time	4 = Time	3 =Statistics	4 = Statistics	3 =Properties of shape	4 = Properties of shape and Position and Direction
<ul style="list-style-type: none"> <li>NPV2 and AS2</li> <li>NPV4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.</li> <li>NC: add and subtract amounts of money to give change, using both £ and p in practical contexts</li> </ul>	<p><b>Decimals</b></p> <ul style="list-style-type: none"> <li>NC: compare numbers with the same number of decimal places up to 2 decimal places</li> <li>NC: recognise and write decimal equivalents to <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math></li> <li>NC: round decimals with 1 decimal place to the nearest whole number</li> </ul> <p><b>Money</b></p> <ul style="list-style-type: none"> <li>NC: estimate, compare and calculate different measures, including money in pounds and pence</li> <li>NC: solve simple measure and money problems involving fractions and decimals to 2 decimal places.</li> <li>NC: round decimals with 1 decimal place to the nearest whole number</li> </ul>	<ul style="list-style-type: none"> <li>NC: tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</li> <li>NC: 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, am/pm, morning, afternoon, noon and midnight</li> <li>NC: know the number of seconds in a minute and the number of days in each month, year and leap year</li> <li>NC: compare durations of events</li> </ul>	<ul style="list-style-type: none"> <li>NC: read, write and convert time between analogue and digital 12 and 24-hour clocks</li> <li>NC: solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days</li> </ul>	<ul style="list-style-type: none"> <li>NC: interpret and present data - bar charts, pictograms and tables</li> <li>NC: solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.</li> </ul>	<ul style="list-style-type: none"> <li>NPV4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.</li> <li>NC: interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</li> <li>NC: solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</li> </ul>	<ul style="list-style-type: none"> <li>G1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.</li> <li>NC: recognise that 2 right angles make a half-turn, 3 make three quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle</li> <li>NC: recognise angles as a property of shape or a description of a turn</li> <li>G2 Draw polygons by joining marked points, and identify parallel and perpendicular sides. NC: identify horizontal and vertical lines</li> <li>NC: draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</li> </ul>	<ul style="list-style-type: none"> <li>NC: identify acute and obtuse angles and compare and order angles up to 2 right angles by size</li> <li>G2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal.</li> <li>NC: compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>G3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.</li> </ul> <p><b>Position and direction</b></p> <ul style="list-style-type: none"> <li>NC: describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>G1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.</li> <li>NC: describe movements between positions as translations of a given unit to the left/right and up/down</li> </ul>

## 5/6 Autumn END GOALS

Number: Place Value		Number: Four operations		Number: Fractions	
<ul style="list-style-type: none"> <li>• NPV2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.</li> <li>• NPV3 Reason about the location of any number with up to 2 decimal places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.</li> <li>• NC: read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit</li> <li>• NC: count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000</li> <li>• NC: interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0</li> <li>• NC: round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000</li> <li>• NC: solve number problems and practical problems that involve all of the above</li> <li>• NC: read Roman numerals to 1,000 (M) and recognise years written in Roman numerals</li> </ul>	<ul style="list-style-type: none"> <li>• NPV2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.</li> <li>• NPV3 Reason about the location of any number with up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.</li> <li>• NPV4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.</li> <li>• NC: read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</li> <li>• NC: use negative numbers in context, and calculate intervals across 0</li> <li>• NC: solve number and practical problems that involve all of the above</li> </ul>	<ul style="list-style-type: none"> <li>• NF2 Apply place-value knowledge to known additive facts</li> <li>• NC: add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar)</li> <li>• NC: add and subtract numbers mentally with increasingly large numbers</li> <li>• NC: use rounding to check answers and determine, in context, levels of accuracy</li> <li>• NC: solve + AND - multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>• MD1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.</li> <li>• MD2 Find factors and multiples of positive integers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.</li> <li>• NC: know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers <u>and</u> establish whether a number up to 100 is prime; recall prime numbers to 19</li> <li>• NC: multiply and divide numbers mentally drawing upon known facts</li> <li>• NC: recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> <li>• NC: solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes</li> <li>• NC: solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> <li>• MD3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.</li> <li>• NC: 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</li> <li>• MD4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.</li> <li>• NC: solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	<ul style="list-style-type: none"> <li>• AS/MD-1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).</li> <li>• AS/MD2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.</li> <li>• NC: multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> <li>• NC: 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</li> <li>• NC: 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</li> <li>• NC: perform mental calculations, including with mixed operations and large numbers.</li> <li>• NC: identify common factors, common multiples and prime numbers</li> <li>• NC: use their knowledge of the order of operations to carry out calculations involving the 4 operations</li> <li>• NC: solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• NC: solve problems involving addition, subtraction, multiplication and division</li> <li>• NC: use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> </ul>	<ul style="list-style-type: none"> <li>• 5F2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.</li> <li>• 5F1 Find non-unit fractions of quantities</li> <li>• NC: compare and order fractions whose denominators are all multiples of the same number</li> <li>• NC: identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• NC: recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements &gt; 1 as a mixed number</li> <li>• NC: add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>• NC: multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> </ul>	<ul style="list-style-type: none"> <li>• 6F-1 Recognise when fractions can be simplified, and use common factors to simplify fractions.</li> <li>• 6F-2 Express fractions in a common denominator and use this to compare fractions that are similar in value.</li> <li>• 6F-3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denominator as a comparison strategy.</li> <li>• 6NPV-4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.</li> <li>• NC: add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>• NC: multiply simple pairs of proper fractions, writing the answer in its simplest form</li> <li>• NC: divide proper fractions by whole numbers</li> <li>• NC: associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.</li> </ul>

## Class 5/6 Spring END GOALS

Number: Decimal and Percentages		Measure: Convert units		Number: Ratio		Measure: Perimeter, Area and Volume		Yr 5 Consolidation Yr 6 Algebra	
5	6	5	6	5	6	5	6	5	6
<p><b>NPV1 - 4.</b></p> <p>NC: read and write decimal numbers as fractions</p> <p>NC: recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>NC: read, write, order and compare numbers with up to 3 decimal places</p> <p><b>F-3 and</b> NC: solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and fractions with a denominator of a multiple of 10 or 25.</p> <p>NC: recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction</p> <p><b>MD1 and NF2</b></p> <p>NC: add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>NC: add and subtract numbers mentally with increasingly large numbers</p> <p>NC: use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>NC: solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>NC: multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</p> <p>NC: solve problems involving number up to 3 decimal places</p> <p>NC: use all four operations to solve problems involving measure using decimal notation including scaling.</p> <p>NC: solve problems involving numbers up to 3 decimal places</p>	<p><b>NPV2</b></p> <p>NC: identify the value of each digit in numbers given to three decimal places</p> <p><b>NPV1</b> (NC) giving answers are up to three decimal places</p> <p>NC: multiply one-digit numbers with up to 2 decimal places by whole numbers</p> <p>NC: use written division methods in cases where the answer has up to 2 decimal places</p> <p>NC: solve problems which require answers to be rounded to specified degrees of accuracy</p> <p>NC: solve problems involving the calculation of percentages</p> <p>NC: recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</p> <p>NC: recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</p>	<p><b>NPV5</b> Convert between units of measure, including using common decimals and fractions.</p> <p>NC: understand and use approximate equivalences between metric units and common imperial units (inches, pounds, pints)</p> <p>NC: solve problems involving converting between units of time</p> <p>NC: use all four operations to solve problems involving measure using decimal notation including scaling.</p>	<p>NC: solve problems involving the calculation and conversion of units of measure, using decimal notation up to 2 decimal places where appropriate</p> <p>NC: 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 3 decimal places</p> <p>NC: convert between miles and kilometres</p>	<p>NC: solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</p>	<p><b>AS/MD3</b> Solve problems involving ratio relationships.</p> <p>NC: solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>NC: solve problems involving the calculation of %s and the use of % for comparison</p> <p>NC: solve problems involving similar shapes where the scale factor is known or can be found</p> <p>NC: solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>	<p><b>G2</b> Compare areas and calculate the area of rectangles (including squares) using standard units.</p> <p>NC: including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</p> <p>NC: measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres, <b>estimate</b></p> <p>NC: estimate volume and capacity</p>	<p><b>G1.</b></p> <p>NC: recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>NC: recognise when it is possible to use formulae for area and volume of shapes</p> <p>NC: calculate the area of parallelograms and triangles</p> <p>NC: calculate, estimate and compare volume of cubes and cuboids using standard units(cm<sup>3</sup> and m<sup>3</sup> and other units)</p>	Consolidation	<p><b>6AS/MD-4</b> Solve problems with 2 unknowns.</p> <p>NC: use simple formulae</p> <p>NC: generate and describe linear number sequences</p> <p>NC: express missing number problems algebraically</p> <p>NC: find pairs of numbers that satisfy an equation with two unknowns</p> <p>NC: enumerate possibilities of combinations of 2 variables.</p>

## 5/6 Summer END GOALS

Geometry: Property of Shape		Geometry: Position and direction		Statistics		Investigations and consolidation Problem Solving
5	6	5	6	5	6	
<ul style="list-style-type: none"> <li>• G1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.</li> <li>• NC: acute, obtuse and reflex angles</li> <li>• NC: identify: angles at a point and 1 whole turn (total 360°), angles at a point on a straight line and half a turn (total 180°) other multiples of 90°</li> <li>• NC: use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>• NC: distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> </ul> <p>NC: identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p>	<ul style="list-style-type: none"> <li>• G1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.</li> <li>• NC: recognise, describe and build simple 3-D shapes, including making nets</li> <li>• NC: compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</li> <li>• NC: recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</li> </ul>	<ul style="list-style-type: none"> <li>• NC: 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</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• NC: describe positions on the full coordinate grid (all 4 quadrants)</li> <li>• NC: draw and translate simple shapes on the coordinate plane, and reflect them in the axes</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• NPV4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.</li> <li>• NC: solve comparison, sum and difference problems using information presented in a line graph</li> <li>• NC: complete, read and interpret information in tables, including timetables</li> </ul>	<ul style="list-style-type: none"> <li>• NC: illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</li> <li>• NC: interpret and construct pie charts and line graphs and use these to solve problems</li> <li>• NC: calculate and interpret the mean as an average</li> </ul>	



## 5/6 Summer SMALL STEPS

Geometry: Property of Shape		Geometry: Position and direction		Statistics		Investigations and consolidation Problem Solving
5	6	5	6	5	6	
<ul style="list-style-type: none"> <li>Understand and use degrees</li> <li>Classify and estimate angles</li> <li>Measure angles up to 180 degrees</li> <li>Drawing lines and angles accurately</li> <li>Calculating angles around a point</li> <li>Calculating angles on a straight line</li> <li>Calculating lengths and angles in shapes – <b>squares, rectangles and triangles</b></li> <li>Regular and irregular polygons (including triangles, quadrilaterals, pentagon, hexagon, heptagon, octagon, nonagon, decagon)</li> </ul> <p>3D shapes – recap identifying 3D shapes and introduce the language of ‘hedron’ to describe faces (cuboids, cylinders, pyramids, cones, spheres, prisms. Hedrons (tetrahedron, hexahedron, octahedron, decahedron, dodecahedron)</p>	<ul style="list-style-type: none"> <li>Measure and classify angles</li> <li>Calculate angles</li> <li>Vertically opposite angles</li> <li>Angles in a triangle</li> <li>Angles in a triangle – special cases (<b>equilateral, isosceles</b>)</li> <li>Angles in a triangle – missing angles (<b>including exterior angles</b>)</li> <li>Angles in special quadrilaterals</li> <li>Angles polygons</li> <li>Circles</li> <li>Draw shapes accurately – <b>protractor and ruler</b></li> <li>Draw nets of 3-D shapes</li> </ul>	<ul style="list-style-type: none"> <li>Read and plot coordinates</li> <li>Problem solve with coordinates</li> <li>Translation</li> <li>Translation with coordinates</li> <li>Lines of symmetry</li> <li>Reflection in horizontal and vertical lines</li> </ul>	<ul style="list-style-type: none"> <li>The first quadrant</li> <li>Read and plot points in four quadrants</li> <li>Solve problems with coordinates</li> <li>Translations - <b>Missing coordinates</b></li> <li>Reflections – <b>through x and y axis. Missing coordinates</b></li> </ul>	<ul style="list-style-type: none"> <li>Draw line graphs – <b>scales</b></li> <li>Read and interpret line graphs – <b>estimate by reading between intervals</b></li> <li>Read and interpret line graphs</li> <li>Two-way tables – <b>try to link to foundation topics and Science work</b></li> <li>Read and interpret timetables</li> </ul>	<ul style="list-style-type: none"> <li>Line graphs</li> <li>Dual line graphs</li> <li>Read and interpret pie charts – <b>fractions, angles and division</b></li> <li>Pie charts with percentages - <b>100% of the chart = 360 degrees</b></li> <li>Draw pie charts – <b>link to prior learning</b></li> <li>The mean</li> </ul>	
<p><u>Recap focus</u></p> <ul style="list-style-type: none"> <li>Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.</li> <li>Formal multiplication strategies</li> </ul>		<p><u>Recap focus</u></p> <ul style="list-style-type: none"> <li>Convert mixed number to improper fractions and vice versa, and be able to reason about any mixed number on a number line</li> <li>Formal division strategies</li> </ul>		<p><u>Recap focus</u></p> <ul style="list-style-type: none"> <li>Ratio and scaling problems (involving recipes)</li> <li>Time – read to 5 minute intervals and calculate durations of time</li> </ul>		<p><u>Recap focus</u></p> <p>Consolidate ready to progress criteria for year 5 pupils.</p> <p>Use transition ‘checkpoints’ from NCETM for year 6 pupils.</p>