



# Mathematics



**School Name:** Hamstel Infant School and Nursery

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Mathematics at Hamstel Infant School and Nursery is taught using the research-based scheme of work *Maths No Problem*. This is based on Singapore methods and focuses on teaching for mastery. Problem solving is a key element throughout the scheme of work to help children with their reasoning skills. When introduced to a new key concept, children have the opportunity to build competency by following a CPA approach (Concrete, Pictorial, Abstract) and supportive lesson structure where they use practical equipment, are guided by the teacher and then practice independently.



This document includes overviews that are designed to support a mastery approach to teaching and learning and have been designed for the new National Curriculum (2014).

## Reception Mathematics Overview

<b>Autumn Term</b>	Counting by rote	Number understanding to 10						Counting an irregular arrangement of objects	2d shape	3d shape
<b>Spring Term</b>	Number formation and ordering	Pattern	Tallying	Numbers to 20 (partitioning tens and ones)	Weight	Capacity	Length and Size	Time	Addition	Positional Language
<b>Summer Term</b>	Shape (2d and 3d consolidation)	Subtraction		Money	Doubling	Halving/Sharing	Number Bonds		Numbers to 100	

## Year 1 Mathematics Overview

<b>Autumn Term</b>	Numbers to 10	Number bonds	Addition within 10	Subtraction within 10	Positions	Numbers to 20	Addition and Subtraction within 20
<b>Spring Term</b>	Shapes and patterns	Length and Height	Numbers to 40	Addition and Subtraction word problems	Multiplication	Division	Fractions
<b>Summer Term</b>	Numbers to 100	Time	Money	Volume and Capacity	Mass	Space	Consolidation

## Year 2 Mathematics Overview

	2 week	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	2 weeks	1 week	1 week
<b>Autumn Term</b>	Chapter 1 Numbers to 100	Chapter 2 Focus on Addition	Chapter 2 Focus on Subtraction	Chapter 3 Multiplication of 2, 5 and 10	Chapter 4 Multiplication and Division	Chapter 10 Money	Chapter 5 Length	Chapter 6 Mass	
	1 week	1 week	2 weeks	1 week	2 weeks	1 week	1 week	1 week	1 week
<b>Spring Term</b>	Chapter 11 Two-dimensional Shapes	Chapter 12 Three-dimensional Shapes	Chapter 13 Fractions	Addition and subtraction	Chapter 14 Time	Multiplication and Division	Money	Chapter 15 Volume  Chapter 7 Temperature	Chapter 8 Picture Graphs
<b>Summer Term</b>	Review, consolidation and SAT's preparation SAT's arithmetic and reasoning papers take place in the month of May.								

# Reception Mathematics Scheme of Work

Number focus – Orange scale

Shape, Space and Measure focus – Green scale

## Autumn Term

Key Learning (Number of weeks and book reference)	Lesson focus	EYFS Learning Objectives	Month band
<p><b>Counting by rote</b></p> <p>(1 week)</p>	<p><i>In this unit children will explore counting by rote in different context, focusing on saying the numbers in order (starting to 10, then going higher). We introduce the ideas of counting anything, not just objects.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Counting rhymes and songs</li> <li>• Counting children in the line</li> <li>• Counting resources</li> <li>• Counting periods of time</li> <li>• Counting around a circle</li> </ul>	<ul style="list-style-type: none"> <li>• Recites some number names in sequence.</li> <li>• Recites numbers in order to 10.</li> <li>• Realises not only objects, but anything can be counted, including steps, claps or jumps.</li> <li>• Counts actions or objects which cannot be moved.</li> </ul> <p><b>Children count reliably with numbers from one to 20</b></p>	<p><b>N 22-36</b></p> <p><b>N 30-50</b></p> <p><b>N 40-60</b></p> <p><b>N ELG</b></p>
<p><b>Number understanding to 10</b></p> <p>(one number per week so 10 weeks in total)</p> <p><b>Book K1A</b></p> <p>Lesson 3.11 Page 74 (NOT 75)</p> <p>Lesson 3.13 Page 78</p>	<p><i>In this unit we look at understanding the value of numbers to 10, including 0. Pupils will be able to count, compare and understand all numbers to 10 and explore them through a variety of child initiated play led activities. This unit will lay the foundations for grasping the value of numbers and what they mean.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Counting that number of claps, children, cubes etc</li> <li>• Counting on from that number as a starting point and counting back</li> <li>• Find that number of objects</li> </ul>	<ul style="list-style-type: none"> <li>• Uses some number names and number language spontaneously.</li> <li>• Uses some number names accurately in play.</li> <li>• Recites numbers in order to 10.</li> <li>• Knows that numbers identify how many objects are in a set.</li> <li>• Beginning to represent numbers using fingers, marks on paper or pictures.</li> <li>• Sometimes matches numeral and quantity correctly.</li> <li>• Shows curiosity about numbers by offering comments or asking questions.</li> <li>• Compares two groups of objects, saying when they have the same number.</li> </ul>	<p><b>N 30-50</b></p>

<p><b>Lesson 3.14 Page 83 – development activity as consolidation assessment</b></p>	<ul style="list-style-type: none"> <li>• Compare to a different number of objects (eg 3 bears compared to 20 bears – then language of more and fewer comes in)</li> <li>• Show number in egg boxes (ch can have own egg boxes and make the number themselves)</li> <li>• Make number in egg boxes using different colour cubes – the beginning of number bonds (“I have made 6 with 4 and 2”)</li> <li>• Writing number – formation worked on each week</li> <li>• Recording that number using marks (tallies or pictures)</li> <li>• Ordering up to that number</li> <li>• Finding a missing number in the counting sequence (1,2,3,?,5,6,7)</li> <li>• Comparing this number to other numbers (how many more is our number 8 than 5?)</li> <li>• Basic subtraction</li> <li>• Doubling (I have 5 and another 5 so how many do I have?)</li> <li>• Halving (share objects)</li> </ul>	<ul style="list-style-type: none"> <li>• Shows an interest in number problems.</li> <li>• Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.</li> <li>• Shows an interest in numerals in the environment.</li> <li>• Shows an interest in representing numbers.</li> <li>• Realises not only objects, but anything can be counted, including steps, claps or jumps.</li> </ul> <ul style="list-style-type: none"> <li>• Recognise some numerals of personal significance.</li> <li>• Recognises numerals 1 to 5.</li> <li>• Counts up to three or four objects by saying one number name for each item.</li> <li>• Counts actions or objects which cannot be moved.</li> <li>• Counts objects to 10, and beginning to count beyond 10.</li> <li>• Counts out up to six objects from a larger group.</li> <li>• Selects the correct numeral to represent 1 to 5, then 1 to 10 objects.</li> <li>• Counts an irregular arrangement of up to ten objects.</li> <li>• Estimates how many objects they can see and checks by counting them.</li> <li>• Uses the language of ‘more’ and ‘fewer’ to compare two sets of objects.</li> <li>• Finds the total number of items in two groups by counting all of them.</li> <li>• Says the number that is one more than a given number.</li> <li>• Finds one more or one less from a group of up to five objects, then ten objects.</li> <li>• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.</li> <li>• Records, using marks that they can interpret and explain.</li> <li>• Begins to identify own mathematical problems based on own interests and fascinations.</li> </ul>	<p><b>N 40-60</b></p>
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	<p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can verbally identify a repeating pattern</li> <li>• I can continue a repeating pattern in sequence</li> <li>• I can create my own repeating pattern</li> </ul>		
<p><b>Tallying</b> (1 week)</p>	<p><i>In this unit we begin to represent numbers through tallying. This is first step to pictorial representations of number problems. Children will learn the idea of making one mark to represent one amount when counting.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Creating tally charts which they need to gather opinions for in order to fill out</li> <li>• Counting their tally mark and writing the numeral</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can make one mark to represent a single amount</li> <li>• I can count the marks to find the total</li> </ul>	<ul style="list-style-type: none"> <li>• Knows that numbers identify how many objects are in a set.</li> <li>• Records, using marks that they can interpret and explain.</li> <li>• Begins to identify own mathematical problems based on own interests and fascinations.</li> </ul>	<p><b>N 30-50</b></p> <p><b>N 40-60</b></p>
<p><b>Numbers to 20 (partitioning tens and ones)</b> (2 weeks)</p> <p><b>Book K2A</b></p> <p>Lesson 2.1 Page 19 Lesson 2.2. Page 21-22 Lesson 2.3 Page 23-24 Lesson 2.4 Page 25-26</p>	<p><i>In this unit we look at numbers above ten by exploring the concept of partitioning 10. The children learn that a teen number is made up of one ten and an amount of ones.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Estimating amounts to see whether they are more or less than 10</li> <li>• Counting 10 and separating off</li> <li>• Counting the remainder</li> <li>• Verbalising 'one ten and ... ones'</li> </ul>	<ul style="list-style-type: none"> <li>• Counts objects to 10, and beginning to count beyond 10.</li> <li>• Estimates how many objects they can see and checks by counting them.</li> </ul> <p><b>Children count reliably with numbers from one to 20</b></p>	<p><b>N 40-60</b></p> <p><b>N ELG</b></p>

	<p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can estimate if there are more than 10 objects.</li> <li>• I can count 10 objects and group them.</li> <li>• I can say how many tens there are.</li> <li>• I can say how many ones there are.</li> <li>• I can write the numbers.</li> </ul>		
<p><b>Weight</b> (1 week) <b>Book K1B</b> Lesson 8.2 Page 68-70</p>	<p><i>In this unit we explore the weight of items and make comparisons. The children will use balance scales in different contexts.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Holding an item in each hand and physically feeling the difference in weight</li> <li>• Using a balance scales to compare weights</li> <li>• Comparing the weight of two objects using a verbal comparison sentence e.g. the pen is lighter than the book</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can feel the weight difference in 2 objects.</li> <li>• I can use the vocabulary heavier/lighter than.</li> <li>• I can say which object is heavier/lighter than another.</li> </ul>	<ul style="list-style-type: none"> <li>• Orders two items by weight or capacity.</li> </ul> <p><b>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.</b></p>	<p><b>SSM 40-60</b> <b>SSM ELG</b></p>
<p><b>Capacity</b> (1 week) <b>Book K1B</b> Lesson 9.1 Page 76</p>	<p><i>In this unit we explore the capacity of different containers and make comparisons. The children will use the language of empty, half-full and full to describe amounts.</i></p>	<ul style="list-style-type: none"> <li>• Orders two items by weight or capacity.</li> </ul> <p><b>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.</b></p>	<p><b>SSM 40-60</b> <b>SSM ELG</b></p>

<p>Lesson 9.2 Page 78</p>	<p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Filling different sized container</li> <li>• Identifying how full a container is</li> <li>• Comparing the capacity of two containers using a verbal comparison sentence e.g. the bucket holds more than the cup</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can say whether a container is empty, half-full or full</li> <li>• I can compare the capacity of containers saying which one holds more or less</li> </ul>		
<p><b>Length and Size</b> (1 week) <b>Book K1B</b> Lesson 7.1 Page 38 Lesson 7.2 Page 41 Lesson 7.5 Page 46 Lesson 7.7 Page 50 Lesson 7.11 Page 59 (plus language of 'medium')</p>	<p><i>In this unit we explore length and make comparisons. The children will use different measuring tools</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Measuring with tape measures, rulers, metre rules, cubes, rolling ground measures and more</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can identify which length is shorter or longer.</li> <li>• I can use the vocabulary shorter than/longer than.</li> <li>• I can say which length is longer/shorter than the other.</li> </ul>	<ul style="list-style-type: none"> <li>• Orders two or three items by length or height.</li> </ul> <p><b>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.</b></p>	<p><b>SSM 40-60</b> <b>SSM ELG</b></p>
<p><b>Time sequencing</b> (1 week) <b>Book K2B</b> Lesson 8.1 Page 28-30</p>	<p><i>In this unit we look at the order of familiar events throughout the day and the children will begin to explore the passing of time at set intervals.</i></p>	<ul style="list-style-type: none"> <li>• Uses everyday language related to time.</li> <li>• Orders and sequences familiar events.</li> <li>• Measures short periods of time in simple ways.</li> </ul> <p><b>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare</b></p>	<p><b>SSM 40-60</b> <b>SSM ELG</b></p>

<p>Lesson 8.3 Page 33</p>	<p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Discussing the sequence of their day with a friend</li> <li>• Using sequencing language for story telling of a familiar story (first, then, next, later) or ordering events (first, second, third)</li> <li>• Measuring periods of time with sand timers/stop watches and stopping at set intervals to recognise the passing of time e.g. every hour</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can say what happens at each part of my day.</li> <li>• I can use sequencing language (first, then, next or first, second, third)</li> </ul>	<p><b>quantities and objects and to solve problems.</b></p>	
<p><b>Addition</b> (2 weeks)</p> <p><b>Book K2A</b></p> <p>Lesson 4.1 Page 49 Page 50 (write as number sentence NOT number bond diagram) Lesson 4.2 Page 51 Lesson 4.3 Page 53-54 (teach counting on concept) Lesson 4.5 Page 57-58 Lesson 4.5 Page 59-60</p>	<p><i>In this unit we explore addition through counting two groups of objects and combining them to find a total. We extend to mentally counting on to add two single digit numbers.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Hearing and using vocabulary including adding, plus, total, altogether, how many, amount, equals</li> <li>• Adding groups of objects in various contexts</li> <li>• Using the concept of counting on by 'holding' the biggest number in their heads and counting on the next amount by touching their fingers to their chin</li> <li>• Recognising and using written addition symbols '+' and '=' to write out mathematical problems</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can count how many objects are in each group</li> <li>• I can combine them and count the total</li> <li>• I can say the addition sentence</li> </ul>	<ul style="list-style-type: none"> <li>• Finds the total number of items in two groups by counting all of them.</li> <li>• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.</li> <li>• Records, using marks that they can interpret and explain.</li> <li>• Begins to identify own mathematical problems based on own interests and fascinations.</li> </ul> <p><b>Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.</b></p>	<p><b>N 40-60</b></p> <p><b>N ELG</b></p>

	<ul style="list-style-type: none"> <li>• I can add two single digit numbers by counting on</li> </ul>		
<p><b>Positional Language</b> (1 week)</p>	<p><i>In this unit we look at positional language and encourage the children to describe their positions.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Video of monkey</li> <li>• Placing toys around the classroom and children describe where they are in relation to something else</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can put myself in the right position when told.</li> <li>• I can say where an object is positioned.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses positional language.</li> <li>• Can describe their relative position such as 'behind' or 'next to'.</li> </ul>	<p><b>SSM 30-50</b></p> <p><b>SSM 40-60</b></p>

## Summer Term

Key Learning (Number of weeks and book reference)	Lesson focus	EYFS Learning Objectives	Month band
<p><b>Shape (2d and 3d consolidation)</b></p> <p>(1 week)</p>	<p><i>In this unit we consolidate learning about shape by finding and exploring real life shapes in the environment.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Shape hunts</li> <li>• Explaining why certain shapes are used for certain things e.g. prisms for roofs as they are structurally strong</li> <li>• Making 3d shape models</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can identify a shape in the environment</li> <li>• I can describe some of its properties</li> </ul>	<p>Shows awareness of similarities of shapes in the environment. Shows interest in shapes in the environment.</p> <p><b>They explore characteristics of everyday objects and shapes and use mathematical language to describe them.</b></p>	<p><b>SSM 30-50</b></p> <p><b>SSM ELG</b></p>
<p><b>Subtraction</b></p> <p>(2 weeks)</p> <p><b>Book K2A</b></p> <p>Lesson 5.1 Page 65-67 Lesson 5.2 Page 68-70 Lesson 5.5. Page 75-76 Lesson 5.6 Page 77 Page 83 as consolidation assessment</p>	<p><i>In this unit we explore subtraction through taking objects away from a group. We extend to counting back on a number to subtract one single digit number from another.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Hearing and using vocabulary including minus, take-away, remove, less, what's left</li> <li>• Taking objects away from a group in various contexts</li> <li>• Using the concept of counting back by using a number line to take one number away from another</li> <li>• Recognising and using written subtraction symbols '-' and '=' to write out mathematical problems</li> </ul>	<ul style="list-style-type: none"> <li>• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.</li> <li>• Records, using marks that they can interpret and explain.</li> <li>• Begins to identify own mathematical problems based on own interests and fascinations.</li> </ul> <p><b>Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.</b></p>	<p><b>N 40-60</b></p> <p><b>N ELG</b></p>

	<p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can count and say how many objects are in a group</li> <li>• I can take away a given amount</li> <li>• I can count how many are left</li> <li>• I can say the subtraction sentence</li> <li>• I can take away one single digit number from another by counting back on a number line</li> </ul>		
<p><b>Money</b> (1 week)</p>	<p><i>In this unit we explore money and the language of money.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Playing with real coins; role-play ‘paying’ for items</li> <li>• Exploring real coins and their features; queen’s head, colour, size, shape</li> <li>• Coin rubbings</li> <li>• ‘Paying’ for their snack each day with pennies e.g. 3 pennies or extending to identifying and using correct coins e.g. 20p</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>• I can use everyday language relating to money; cash, coin, note, pay, pence, penny, pound, how much, change</li> </ul>	<ul style="list-style-type: none"> <li>• Beginning to use everyday language related to money.</li> </ul> <p><b>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.</b></p>	<p><b>SSM 40-60</b></p> <p><b>SSM ELG</b></p>
<p><b>Doubling</b> (1 week)</p>	<p><i>In this unit we explore doubling numbers up to double 5.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>• Doubling songs</li> <li>• Using hands to show amount in fingers on one and then match it on the other</li> </ul> <p><b>Assessment Points:</b></p>	<p><b>They solve problems, including doubling, halving and sharing.</b></p>	<p><b>N ELG</b></p>

	<ul style="list-style-type: none"> <li>I can say a double up to double 5</li> </ul>		
<b>Halving/Sharing</b> (1 week)	<p><i>In this unit we explore halving whole numbers and halving pictorial representations and the concept of sharing amounts into groups.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>Using hands to show amount in fingers on two hands then splitting in half to show amount on each hand</li> <li>Physically halving pictorial representations e.g. cutting a cake in half</li> <li>Sharing amounts amongst their friends, one object at a time, and discussing fairness if one has more than another</li> <li>Finding equal groups</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>I can find half of a picture/shape by cutting it or folding it</li> <li>I can find half of a number by sharing it fairly into 2 groups</li> <li>I can share objects equally into a given number of groups</li> </ul>	<b>They solve problems, including doubling, halving and sharing.</b>	<b>N ELG</b>
<b>Number bonds</b> (3 weeks) <b>Book K1B</b> Lesson 3.1 Page 33-34 Lesson 3.2 Page 35-36 Lesson 3.3 Page 37-38 Lesson 3.4 Page 39-40	<p><i>In this unit we extend number awareness to number bonds. The children learn the Singapore part-whole diagram and use it to combine two numbers to find a total or split a total to find two separate parts.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>Representing picture representations with cubes then numerals</li> </ul>	<ul style="list-style-type: none"> <li>Separates a group of 3-4 objects in different ways beginning to recognise that the total is still the same. (larger numbers)</li> <li>Finds the total number of items in two groups by counting all of them</li> </ul>	<b>N 30-50</b>  <b>N 40-60</b>

<p>Lesson 3.5 Page 41 Lesson 3.6 Page 43-44 Lesson 3.7 Page 45-46 Page 48 as consolidation assessment</p>	<ul style="list-style-type: none"> <li>Using part-whole diagrams with objects in each part to physically combine or split</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>I combine two parts to find a whole</li> <li>I can split a whole to find two parts</li> <li>I can identify a missing part when given one part and a whole</li> </ul>		
<p><b>Numbers to 100</b> (Counting in 2's, 5's and 10's)</p> <p>(3 Weeks)</p> <p><b>Book K2B</b></p> <p>Lesson 9.2 Page 63 Lesson 9.3 Page 65 Lesson 9.4 Page 67-68</p>	<p><i>In this extension unit we look at numbers up to 100 by exploring counting in 2's, 5's, 10's and beginning to learn times tables.</i></p> <p><b>Child will explore through:</b></p> <ul style="list-style-type: none"> <li>Counting in 2's, 5's and 10's through songs, rhymes and by rote (chanting)</li> </ul> <p><b>Assessment Points:</b></p> <ul style="list-style-type: none"> <li>I can count in 2's to 20</li> <li>I can count in 5's to 50</li> <li>I can count in 10's to 100</li> </ul>	<p><b>They solve practical problems that involve combining groups of 2, 5 or 10 or sharing into equal groups</b></p>	<p><b>N ELG+</b></p>

# Year 1 Mathematics Scheme of Work

## Autumn Term

Key Learning	Lesson focus	National Curriculum Links
<b>Numbers to 10</b>  <b>8 lessons</b>	<p><i>In this unit we look at understanding the value of numbers to 10, including 0. Pupils will be able to order, compare and understand all numbers to 10 and work with them fluently and accurately. This unit will lay the foundations for later work on number bonds and will begin to support pupils with a systematic recording of their work to solve problems.</i></p> <ul style="list-style-type: none"> <li>• Counting to 10</li> <li>• Counting objects to 10</li> <li>• Writing to 10</li> <li>• Counting with zero</li> <li>• Comparing objects</li> <li>• Ordering Numbers</li> <li>• Comparing Numbers</li> </ul>	<p>Read and write numbers from 1 to 20 in numerals and words. Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Given a number, identify one more and one less.</p>
<b>Number bonds</b>  <b>3 lessons</b>	<p><i>In this unit we look at how two numbers can be added to make a bigger number. Pupils will explore different ways to make numbers up to 10 and create stories from what they have learnt.</i></p> <ul style="list-style-type: none"> <li>• Making Number Bonds</li> </ul>	<p>Represent and use number bonds.</p>
<b>Addition within 10</b>  <b>6 lessons</b>	<p><i>In this unit pupils will come across different ways of adding to 10. They will utilise the part-whole diagram and begin to lay the foundations of the inverse of addition. They will also begin to make their own addition equation in order to support the deeper understanding of the processes of addition.</i></p>	<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Add one-digit and two-digit numbers to 20, including zero. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial</p>

	<ul style="list-style-type: none"> <li>• Ways to Add</li> <li>• Add by counting on</li> <li>• Completing number sentences</li> <li>• Making Addition Stories</li> <li>• Solving number problems</li> </ul>	representations, and missing number problems such as $7 = \_\_\_ - 9$ .
<b>Subtraction within 10</b> <b>7 lessons</b>	<p><i>In this unit pupils will learn that subtraction equations can be done in three ways: by crossing out, by using number bonds and by counting back. They will continue to use manipulatives and pictorial representations to support their understanding and use vocabulary appropriately.</i></p> <ul style="list-style-type: none"> <li>• Ways to Subtract</li> <li>• Subtracting using Number Bonds</li> <li>• Subtracting by Counting Back</li> <li>• Making Subtraction Stories</li> <li>• Solving Picture Problems</li> <li>• Addition and Subtraction</li> </ul>	<p>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.</p> <p>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>.</p>
<b>Positions</b> <b>4 lessons</b>	<p><i>In this unit pupils will the gain the understanding of positional language, as well as directional language for left and right.</i></p> <ul style="list-style-type: none"> <li>• Naming Positions</li> <li>• Naming Positions in Queues</li> <li>• Naming Left and Right</li> <li>•</li> </ul>	Describe position, direction and movement.
<b>Numbers to 20</b> <b>6 lessons</b>	<p><i>In this unit we look at numbers up to 20 and in particular focussing on numbers between 10-20. Pupils will be able count and write to 20, compare and order numbers and see patterns within 20.</i></p> <ul style="list-style-type: none"> <li>• Counting to 20</li> <li>• Writing to 20</li> <li>• Comparing Numbers</li> <li>• Ordering Numbers</li> <li>• Number Patterns</li> </ul>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Read and write numbers from 1 to 20 in numerals and words. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.</p> <p>Given a number, identify one more and one less.</p>
<b>Addition and Subtraction within 20</b>	<p><i>In this chapter pupils will learn different ways to add and subtract numbers within 20.</i></p> <ul style="list-style-type: none"> <li>• Ways to Add</li> </ul>	Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs. Identify

<b>8 lessons</b>	<ul style="list-style-type: none"> <li>• Add by Making 10</li> <li>• Add by Adding Ones</li> <li>• Subtract by Counting Back</li> <li>• Subtract by Subtracting Ones</li> <li>• Subtract from 10</li> <li>• Addition and Subtraction Facts</li> </ul>	<p>and represent numbers using objects and pictorial representations including the number line.</p> <p>Represent and use number bonds and related subtraction facts within 20. Add and subtract one-digit and two-digit numbers to 20, including zero.</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \_\_ - 9</math>.</p>
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## Spring Term

Key Learning	Lesson focus	National Curriculum Links
<b>Shapes and Patterns</b>  <b>5 lessons</b>	<p><i>This unit looks at different types of 2D shapes and some basic 3D shapes. You will cover the properties of basic 2D shapes and some solid shapes. Pupils will learn to group shapes according to different criteria. This will also lead to recognising, describing and continuing a pattern, as well as generalising patterns.</i></p> <ul style="list-style-type: none"> <li>• Recognising Solids</li> <li>• Recognising Shapes</li> <li>• Grouping Shapes</li> <li>• Making Patterns</li> </ul>	<p>Recognise and name common 3-D shapes [for example, rectangles, cuboids (including cubes), pyramids and spheres].</p> <p>Recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles].</p>
<b>Length and Height</b>  <b>5 lessons</b>	<p><i>This unit covers the basics of length. Pupils will compare different lengths and describe whether something is taller, longer, shorter or higher. Pupils will learn about how to measure two items fairly for comparison using items and body parts before moving onto measuring using a ruler.</i></p> <ul style="list-style-type: none"> <li>• Comparing Height and Length</li> <li>• Measuring Length Using Things</li> <li>• Measuring Length Using Body Parts</li> <li>• Measuring Length Using a Ruler</li> </ul>	<p>Compare, describe and solve practical problems for lengths and heights (for example long/short, longer/shorter, tall/short, double/half)</p> <p>Measure and begin to record lengths and heights.</p>
<b>Numbers to 40</b>  <b>7 lessons</b>	<p><i>In this unit we look at In this chapter, pupils will be exploring numbers to 40 in a variety of ways. The beginning of the chapter focuses on counting to 40 in different ways and writing numbers to 40. As the sequence progresses, pupils are comparing numbers and looking at number patterns. This unit will consolidate pupils' previous work with numbers to 20 and prepare them for Chapter 15, Numbers to 100.</i></p>	<p>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Read and write numbers from 1 to 20 in numerals and words.</p>

	<ul style="list-style-type: none"> <li>• Counting to 40</li> <li>• Writing numbers to 40</li> <li>• Counting in Tens and Ones</li> <li>• Comparing Numbers</li> <li>• Finding How Much More</li> <li>• Making number patterns</li> <li>•</li> </ul>	<p>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. Identify and represent numbers using objects and pictorial representations including the number line.</p>
<p><b>Addition and Subtraction Word problems</b></p> <p><b>7 lessons</b></p>	<p><i>This unit is placing a contextual focus on previously-taught concepts in counting, addition and subtraction. It is laying the visual and proportional representation foundations required for using bar modelling as the primary strategy for solving word problems. In this chapter, pupils will be reinforcing and contextually using number bonds and simple bars to represent word problems. In addition to this, they will be putting into practice concepts previously taught in number comparison, specifically looking at how many more or how many fewer/less.</i></p> <ul style="list-style-type: none"> <li>• Solving Word Problems</li> </ul>	<p>Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Add and subtract one-digit and two-digit numbers to 20, including zero. Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Given a number, identify one more and one less. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems. Add and subtract one-digit and two-digit numbers to 20, including zero.</p>
<p><b>Multiplication</b></p> <p><b>6 lessons</b></p>	<p><i>This is the first unit on multiplication. Throughout this unit, pupils will learn the foundations of equal groupings, repeated addition, arrays and doubling. By the end of the chapter, the pupils will be able to apply that knowledge to solve word problems. Previous lessons using ten frames and visual linear organisation will prove useful in this unit.</i></p> <ul style="list-style-type: none"> <li>• Adding Equal Groups</li> <li>• Making Equal Rows</li> <li>• Making Doubles</li> <li>• Solving Word Problems</li> </ul>	<p>Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p>
<p><b>Division</b></p> <p><b>3 lessons</b></p>	<p><i>This is the first unit on division. It is a short unit with two main foci. Pupils will be learning about taking a limited number of items and placing a predetermined number into groups to determine how many groups there will be. After this, pupils will be given a number of items, but will need to figure out how many will go into each group by sharing equally.</i></p> <ul style="list-style-type: none"> <li>• Grouping equally</li> </ul>	<p>Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p>

	<ul style="list-style-type: none"> <li>Sharing equally</li> </ul>	
<b>Fractions</b>  <b>4 lessons</b>	<p><i>In this unit on fractions, pupils will be learning about making halves and quarters before moving on to making the connection between fractions and division in the last lesson. The pupils use their knowledge of sharing equally to create equal pieces of paper during the In Focus tasks.</i></p> <ul style="list-style-type: none"> <li>Making Halves</li> <li>Making Quarters</li> <li>Sharing and Grouping</li> </ul>	Find and name a quarter as one of four equal parts of an object, shape or quantity.
<b>Summer Term</b>		
<b>Numbers to 100</b>  <b>5 lessons</b>	<p><i>This is the final unit on counting in Year 1. It will reinforce some previously-taught concepts in addition to increasing the complexity of number comparisons and number patterns. Pupils will begin by counting in 10s and 1s, followed by using number bonds to partition numbers. After this, pupils will be expected to compare numbers to 100 and find number patterns looking at one hundred charts.</i></p> <ul style="list-style-type: none"> <li>Counting to 100</li> <li>Finding Tens and Ones</li> <li>Comparing Numbers</li> <li>Making Number Patterns</li> </ul>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. 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;</p> <p>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;</p> <p>Given a number, identify one more and one less. Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p>
<b>Time</b>  <b>7 lessons</b>	<p><i>This unit explores introductory concepts of time. The unit is broken down into 5 main concepts: namely, telling time to the hour and half hour, using terms such as 'next,' 'before' and 'after,' estimating durations of time and, finally, comparing time. At the beginning of the unit, pupils will be exploring analogue clocks and telling time to the hour and half hour. After this, pupils will look at a timeline for an average day and then determine the order of events using specialised terminology. To end the unit, pupils will estimate lengths of time and then compare measures of time.</i></p> <ul style="list-style-type: none"> <li>Telling the time to the hour</li> <li>Telling the time to the half hour</li> <li>Using Next, Before and After</li> </ul>	<p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].</p> <p>Compare, describe and solve practical problems for: time [for example, quicker, slower, earlier, later].</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years.</p>

	<ul style="list-style-type: none"> <li>• Estimating Duration of Time</li> <li>• Comparing Time</li> <li>• Using a Calendar</li> </ul>	
<b>Money</b> <b>3 lessons</b>	<p><i>This unit introductory concepts of money. Children will learn to recognise and use language relating to dates, including days of the week, weeks, months and years as well as recognise notes and determine their value using colour and markings.</i></p> <ul style="list-style-type: none"> <li>• Recognising Coins</li> <li>• Recognising Notes</li> </ul>	Recognise and know the value of different denominations of coins and notes.
<b>Volume and Capacity</b> <b>4 lessons</b>	<p><i>The unit on volume and capacity builds new knowledge in addition to combining knowledge from the unit on fractions. The first lesson is about comparing volume and capacity, using terms such as 'more than' and 'less than'. The second lesson looks at finding volume and capacity using non-standard units. And, finally, the third lesson explores describing volume using the terms 'half' and 'quarter.'</i></p> <ul style="list-style-type: none"> <li>• Comparing volume and Capacity</li> <li>• Finding Volume and Capacity</li> <li>• Describing Volume using Half and a Quarter</li> </ul>	Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than]. Measure and begin to record the following: mass/weight.
<b>Mass</b> <b>3 lessons</b>	<p><i>This is a short unit looking at mass. The unit begins by comparing mass using terms such as 'heavy/heavier,' 'light/lighter.' It is followed by finding mass using non-standard units. This idea of non-standard units follows on from the previous chapter on volume and capacity.</i></p> <ul style="list-style-type: none"> <li>• Comparing Mass</li> <li>• Finding Mass</li> </ul>	Measure and begin to record the following: mass/weight. Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than].
<b>Space</b> <b>4 lessons</b>	<p><i>This is a short unit on space, which explores the important elements of position, movement and turns. The chapter begins by looking in-depth at ways in which we can describe the position of one object relative to another, using terms such as: 'top,' 'middle' and 'bottom;' 'around,' 'close,' 'near' and 'far;' and 'on top of,' 'in front of' and 'above.' When looking at movement, the concepts explored are 'up and down,' 'forwards and backwards,' and 'inside and outside.' Finally, the unit ends with turns: navigating whole turns, half turns, quarter turns and the notion of clockwise and anticlockwise.</i></p> <ul style="list-style-type: none"> <li>• Describing Positions</li> </ul>	Describe position, direction and movement, including whole, half, quarter and three- quarter turns.



- Describing Movements
- Making Turns



# Year 2 Mathematics Scheme of Work

## Autumn Term

Key Learning	Lesson focus	National Curriculum Links
<p>Numbers to 100 (2 weeks)</p>	<p>This chapter concentrates on various aspects of numbers to 100. Pupils will be able to count to 100 through different steps including counting up in 10s. Place value will have a major role throughout the chapter. Pupils will also look at comparing numbers using their place value knowledge and they will go through number bonds. The final two chapters will allow pupils to explore numbers to see patterns within 100.</p> <ul style="list-style-type: none"> <li>• To count numbers up to 100 using concrete objects: counting up by 1s and 10s.</li> <li>• To understand each digit in a number has its own value.</li> <li>• To be able to compare numbers using place value knowledge gained from previous lessons.</li> <li>• To be able to split a number into two separate numbers which combine to make the original number: partitioning a number into tens and units.</li> <li>• To recognise and describe number patterns that go up and down by 1s, 2s or 10s.</li> <li>• To recognise and describe patterns with more complex numbers: in particular 3 and 5.</li> </ul>	<p>Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward. Read and write numbers to at least 100 in numerals and in words Recognise the place value of each digit in a two-digit number (tens, ones). Compare and order numbers from 0 up to 100; use [less than], [greater than] and = signs. Use place value and number facts to solve problems. Identify, represent and estimate numbers using different representations, including the number line.</p>
<p>Addition and Subtraction  (4 weeks in Autumn, 2 weeks in Spring, Review and further application in Summer term)</p>	<p>This chapter looks at addition and subtraction using number bonds diagrams as well as the standard column method. Pupils will be taken through each lesson with slight variations in the learning objects so that they can reach a level of mastery.</p> <ul style="list-style-type: none"> <li>• To be able to add a single-digit number to a 2-digit number without regrouping the ones.</li> <li>• Simple addition of 10s and ones. The key concept in this lesson is to make sure pupils understand that they can work out the sum of larger numbers in the ten times table by looking at the digit in the tens column and finding out the total number of 10s in the calculation. This is an</li> </ul>	<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones a two-digit number and tens. Solve problems with addition using concrete objects and pictorial representations, including those involving numbers, quantities and measures. Solve problems with addition applying increasing knowledge of mental and written methods. Recall and use addition facts to 20 fluently, and derive and use related facts up to 100.</p>

	<p>important step before moving on to numbers with values greater than 0 for both tens and ones.</p> <ul style="list-style-type: none"> <li>• To add with tens and units where the units are both more than 0.</li> <li>• To add single-digit numbers to a double-digit number resulting in renaming of units.</li> <li>• To add two 2-digit numbers with the sum of units more than or equal to 10. This lesson is the natural next step from the previous lesson.</li> <li>• subtracting units from a 2-digit number without affecting the 10s column.</li> <li>• subtracting tens from a 2-digit number with the ones being more than 0.</li> <li>• To subtract a 2-digit number by another 2-digit number.</li> <li>• To subtract a 2-digit number by a 1-digit number.</li> <li>• To subtract a 2-digit number from another 2-digit number where renaming has to occur.</li> <li>• To add three single-digit numbers.</li> </ul>	<p>Recall and use addition facts to 20 fluently, and derive and use related facts up to 100. Add numbers using concrete objects, pictorial representations, and mentally, including: two two-digit numbers.</p> <p>Subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones.</p>
<p><b>Multiplication and division</b></p> <p><b>(5 weeks initially)</b></p>	<p>This chapter investigates the multiplication of 2, 5 and 10. Pupils will also get to understand what multiplication means and looks like. Patterns in multiplication and commutative law are also covered in this chapter.</p> <ul style="list-style-type: none"> <li>• To realise multiplication is the same as repeated addition with equal groups.</li> <li>• To focus on understanding and learning the 2 times table.</li> <li>• number patterns formed in the 2,5 and 10 times tables.</li> <li>• To understand commutative law.</li> <li>• To use the 2, 5 and 10 times tables to solve word problems.</li> <li>• Divide by grouping and sharing</li> <li>• To be able to divide by 2. The two strategies used here are splitting into groups of x and splitting into equal groups of many.</li> <li>• To be able to divide by 5 and identify links with multiplying by 5.</li> </ul>	<p>Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (<math>\times</math>) and equals (<math>=</math>) signs. Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts.</p> <p>Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p> <p>Show that multiplication of two numbers can be done in any order (commutative).</p> <p>Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts.</p>

	<ul style="list-style-type: none"> <li>• To be able to divide by 10 and identify links with multiplying by 10.</li> <li>• Use multiplication and division skills to identify family facts in a number sentence.</li> <li>• solve word problems which require the use of the multiplication and division</li> <li>• To be able to link whether odd or even numbers can be divisible by 2, 5 or 10.</li> </ul>	
<p><b>Money (3 weeks)</b></p>	<p>Pupils will be reviewing concepts on writing and counting money in addition to extending their knowledge of how to represent money using £ and p. They will be reinforcing previous counting methods using 5s and 10s to count quickly and efficiently. They will be required to show equal amounts of money and how to exchange money. By the end of the unit, they will be using bar modelling to calculate the total amount of money spent and then working out how much change is required from amounts below £100.</p> <ul style="list-style-type: none"> <li>• To identify standard UK coins and notes and write their names</li> <li>• To count notes in sequences of 5 and 10; to recognise the value of notes by appearance.</li> <li>• To count coins in sequences of their value; to recognise the value of coins by appearance.</li> <li>• To represent amounts of money using coins and notes; to count coins and notes using their denominations.</li> <li>• To create equal amounts of money using different coins.</li> <li>• To exchange denominations of money for different coins.</li> <li>• To compare different amounts of money using coins.</li> <li>• To add money together to determine the total amount.</li> <li>• To calculate change from £100 or less; to use the bar model approach to represent amounts of money.</li> </ul>	<p>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.</p> <p>Find different combinations of coins that equal the same amounts of money. Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. Find different combinations of coins that equal the same amounts of money.</p>

	<ul style="list-style-type: none"> <li>To solve more complex word problems using bar modelling as a primary method.</li> </ul>	
<p><b>Length and Mass</b> <b>(2 weeks)</b></p>	<p>In this chapter pupils will get a better understanding of how to measure length. They will begin by understanding what a metre is and what centimetres are and then progress to using them in real-life contexts.</p> <ul style="list-style-type: none"> <li>To be able to understand that we measure length using a standard unit of measure called a metre.</li> <li>To be able to understand that a centimetre is a smaller unit of measure than a metre and that you can measure length, height and width using the same unit of measure.</li> <li>To be able to compare length for objects using greater than and less than symbols.</li> <li>To be able to compare and measure various line lengths: both straight and curvy.</li> <li>To be able to solve problems involving measurement in the context of word problems.</li> </ul> <p>In this chapter pupils will be learning about mass in the context of kilograms and grams. They will learn how to read scales, to compare the weight of different objects and to solve word problems in the context of mass.</p> <ul style="list-style-type: none"> <li>To understand that mass is measured in kilograms and by using scales.</li> <li>To be able to measure mass in grams and to understand that it is a smaller unit of measure than a kilogram.</li> <li>To be able to measure mass accurately in grams using scales.</li> <li>To be able to compare the mass of two different objects accurately.</li> <li>To be able to compare the mass of three objects and use the appropriate vocabulary.</li> <li>To solve word problems in the context of mass.</li> </ul>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit, using rulers. Compare and order lengths. Compare and order lengths and record the results using &gt;, &lt; and =.</p> <p>Use appropriate standard units to estimate and measure length/height in any direction.</p> <p>Choose and use appropriate standard units to estimate and measure mass (kg) using scales</p> <p>Choose and use appropriate standard units to estimate and measure mass (g) using scales.</p> <p>Compare and order mass and record the results using &gt;, &lt; and =.</p>

## Spring Term

Key Learning	Lesson focus	National Curriculum Links
<p><b>2D and 2D shapes</b></p> <p><b>(2 weeks)</b></p>	<p>This chapter focuses on 2-D shapes and their different properties. This unit also explores how to draw shapes, make patterns with shapes and turn shapes using familiar language. The unit begins by carefully moving pupils from identifying sides to identifying vertices before moving on to lines of symmetry. Pupils are then making figures using blocks and sorting the basic shapes before they move on to drawing shapes using square grids and dot grids. Finally pupils will be making and describing patterns in addition to moving and turning shapes.</p> <ul style="list-style-type: none"> <li>To identify the number of sides on basic 2-D shapes.</li> <li>To identify and count the vertices in regular polygons.</li> <li>To identify lines of symmetry in basic 2-D shapes.</li> <li>To construct shapes using pattern blocks that have lines of symmetry.</li> <li>To sort shapes based on number of sides, vertices and other factors.</li> <li>To draw shapes using square grids and dotted grids; to copy shapes from sight into their books using grid paper.</li> <li>To recognise patterns of familiar shapes and colours of up to 3 objects.</li> <li>To move shapes on a square grid from one position to another using common language.</li> <li>To turn objects using quarter, half and three-quarter turns both clockwise and anticlockwise on a square grid.</li> </ul> <p>This chapter follows on from the chapter on 2-D shapes. In a similar manner, pupils will be recognising, describing and grouping 3-D shapes, forming structures with them and making patterns using 3-D shapes.</p> <ul style="list-style-type: none"> <li>To recognise 3-D shapes by identifying their properties.</li> <li>To describe 3-D shapes and classify them using faces, vertices and edges.</li> </ul>	<p>Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Compare and sort common 2-D and 3-D shapes and everyday objects. Order and arrange combinations of mathematical objects in patterns and sequences. Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti- clockwise).</p> <p>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]. Order and arrange combinations of mathematical objects in patterns and sequences. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. Order and arrange combinations of mathematical objects in patterns and sequences.</p>

	<ul style="list-style-type: none"> <li>• To describe 3-D shapes based on the number of faces and 2-D make ups; to construct nets of shapes into 3-D shapes.</li> <li>• To group 3-D shapes by similar properties.</li> <li>• To form 3-D structures using multiple 3-D objects.</li> <li>• To make and recognise patterns using 3-D shapes.</li> </ul>	
<p><b>Fractions</b> <b>(3 weeks)</b></p>	<p>This is a large unit on fractions. It provides a review of previously-learnt concepts and extends pupils to find fractions of whole numbers/quantities by the end of the unit. The unit begins by having pupils make equal parts: focusing on making halves, quarters and thirds. Then pupils learn to name fractions of the same denominations. After this, pupils learn about equal fractions, primarily looking at halves and quarters. They then move on to comparing and ordering fractions and counting wholes and parts. Pupils learn to count in quarters and thirds, finishing the unit by finding parts of a set and part of a quantity.</p> <ul style="list-style-type: none"> <li>• To make equal parts from a whole using simple and complex methods.</li> <li>• To show and recognise halves and quarters.</li> <li>• To show and identify more than one quarter using materials and pictures.</li> <li>• To show and identify thirds in shapes; to use the vocabulary 'numerator' and 'denominator' when referring to fractions.</li> <li>• To identify and name fractions by looking at the number of pieces and how many are shaded in.</li> <li>• To recognise equivalent fractions in quarters, thirds and halves.</li> <li>• To compare and order similar fractions by looking at the size of the pieces shaded.</li> <li>• To compare and order fractions with different denominators.</li> <li>• To count the number of wholes and parts to form mixed numbers.</li> <li>• To count in halves and place halves onto a number line using pictures.</li> </ul>	<p>Recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and show, using diagrams, equivalent fractions with small denominators.</p>

	<ul style="list-style-type: none"> <li>• To count in quarters and place quarters onto a number line using pictures.</li> <li>• To count in thirds and place thirds onto a number line using pictures.</li> <li>• To find fractions (half) of whole numbers.</li> <li>• To find a fraction (half, third, quarter) of a quantity (length).</li> </ul>	
<p><b>Time</b></p>	<p>This chapter explores concepts of time. It begins with recognising time to 5 minutes and progresses in a way that pupils will be able to tell time, sequence it and manipulate an analogue clock. Pupils will then be learning how to find the duration of time, the end of a length of time, the beginning of a length of time and finally, compare lengths of time.</p> <ul style="list-style-type: none"> <li>• To be able to tell time to five minutes using 'quarter past'.</li> <li>• To be able to tell time to five minutes using 'quarter to' the hour.</li> <li>• To be able to sequence daily events by time.</li> <li>• To be able to draw hands on an analogue clock to show the correct time.</li> <li>• To be able to find the end time given the start time and the duration in 30-minute and hourly intervals.</li> <li>• To be able to find the duration of time to 5-minute intervals given the start time and the end time.</li> <li>• To be able to find the end time given the start time and the duration in 30-minute and hourly intervals.</li> <li>• To be able to find the end time to 5 minutes given the start time and the duration.</li> <li>• To be able to find the start time, given the end time and the duration in 30-minute and hourly intervals.</li> <li>• To be able to find the start time given the end time and the duration.</li> <li>• To be able to compare time in hours and minutes.</li> </ul>	<p>Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.</p> <p>Compare and sequence intervals of time. Know the number of minutes in an hour and the number of hours in a day. Compare and sequence intervals of time.</p> <p>Compare and sequence intervals of time. Know the number of minutes in an hour and the number of hours in a day.</p>

	<ul style="list-style-type: none"> <li>To be able to use knowledge of time to solve problems.</li> </ul>	
<b>Multiplication and Division of 2, 5 and 10</b>	<p>This chapter focuses on both the multiplication and division of 2, 5 and 10. Pupils will look at different ways of sharing, including sharing and grouping before covering division by 2, 5 and 10. Pupils will also investigate links between multiplication and division and odd and even numbers.</p> <ul style="list-style-type: none"> <li>To be able to understand that grouping is a way of dividing and use the division (<math>\div</math>) and equals (=) signs.</li> <li>To be able to understand that sharing is a way of dividing and discover the relationship between division and multiplication.</li> <li>To be able to use division facts for the 2 times table and relate them to multiplication facts.</li> <li>To be able to divide by 5 and identify links with multiplying by 5. To be able to use division facts for the 5 times table and relate them to multiplication facts.</li> <li>To be able to use division facts for the 10 times table and relate them to multiplication facts.</li> <li>To be able to solve word problems involving division within the division facts of the 2, 5 and 10 times table.</li> <li>To be able to recognise and understand odd and even numbers.</li> <li>To be able to apply knowledge of multiplication and division to solve problems.</li> </ul>	<p>Calculate mathematical statements for division within the multiplication tables and write them using the division (<math>\div</math>) and equals (=) signs.  Recall and use division facts for the 2, 5 and 10 multiplication tables.  Solve problems involving division using materials, arrays, repeated addition, mental methods and division facts, including problems in contexts.  Recall and use division facts for the 2, 5 and 10 multiplication tables.  Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.  Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p>
<b>Temperature</b>	<p>In this chapter, pupils will gain experience in measuring temperature. They will learn about Celsius, how to read thermometers to help them understand, and they will look at the different kinds of temperatures we can measure.</p> <ul style="list-style-type: none"> <li>To be able to accurately read temperature in Celsius.</li> <li>To be able to estimate temperature and read thermometers to confirm the estimate.</li> </ul>	<p>Choose and use appropriate standard units to estimate and measure temperature (<math>^{\circ}\text{C}</math>) to the nearest appropriate unit, using thermometers.</p>

	<ul style="list-style-type: none"> <li>To be able to apply knowledge of temperature to solve problems.</li> </ul>	
<b>Volume</b>	<p>This chapter in Year 2 is on volume. It involves pupils comparing volume, measuring in litres and millilitres and solving word problems associated with volume.</p> <ul style="list-style-type: none"> <li>To be able to compare and order volume and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math>.</li> <li>To be able to compare the volume of water using non-standard units of measurement.</li> <li>To be able to measure volume in litres and determine whether an amount is more than, less than or equal to a litre.</li> <li>To be able to measure and compare volume in millilitres.</li> <li>To be able to solve word problems on volume of water in litres, involving addition and subtraction.</li> <li>To be able to solve word problems on volume.</li> <li>To be able to solve word problems on volume in litres, involving multiplication and division.</li> <li>To be able to apply knowledge of volume to solve problems.</li> </ul>	<p>Choose and use appropriate standard units to estimate and measure capacity (litres/millilitres) to the nearest appropriate unit, using measuring vessels. Compare and order volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math>.</p>
<b>Picture Graphs</b>	<p>In this chapter, pupils will learn how to read, interpret, analyse and construct their own picture graphs with confidence.</p> <ul style="list-style-type: none"> <li>To be able to read and interpret a picture graph with a scale of 1:1.</li> <li>Interpret and construct simple pictograms and tally charts. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</li> <li>To be able to read and interpret a picture graph with a scale of 1:2.</li> <li>To be able to read and interpret a picture graph with a scale of 1:5</li> <li>To be able to read and interpret a picture graph with a scale of 1:10.</li> <li>To be able to apply knowledge of picture graphs to solve problems..</li> </ul>	<p>Interpret and construct simple pictograms. To be able to read and interpret a picture graph with confidence. Interpret and construct simple pictograms, tally charts and tables. Ask and answer questions about totalling and comparing categorical data. Interpret and construct simple pictograms, tally charts and tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p>

## Summer Term

Review and recap term and SAT's readiness:		
<b>Addition and Subtraction Place Value Day</b>	Comparing numbers Partitioning revision Mental strategies Revision of methods e.g. column method Solving missing number problems Using inverse to check answers/finding the missing number problems Solving reasoning problems Balance equations <b>SATs style questions weaved in</b>	
<b>Multiplication and Division</b>	Mental strategies – 2x, 5x, 10x Revision of methods Solving missing number problems Using inverse to check answers / solve missing number problems Solving reasoning problems Finding fractions of a number Simplifying repeated addition and making links to multiplication <b>SATs style questions weaved in</b>	
<b>2D and 3D Shape and Fractions</b>	Revision of names of 2D and 3D shapes and their properties Finding lines of symmetry Making comparisons of shapes, stating similarities and differences Finding fractions of 2D shapes <b>SATs style questions weaved in</b>	
<b>Measure / Money</b>	Measuring a length accurately Use a ruler to draw a line and measure To find different totals up to e.g. choosing coins to make 50p Choose coins to make a given total Find and compare fractions of amounts <b>SATs style questions weaved in</b>	
<b>Time</b>	Read the time to quarter past / quarter to Read the time to the nearest 5 minutes	

	<p>Solving problems involving time Finding an hour later / earlier etc. <b>SATs style questions weaved in</b></p>	
	<p><b>Estimating/ Rounding</b></p> <p><b>Investigative work – using and applying skills</b></p> <p><b>Use of AFL to inform this week’s planning</b></p>	
<b><u>Number / Calculating</u></b>	<p>Revision of methods for Addition, Subtraction, Multiplication, Division Reasoning and Problem solving tasks involving calculating Carry out investigations involving number and application of calculating</p>	
<b><u>Geometry – 2D/3D Shape</u></b>	<p>Revision of names of 2D and 3D shapes and their properties Making comparisons Investigations involving shape <b>Time</b> Read the time to quarter past / quarter to Read the time to the nearest 5 minutes Solving problems involving time Finding an hour later / earlier etc.</p>	
<b><u>Measure: Capacity</u></b>	<p>Reading scales, comparing and ordering volume/capacity, recording using <math>&lt;</math>, <math>&gt;</math> and <math>=</math>.(true or false questions, can you find two different sized containers that hold the same amount) <b>Problem solving</b> – Making potions – create a recipe for a potion using diff. coloured waters to make them e.g. 100ml Frog’s breath – measure out ingredients. Diff. sized containers in width &amp; height, estimate how much is in each, record results</p>	
<b><u>Geometry – Position and Direction</u></b>	<p>Order and arrange combinations of shapes/objects Create patterns and sequences Describe position, direction and movement, including movement in a straight line Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)</p>	

<b><u>Statistics (Link to Health Week)</u></b>	Interpret and construct simple pictograms, tally charts, block diagrams and tables Ask and answer simple questions and comparing data	
<b><u>Measure: Money</u></b>	Finding totals Making totals Combing totals Solving problems involving money Investigations involving money	