



Mathematics Long-Term Plan 2022-23

Equipping Children for a World of Possibilities

Mathematics - INTENT

Curriculum Intent: Equipping Children for a World of Possibilities.

Mathematics Subject Intent.

The intent of our mathematics curriculum is for **all** of our pupils to gain a deep and sustained understanding of the mathematical concepts, skills and knowledge that they are taught during their 3 years at HHIS. Our end goal and expectation is for all pupils to have acquired the fundamental facts and concepts of maths for their year or key stage. At this point they are ready to move confidently on to their next stage of maths. Our pupils are encouraged to see the mathematics that surrounds them every day and enjoy developing vital skills in this subject to equip them for the life experiences which lie ahead.

Mathematics - IMPLEMENT

How is your subject taught?

The Teaching for Mastery (TfM) approach to teaching and learning aims for all pupils to develop deep understanding of maths and display an understanding of strategies that in time can be deployed automatically. The 5 big ideas of TfM and the associated pedagogy underpin the planning and delivery of our mathematics curriculum. (Coherent small steps, representation and structure, variation, fluency, mathematical thinking).

Teaching for Mastery is based on the expectation that **all pupils can achieve highly in maths**.

Achieving highly in maths requires that pupils:

- Have a deep and flexible understanding of mathematical concepts;
- Are fluent in number facts;
- Develop fluency in calculation procedures.

In order to ensure pupils have a deep and secure understanding of the content taught, our plans have been adjusted to allow longer on topics and we move more slowly through the curriculum. After evaluating the findings of the National Textbook Project and our engagement with NCETM national projects, year 1 and 2 broadly follow the progression of the White Rose Schemes of Learning (version 2) which has been linked to the National Curriculum objectives. When planning the small steps of learning in a unit, staff also access the NCETM Curriculum Prioritisation resources and the updated Power Maths planning guides. Early Years staff have developed a coherent long term plan which is structured to meet the needs of our pupils at their varying levels of attainment on entry. This is based on the White Rose Schemes of Learning at the planning stage to ensure that the 5 big ideas of TfM are embedded within the teaching and learning. This is supplemented by the learning completed through the Mastering Number sessions which give extra focus on the Number ELG.

In Reception, pupils have 3 direct whole class mathematics input sessions, each of which is followed up by an adult led session. Carefully planned activities which support the learning will be available through the continuous provision and there will also be a 'must do' Maths job where the pupils are applying new knowledge and skills

independently. In Year 1, pupils have 5 mathematics sessions a week and in Year 2 they have 5 sessions a week. In KS1, our pupils are taught mathematics in whole classes and our staff have high aspirations for all pupils.

In a lesson, the learning will focus on one key step of learning and connections are made across mathematical topics. To outsiders it may appear that the pace of the lesson is slower, but progress and understanding is enhanced. Lessons are planned based on formative assessment of what the pupils already know and a vast majority of the class are included in learning mathematical concepts. At the planning stage, teachers consider the scaffolding that may be required for pupils who are struggling to grasp a concept and challenge questions will be devised for those pupils who may grasp the concepts more rapidly.

In Key Stage 1, the lessons are crafted to enable the pupils to explore and unpick the mathematics themselves using the knowledge and skills that they already have. The lesson begins with an anchor task which usually sets the context of the learning in a real-life scenario. During this time, the class teacher (and TA if applicable) will spend time observing and questioning the pupils. Pupils who have grasped a concept quickly will be probed further with additional questioning. During the anchor task, the pupils will have access to carefully selected practical resources and pictorial representations which draw out the structure of the mathematics. The pupils will then be expected to use these representations to demonstrate their understanding when completing independent learning. (Concrete- pictorial- abstract)

Questions are used by staff to challenge thinking and to check understanding. A variety of questions are used, but you will often hear the same ones being repeated: How do you know? Can you prove it? Are you sure? Can you represent it another way? What's the value? What's the same/different about? Can you explain that? What does your partner think?

Discussion and feedback also play a key role in our maths curriculum. The pupils have opportunities to talk to their partners and explain/clarity their thinking. Staff will model the use of whole sentences to answer a question and will introduce and promote the use of precise mathematical vocabulary which will often be supported by a stem sentence or generalisation. (A sentence which encapsulates the structure of the mathematical concept)

Extensive research and studies have identified that feedback is an integral and important part of teaching and learning. Our ultimate aim is to create a culture of rich and effective feedback between teachers and pupils in order to support effective learning using those approaches which research and evidence suggest are the most effective. Our marking and feedback policy recognises the significant time that written feedback can take and therefore seeks to make the most effective use of teacher and support staff time. We have implemented whole class feedback in mathematics. Feedback sheets are available for adults to annotate throughout a lesson. They are also used by teachers when they check the completed work at the end of a lesson. The observations and assessments captured here are then used to plan the next lesson or to address feedback which might be needed on an individual, class or whole class level. The most valuable feedback is given during a lesson to enable a pupil to make progress.

Provision for vulnerable groups is planned and assessed by the teacher in response to their specific needs. There may be pupils with significant SEND needs who have a bespoke curriculum planned and delivered in order to enable them to make progress from their individual starting point.

This carefully planned and sequenced teaching structure is supplemented with regular maths fluency sessions. The school is part of the NCETM 'Mastering Number' project which has provided up to date training to all teachers and through carefully planned sessions is designed to strengthen the understanding of number, and fluency with number facts, among children in the first three years of school.

These short 15 minute sessions happen 4 times a week and focus on using manipulatives to explore and secure the quick number facts necessary to be successful in future maths. Over the year, children will use a range of materials and representations, including a small abacus-like piece of equipment called a rekenrek.

Mathematics Long-term Plan

	Autumn	Spring	Summer
Year R	<ul style="list-style-type: none"> • Match and sort • Compare amounts • Comparing size, mass and capacity • Exploring pattern • Representing 1, 2, 3 • Comparing 1, 2, 3 • Composition of 1, 2, 3 • 2D shape • Positional language • Representing numbers to 5 • One more, one less • Time 	<ul style="list-style-type: none"> • Introducing zero • Comparing Numbers to 5 • Comparing 4 and 4 • Compare mass • Compare capacity • Making 6,7 and 8 • Making pairs • Combining two groups • Length and height • Time • Building 9 and 10 • Comparing numbers to 10 • Bonds to 10 • 3-D shape • Pattern (2) 	<ul style="list-style-type: none"> • Building numbers beyond 10 • Counting patterns beyond 10 • Spatial reasoning (1) Match, rotate manipulate • Addition stories • Subtraction stories • Spatial reasoning (2) Compose and decompose • Doubling, sharing and grouping • Odd and even • Spatial reasoning (3) Visualise and build • Deepening understanding • Patterns and relationships
Year 1	<ul style="list-style-type: none"> • Number: Place Value (within 10) • Addition and Subtraction within 10 • Geometry - 2D and 3D shape • Numbers to 20 	<ul style="list-style-type: none"> • Number: Addition and Subtraction (within 20) • Number: Place Value (within 50) (Multiples of 2, 5 and 10 to be included) • Measurement: Length and Height • Measurement: Weight and Volume 	<ul style="list-style-type: none"> • Number: Multiplication (Reinforce multiples of 2, 5 and 10 to be included) • Number: Division • Number: Fractions • Geometry – Position and direction • Number: Place Value (within 100) • Measurement - money • Measurement -Time
Year 2	<ul style="list-style-type: none"> • Place value and number • Number - Addition and subtraction • Number - Multiplication 	<ul style="list-style-type: none"> • Statistics • Measurement - Money • Number - Division • Number - Fractions • Measurement – Height and length • Measurement: Mass, Capacity and Temperature 	<ul style="list-style-type: none"> • Measurement -Time • Geometry – Properties of shapes • Position and direction

Mathematics Medium-term Plan - Reception

Autumn Term

Year Group - Reception	Term - Autumn Block 1	Unit of Learning – Just like me 3 weeks
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Number	Measure, Shape and Spatial Thinking
Match and Sort Compare Amounts	Compare size, mass and capacity Exploring Pattern
Progression in Small Steps	
Match objects that are the same	
Sort objects based on shared attributes	
Sort the same objects in different ways	
Compare size	
Compare amounts	
Compare Height	
Compare Length	
Compare Capacity	
Copy a repeating pattern (ABABA)	
Continue a repeating pattern (ABABA)	
Create a repeating pattern (ABABA)	

	Three-Four Year Olds	Reception
Development Matters	Compare quantities using language 'more than', 'fewer than' Make comparisons between objects relating to size, length, weight and capacity. Talk about and identify the patterns around them. Extend and create ABAB patterns. Notice and correct an error in repeating patterns.	Continue, copy and create repeating patterns. Compare length, weight and capacity.
Early Learning Goals	Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	

Year Group - Reception	Term - Autumn Block 2	Unit of Learning – It's me, 1, 2, 3 3 weeks
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Number	Measure, Shape and Spatial Thinking
Representing 1,2 and 3 Comparing 1,2 and 3 Composition of 1,2 and 3	Circles and Triangles Positional Language
Progression in Small Steps	
Count forwards and backwards to 3	
Subitise numbers to 3	
Representing 1	
Representing 2	
Representing 3	
Sorting 1,2 and 3	
Matching 1,2 and 3	
Comparing 1,2 and 3	
Matching quantity and numeral	
Composition of 1,2 and 3	
Recognising Circles and Triangles	
Sorting circles and Triangles	
Create circles and triangles (printing, construction, art etc)	
Using positional language	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)</p> <p>Say one number for each item in order</p> <p>Link numerals and amounts</p> <p>Select shapes appropriately.</p> <p>Talk about and explore 2D and 3D shapes.,</p> <p>Combine shapes to make new ones.</p> <p>Understand position through words alone. E.g. 'the bear is under the table.'</p> <p>Describe a familiar route</p> <p>Discuss routes and locations, using words like 'in front of' and 'behind'</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number (numeral) with it's cardinal number value</p> <p>Compare numbers</p> <p>Explore the composition of numbers to 3</p> <p>Select, rotate and manipulate shapes to develop spatial reasoning skills.</p>
Early Learning Goals	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting)</p> <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>	

Year Group - Reception	Term - Autumn Block 3	Unit of Learning – Light and dark 3 weeks
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Number	Measure, Shape and Spatial Thinking
Representing Numbers to 5 One more, one less	Shapes with 4 sides Time
Progression in Small Steps	
Count forwards and backwards to 5	
Subitise 4 and 5	
Representing 4	
Representing 5	
Sorting 4 and 5	
Composition of 4	
Composition of 5	
Represent and compare numbers in 5 frames	
Link the one more/one less pattern to counting forward and back	
Find one more and one less	
Recognise squares and rectangles	
Build squares and rectangles	
Combine squares, rectangles and triangles in different ways.	
Talk about day and night.	
Talk about daily routines using time language	
Measure time in simple ways (sand timers, counting 'sleeps' etc)	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)</p> <p>Say one number for each item in order</p> <p>Link numerals and amounts</p> <p>Show 'finger numbers' up to 5.</p> <p>Select shapes appropriately.</p> <p>Talk about and explore 2D and 3D shapes.,</p> <p>Combine shapes to make new ones.</p> <p>Begin to describe a sequence of events, real or fictional using words such as. 'first', 'then'...</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number (numeral) with it's cardinal number value</p> <p>Compare numbers</p> <p>Understand the 'one more, one less' relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 5</p> <p>Select, rotate and manipulate shapes to develop spatial reasoning skills.</p>
Early Learning Goals	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting)</p> <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>	

Year Group - Reception	Term - Spring Block 1	Unit of Learning – Alive in 5 3 weeks
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Number	Measure, Shape and Spatial Thinking
Introducing Zero Comparing Numbers to 5 Comparing 4 and 4	Compare Mass (2) Compare Capacity (2)
Progression in Small Steps	
Recognising Zero	
Comparing quantities to 5 (more, fewer or equal)	
Explore different compositions of 4	
Explore different compositions of 5	
Hidden numbers (how many are hiding?)	
Compare Mass	
Describe capacity (empty, full, nearly full, nearly empty etc)	
Compare Capacities	
Compare Numicon in bucket scales	
Balance Numicon in Bucket Scales	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)</p> <p>Say one number for each item in order</p> <p>Link numerals and amounts</p> <p>Compare quantities using language 'more than', 'fewer than'</p> <p>Solve real world mathematical problems with numbers up to 5.</p> <p>Make comparisons between objects relating to size, length, weight and capacity</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number (numeral) with it's cardinal number value</p> <p>Compare numbers</p> <p>Understand the 'one more, one less' relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 5</p> <p>Automatically recall bonds for numbers 0-5.</p> <p>Compare length, weight and capacity.</p>
Early Learning Goals	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting)</p> <p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5</p> <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>	

Year Group - Reception	Term - Spring Block 2	Unit of Learning – Growing 6, 7 and 8 3 weeks
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Number	Measure, Shape and Spatial Thinking
6,7 and 8 Making Pairs Combing two groups	Length and Height Time
Progression in Small Steps	
Count accurately up to 8 objects	
Represent 6	
Represent 7	
Represent 8	
Count 6, 7 or 8 objects out from a larger quantity	
Explore different compositions of 6, 7 and 8	
Understand what is meant by a 'pair'	
Arrange small quantities into pairs	
Notice that for some quantities, after pairing, odd one is left over	
Match pairs of different representations of the same number	
Combine two groups	
Combine two groups to make a given total	
Compare lengths (longer, shorter)	
Compare heights (taller, shorter)	
Measure height	
Talk about time using vocab such as 'today, tomorrow, yesterday, soon etc'	
Explore durations of time (E.g. how many start jumps can I do in 30 seconds?)	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)</p> <p>Say one number for each item in order</p> <p>Link numerals and amounts</p> <p>Recite numbers past 5.</p> <p>Compare quantities using language 'more than' , 'fewer than'</p> <p>Make comparisons between objects relating to size, length, weight and capacity</p> <p>Begin to describe a sequence of events, real or fictional using words such as. 'first', 'then'...</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number (numeral) with it's cardinal number value</p> <p>Compare numbers</p> <p>Understand the 'one more, one less' relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 8</p> <p>Compare length, weight and capacity.</p>
Early Learning Goals	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Subitise (recognise quantities without counting) up to 5</p> <p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10.</p> <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> <p>Explore and represent patterns within numbers up to 10, including odds and evens.</p>	

Year Group - Reception	Term - Spring Block 3	Unit of Learning – Building 9 and 10 3 weeks
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Number	Measure, Shape and Spatial Thinking
9 and 10 Comparing Numbers to 10 Bonds to 10	3D Shape Pattern (2)
Progression in Small Steps	
Count backwards and forwards to 10	
Accurately count up to 10 objects	
Represent 9	
Represent 10	
Compare two quantities	
Order three or more quantities	
Explore different compositions of 9 and 10	
Explore number bonds to 10	
Explore 3D shapes, Which stack? Which roll?	
Sort and Compare 3D shapes.	
Name 3D shapes.	
Copy more complex patterns E.g AAB AABBB	
Continue more complex patterns E.g AAB AABBB	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)</p> <p>Say one number for each item in order</p> <p>Link numerals and amounts</p> <p>Recite numbers past 5.</p> <p>Compare quantities using language ‘more than’ , ‘fewer than’</p> <p>Talk about and identify the patterns around them.</p> <p>Extend and create ABAB patterns.</p> <p>Notice and correct an error in repeating patterns.</p> <p>Talk about and explore 3D shapes using informal and mathematical language: ‘sides, corners, straight, flat, round’.</p>	<p>Count objects, actions and sounds.</p> <p>Subitise</p> <p>Link the number (numeral) with it’s cardinal number value</p> <p>Compare numbers</p> <p>Automatically recall number bonds for numbers 0-5 and some to 10.</p> <p>Explore the composition of numbers to 10.</p> <p>Continue, copy and create repeating patterns.</p>
Early Learning Goals	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10.</p> <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>	

Year Group - Reception	Term – Summer Block 1	Unit of Learning – To 20 and beyond 3 weeks
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			Three-Four Year Olds	Reception
Number	Measure, Shape and Spatial Thinking	Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Recite numbers past 5.</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)</p> <p>Say one number for each item in order</p> <p>Link numerals and amounts</p> <p>Compare quantities using language ‘more than’, ‘fewer than’</p> <p>Talk about and explore 2D and 3D shapes using informal and mathematical language: ‘sides, corners, straight, flat, round’.</p> <p>Select shapes appropriately.</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number (numeral) with it’s cardinal number value</p> <p>Compare numbers</p> <p>Understand the ‘one more, one less’ relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 10.</p> <p>Select, rotate and manipulate shapes to develop spatial reasoning skills.</p>
Building Numbers Beyond 10 Counting Patterns Beyond 10		Early Learning Goals		
Measure, Shape and Spatial Thinking		Verbally count beyond 20, recognising the pattern of the counting system		
Spatial Reasoning (1) Match, Rotate, Manipulate		Subitise (recognise quantities without counting) up to 5.		
Progression in Small Steps				
Build and identify numbers to 20 (and beyond)				
Explore counting patterns beyond 10 (inc patterns of tens and ones)				
Count on and back from different numbers				
Say which number comes before or after a given number				
Place number sequences in order				
Complete jigsaw and shape puzzles				
Match arrangements of shapes				
Select shapes to complete picture boards or tangram outlines				
Design own pictures using shapes				

Year Group - Reception	Term – Summer Block 2	Unit of Learning – First, then, now 3 weeks
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Adding More Taking Away	Spatial Reasoning (2) Compose and Decompose
Progression in Small Steps	
Adding more using the ‘first, then, now’ structure (count all to find ‘now’)	
Adding more using the ‘first, then, now’ structure (count on to find ‘now’)	
Adding more – unknown ‘then’	
Adding more – unknown ‘first’	
Take away objects using the ‘first, then, now’ structure	
Take away – unknown ‘then’	
Combine shapes to make new shapes	
Combine a set of given shapes in different ways	
Break shapes apart to make new shapes	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Recite numbers past 5.</p> <p>Show ‘finger numbers’ up to 5.</p> <p>Experiment with their own symbols and marks as well as numerals.</p> <p>Solve ‘real world’ mathematical problems with numbers up to 5.</p> <p>Talk about and explore 2D and 3D shapes using informal and mathematical language: ‘sides, corners, straight, flat, round’.</p> <p>Combine shapes to make new ones.</p> <p>Select shapes appropriately.</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number (numeral) with it’s cardinal number value</p> <p>Compare numbers</p> <p>Understand the ‘one more, one less’ relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 10.</p> <p>Compose and decompose shapes so that children recognise a shape can have another number within it, just as numbers can</p> <p>Select, rotate and manipulate shapes to develop spatial reasoning skills.</p>
Early Learning Goals	<p>Have a deep understanding of number to 10, including the composition of each number.</p> <p>Automatically recall (without reference to rhymes or counting aids) number bonds to 5 (including subtraction facts) and some number bonds to 10.</p> <p>Subitise (recognise quantities without counting) up to 5.</p> <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>	

Year Group - Reception	Term – Summer Block 3	Unit of Learning – Find my pattern 3 weeks
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Number	Measure, Shape and Spatial Thinking
Doubling, Sharing and Grouping Even and Odd	Spatial Reasoning (3) Visualise and Build
Progression in Small Steps	
Know that double means 'twice as many'	
Sort Doubles and non-doubles	
Build Doubles	
Recognise and make equal groups	
Share a quantity equally	
Explore quantities that can not be shared equally between two	
Explore quantities that cannot be put into pairs	
Explore the odd and even number structure with Numicon and tens frames	
Replicate places and models	
Use positional language to describe items in relation to one another	
Visualise simple models by playing barrier games	

	Three-Four Year Olds	Reception
Development Matters	<p>Develop fast recognition of up to three objects without having to count them individually</p> <p>Recite numbers past 5.</p> <p>Show 'finger numbers' up to 5.</p> <p>Experiment with their own symbols and marks as well as numerals.</p> <p>Solve 'real world' mathematical problems with numbers up to 5.</p> <p>Describe a familiar route</p> <p>Discuss routes and locations, using words like 'in front of' and 'behind'</p> <p>Talk about and explore 2D and 3D shapes using informal and mathematical language: 'sides, corners, straight, flat, round'.</p> <p>Combine shapes to make new ones.</p> <p>Select shapes appropriately.</p>	<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Explore the composition of numbers to 10.</p> <p>Select, rotate and manipulate shapes to develop spatial reasoning skills</p>
Early Learning Goals	<p>Explore and represent patterns in numbers up to ten, including odds and evens, double facts and how quantities can be distributed equally.</p> <p>Automatically recall (without reference to rhymes or counting aids) number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts</p>	

Mathematics Medium-term Plan – Year 1

AUTUMN TERM

Year Group - Year 1	Term - Autumn Block 1	Unit of Learning – Numbers to 10
<p>About the unit This unit focuses on children’s ability to recognise, represent and manipulate numbers to 10. Children begin by practising and developing their ability to sort and group objects using different criteria, then move on to counting groups of objects up to 10. Children will learn to recognise and count different representations of numbers to 10 and use a ten frame to help structure the counting and reasoning. As children become more confident with counting they will be introduced to the appropriate vocabulary of counting: the word ‘digit’ and the written names of each number. They will move on to counting backwards and recognising ‘one more’ as a number increasing and ‘one less’ as a number decreasing. Children will use all these skills to compare and order numbers to 10, using concrete and pictorial representations to support their reasoning. Finally, they will learn about ordinal numbers and be introduced to the number line as a representation of counting one more or one less.</p>		<p>Where the unit fits in – In this unit, children begin by sorting and grouping objects up to 10. They then count to 10 and focus on ‘one more’ and ‘one less’ before learning how to use a number line to count forwards and backwards.</p>
<p>Prior Learning – In Reception, the children will have investigated numbers to 10 using concrete objects, five frames, ten frames, part whole models, number lines and number tracks.</p>	<p>Vocabulary</p> <ul style="list-style-type: none"> • sort, groups, pattern • digits, number • count on, count back, one more, one more than, one less, one less than • matched, equal to, = • fewer, less than, • most, greatest • number line, number track, ten frame 	<p>Resources</p> <ul style="list-style-type: none"> • Tens frames • Number track • Number lines • Part whole models
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> • Confidently count forwards and backwards to and from 10. They will be able to • Recognise one more and one less than a number up to 10 • Represent this using concrete, pictorial and abstract representations • Compare and order numbers. • Use ordinal numbers to describe the order of things or events 		
<p>Learning Objective</p>	<p>Small step progression</p>	<p>Possible teaching Activities</p>
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> * Sorting objects 	<p>PowerPoint Presentation (whiterosemaths.com)</p>
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> * Counting objects to 10 * Represent objects to 10 * Count, read and write forwards from and number 0 to 10 * Count, read and write backwards from and number 0 to 10 * Count one more * Count one less * One to one correspondence to start to compare groups 	

<ul style="list-style-type: none"> Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number 		
<ul style="list-style-type: none"> 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 Compare numbers using and = signs Read and write numbers from 1 to 20 in numerals and words 	<ul style="list-style-type: none"> * Comparing groups using language such as equal, more/greater, less/fewer * Introduce = , > and < symbols * Comparing numbers * Ordering groups of objects * Compare numbers * Ordinal numbers 	
<ul style="list-style-type: none"> 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 zero or 1, or from any given number 	<ul style="list-style-type: none"> * The number line 	

Year Group - Year 1	Term - Autumn Block 2	Unit of Learning – Addition and subtraction
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<p>About the unit</p> <p>This unit focuses on number bonds within 10 and number bonds to 10. It is important that over time children become fluent in these facts because they are the foundation for future number facts. Within this unit, the pupils will focus on part-whole within 10, which introduced children to the idea that a whole can be separated into parts of various sizes. They are introduced to formal addition for the first time through the idea of ‘count all’ and ‘count on’ strategies. A ‘count all’ strategy is when all parts are added together to make a whole. A ‘count on’ strategy asks children to start with a number and count on. As well as introducing children to some of the key language associated with addition, children will also begin to develop an understanding of the commutativity of addition – the idea that addition calculations can be performed in any order. This unit also focuses on subtraction within 10. Children will be introduced to the key language of subtraction and a range of scenarios in which subtraction takes place. Within this unit, children are introduced to formal subtraction for the first time: they count how many are left , break apart a whole and find the difference. Children will model each of these situations using concrete and pictorial representations: taking away cubes, crossing out pictures and counting back on a number-line. This unit builds on children’s previous knowledge of number bonds to 10 and makes explicit links between subtraction facts and addition facts learnt at the start of his unit.</p>	<p>Where the unit fits in –</p> <p>This unit builds children’s knowledge of number bonds within 10, their ability to use a number line to count forwards and backwards.</p>
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<p>Prior Learning –</p> <p>Before they start this unit, it is expected that children:</p> <ul style="list-style-type: none"> can use the part-whole model to partition a number to 10 can write and compare number bonds to 10 now how to count back from any number under 10 know what the symbols < and > mean. 	<p>Vocabulary</p> <ul style="list-style-type: none"> part, whole and part-whole altogether, in total, total, sum add, added, plus, or + count, count on missing, missing part number bonds, number pairs number stories 	<p>Resources</p> <ul style="list-style-type: none">
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<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> use a variety of manipulatives to represent addition within ten, including cubes, ten frames, number lines and part-whole models have confidence in knowing and recognising number facts and number pairs will also start to increase

- start to use these to answer simple calculations without manipulatives.
- rearrange the order of a calculation to work efficiently, using their knowledge of commutativity
- identify the parts and whole in subtraction calculations even when the = symbol is in different places
- understand that subtraction, unlike addition, is not commutative
- confident in using the part-whole model to represent subtraction and see 'numbers within the numbers'.

Learning Objective	Small steps progression	Possible teaching Activities
<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> * Part whole model 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> • 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) • Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs 	<ul style="list-style-type: none"> * Addition symbol * Fact families – addition facts * Find number bonds for numbers within 10 	
<ul style="list-style-type: none"> • 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 1-digit and 2-digit numbers to 20, including zero 	<ul style="list-style-type: none"> * Systematic methods for number binds within 10 * Number bonds to 10 * Compare number bonds * Addition – adding together * Addition – adding more * Finding a part * Subtraction – taking away, how many are left? Crossing out * Subtraction – taking away, how many are left. Intro sub symbol * Subtraction – finding a part, breaking apart * Fact families – the 8 facts * Subtraction – counting back * Subtraction – finding the difference * Comparing addition and subtraction statements – $a+b > c$ * Comparing addition and subtraction statements – $a+b > c +d$ 	

Year Group - Year 1	Term - Autumn Block 3	Unit of Learning – Geometry – VERSION 3 SCHEME OF LEARNING
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<p>About the unit This unit introduces children to 2D and 3D shapes and their properties. Children will learn to name the different shapes and identify the features that determine how they are classified. By exploring the similarities and differences, children will make the distinction between 2D and 3D shapes. Throughout the unit, shapes are presented with different orientations. This helps children focus on the specific mathematical properties of the shapes and secures their understanding of classifying 2D and 3D shapes. They will also learn to identify individual shapes within composite shapes (where several shapes are joined together) and explore the relationship between</p>	<p>Where the unit fits in – This unit builds on the work that children have done sorting objects. It draws on their skills of identifying similarities and differences and making direct comparisons, and develops their skill of identifying patterns and sequences in shapes.</p>
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2D and 3D shapes. Children will then begin to explore sequences using shapes, and to identify patterns. Children will apply these skills when exploring patterns and sequences in number in future units.		
Prior Learning –	Vocabulary <ul style="list-style-type: none"> • 2D, 3D • cube, cuboid, sphere, cylinder, pyramid, cone • circle, triangle, square, rectangle • side, edge, face, corner • pattern, repeat 	Resources <ul style="list-style-type: none"> •
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> • identify and describe the key properties of 2D and 3D shapes, using the correct mathematical terminology • ignore non-significant differences such as colour, size and orientation in order to classify shapes • identify, describe and continue repeating patterns made of shapes. 		
Learning Objective	Small steps progression	Possible teaching Activities
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]	<ul style="list-style-type: none"> • Recognise and name 3-D shapes • Sort 3-D shapes • Recognise and name 2-D shapes • Sort 2-D shapes – new step • Patterns with 3-D and 2-D shapes 	Y1 Autumn Block 3 SOL Shape.pdf (whiterosemaths.com)

Year Group – Year 1	Term – Autumn Block 4	Unit of Learning – Place value within 20
About the unit This unit lays the essential foundations of place value, as children begin to recognise the place value of each digit in a 2-digit number. This is an important skill that children will develop when they add and subtract and begin to work with larger numbers. Children will count in tens and ones, learning that they can partition a 2-digit numbers into tens and ones. They will find the number that is one more or one less than a given number, noticing when the tens digit changes and when only the ones digit number changes. As they become more fluent, they will begin to compare and order numbers to 20 using the < and > symbols.		Where the unit fits in – This unit builds on children’s work on numbers to 10, extending their ability to count, compare and order numbers to 20. Spring block 1 will focus on addition within 20.
Prior Learning – The children can – <ul style="list-style-type: none"> • recognise numbers bonds within 10 • understand how to partition a number within 10 • can compare and order numbers within 10 	Vocabulary numbers 11–20 count, backwards, forwards tens, ones more, less greatest, smallest, fewer, fewest, most, least order, compare equal to, more than, less than	Resources ten frame, number line, cubes and counters, part-whole model

Assessment (By the end of this unit the children will be able to...)

Children who have mastered this unit will be able to partition numbers above 10 into tens and ones. They will be able to work with many different concrete and pictorial representations of numbers, and use correct mathematical language to describe and compare numbers. They will be able to count forwards or backwards to 20, beginning at 0 or 1, or from any given number. They will also be able to identify 'one more' and 'one less' than a given number.

Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> Count to twenty, forwards and backwards, beginning with 0 or 1, from any given number. Count, read and write numbers to 20 in numerals and words. 	<ul style="list-style-type: none"> Count forwards and backwards and write numbers to 20 in numerals and words Numbers from 11-20 Tens and ones 	Year-1-Autumn-block-4-Place-Value.pdf
<ul style="list-style-type: none"> Given a number, identify one more or one less. 	<ul style="list-style-type: none"> Count one more, one less 	
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Compare groups of objects Compare numbers Order groups of objects Order numbers 	

SPRING TERM

Year Group - Year 1	Term – Spring – Block 1	Unit of Learning – Addition and subtraction (Within 20)
<p>About the unit</p> <p>In this unit, children choose the most appropriate addition strategies by thinking about the numbers involved in the calculations. It is a vital unit, as understanding how to add by crossing a 10 is very important for later addition strategies, including the formal methods introduced in Key Stage 2. Within this unit, children progress from using a counting strategy to using known number bonds to derive answers to additions, including adding the ones separately from the ten, and also when to add by bridging 10. Children will have learned about subtraction before, but only within 10. This unit is a good chance to revise previously taught methods and move on from them to a range of efficient subtraction strategies. This unit forms the foundation for understanding efficient and effective calculation strategies throughout the rest of Key Stage 1 and into Key Stage 2, and children will also be making decisions about when to apply different approaches, which is a very important mathematical thinking skill.</p>	<p>Where the unit fits in –</p> <p>This unit builds on children's understanding of addition from A2 as well as on their knowledge of numbers to 20 from A4. It requires children to understand how numbers can be split apart into bonds, and how to represent numbers using manipulatives, as well as on number lines and number tracks. The unit follows on closely from addition within 20. Children will get a greater understanding of addition and subtraction as the inverse of one another. After this unit, children will cover numbers to 50. Children will become more confident with place value and many will see the patterns between each set of ten numbers</p>	
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> know how to count accurately up to 20 understand how to represent numbers up to 20 on ten frames and on a bead string 	<p>Vocabulary</p> <ul style="list-style-type: none"> count, count on add, addition, additions, plus or + altogether, in total number bond, calculation 	<p>Resources</p> <ul style="list-style-type: none"> counters or cubes, ten frames, number tracks, part-whole models, bar models

<ul style="list-style-type: none"> • know number bonds to 10, and how to split numbers up to 10 into two parts. • are confident with subtraction skills within 10 • can subtract more than one number mentally or by using a representation such as a number track • are fluent with counting on and back up to 20 • understand how to partition numbers up to 20 using the part-whole model. 	<ul style="list-style-type: none"> • tens, ones • number stories, • represent • part, whole, part-whole greater, less, how many more? • subtract (–) • find the difference how many are left, take away, count back • number bonds, fact family 	
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Assessment (By the end of this unit the children will be able to...)

- use different strategies for adding numbers within 20, choosing an appropriate method dependent on the numbers in the calculation
- use representations of ten frames to explain different methods for adding numbers up to 20
- add a 2-digit number to a single-digit number, such as $12 + 4$, using knowledge of place value to add ones and the ten separately
- add two single-digit numbers, such as $8 + 7$, by splitting one of the numbers using bonds to 10 to bridge the 10
- use bonds to 10 to find bonds to 20, such as $4 + 6 = 10$ so $14 + 6 = 20$
- apply these addition methods and choose which are appropriate when solving problems in a range of contexts.
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Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> • Add and subtract one-digit and two-digit numbers to 20, including zero. 	<ul style="list-style-type: none"> • Add by counting on 	Year-1-Spring-block-1-Addition-and-subtraction.pdf (whiterosemaths.com)
Represent and use number bonds and related subtraction facts within 20. <ul style="list-style-type: none"> • Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. 	<ul style="list-style-type: none"> • Find and make number bonds • Add by making 10 • Subtraction – not crossing 10 • Subtraction crossing 10 (1) • Subtraction crossing 10 (2) • Related facts 	
<ul style="list-style-type: none"> • Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$. 	<ul style="list-style-type: none"> • Compare number sentences 	

Year Group - Year 1	Term – Spring – Block 2	Unit of Learning – Place value within 50
<p>About the unit</p> <p>This unit focuses on interpreting, ordering and comparing numbers to 50. A strong understanding of numbers to 50, including their place value and relative sizes, will enable children to extend their calculation skills and number knowledge to larger numbers and to an increasing range of situations. Children will also be introduced to counting in multiples of 2 and 5, and will be encouraged to notice that multiples of 2 end in 0, 2, 4, 6 or 8 and that multiples of 5 end in 0 or 5. At the end of the unit, children solve word problems for the first time, by identifying the number sentences that relate to</p>	<p>Where the unit fits in –</p> <p>This unit builds on the knowledge of numbers to 20 developed so far in Year 1, as well as the addition and subtraction skills learn. Children will apply their knowledge of numbers to 50 in the next measures units, which introduce them to measurement-based problems.</p>	

the problems. This is an important step and allows children to build on their prior knowledge of the number system, addition and subtraction.

<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> • know how to count to 20, using correct number names and numerals • can partition numbers below 20 into tens and ones, confidently using Base 10 equipment and ten frames • understand how to carry out simple addition and subtraction questions with numbers below 20. 	<p>Vocabulary</p> <ul style="list-style-type: none"> • tens, ones • compare, order • less than (<) more than (>) • number names and numerals to 50 • greatest, least, biggest, smallest 	<p>Resources</p> <ul style="list-style-type: none"> •
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Assessment (By the end of this unit the children will be able to...)

- confidently count to 50 and will be able to order and compare numbers below 50, justifying their answers
- use a variety of representations to help them order and compare numbers
- confidently use the < and > signs
- to identify and solve number sentences represented by word problems.

Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> • Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. 	<ul style="list-style-type: none"> • Numbers to 50 	<p>Year-1-Spring-block-2-Place-Value-within-50.pdf (whiterosemaths.com)</p>
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Tens and ones • Represent numbers to 50 • One more one less 	
<ul style="list-style-type: none"> • Given a number, identify one more and one less • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least 	<ul style="list-style-type: none"> • Compare objects within 50 • Compare numbers within 50 • Order numbers within 50 	
<ul style="list-style-type: none"> • Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s 	<ul style="list-style-type: none"> • Count in 2s • Count in 5s 	

Year Group - Year 1	Term – Spring – Block 3	Unit of Learning – Measurement: Length and height
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<p>About the unit This unit focuses on comparing and measuring the height and length of objects using non-standard and standard units of measure. Children will learn how to accurately compare and measure and will understand the importance</p>	<p>Where the unit fits in – This unit builds on children’s previous work on number, and children will apply their understanding of number within practical contexts relating to height and</p>
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<p>of aligning starting points. Children will draw on their knowledge of number, particularly ordering and comparing numbers. Children will also learn the relationship between number lines and scales on a ruler and use this understanding to calculate differences in length. Children will use key language such as longer, longest, shorter, shortest, taller and tallest when comparing length and height.</p>	<p>length. Children’s previous use of number lines will help them understand how to use scales to calculate the difference between two or more lengths.</p>
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<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> • know how to compare and order numbers to 50 • understand that subtraction means finding the difference between two quantities • know how to add and subtract using a number line 	<p>Vocabulary</p> <ul style="list-style-type: none"> • long, longer, longest • short, shorter, shortest • tall, taller, tallest • length, height • compare, comparison • measure distance • unit, non-standard units ruler centimetre (cm) • total difference 	<p>Resources</p> <ul style="list-style-type: none"> •
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Assessment (By the end of this unit the children will be able to...)

- make direct comparisons of length and height
- suggest suitable non-standard units to measure a range of distances and will use these units accurately
- use a ruler with precision to measure length in centimetres
- solve 1- and 2-step problems asking them to find the total or the difference in the context of length and height

Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> • Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half). 	<ul style="list-style-type: none"> • Compare lengths and heights 	<p>Year-1-Spring-block-3-Length-and-Height.pdf (whiterosemaths.com)</p>
<ul style="list-style-type: none"> • Measure and begin to record the following: lengths and heights. • Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/ short, double/half). • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$. 	<ul style="list-style-type: none"> • Non-standard units of measure • Measure length (1) • Measure length (2) 	

Year Group - Year 1	Term – Spring – Block 4	Unit of Learning – Measurement: Weight and volume
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<p>About the unit This unit establishes the use of uniform non-standard units (such as cubes and cups) to measure weight and capacity. This is an important first step towards introducing standard units and provides a simple practical context in</p>	<p>Where the unit fits in – This unit extends children’s understanding of measurement by introducing the ideas of weight and volume, both of which should already be familiar from</p>
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<p>which a range of problems involving addition and subtraction can be introduced. There is also plenty of opportunity to explore part-whole and part-part relationships: for example, if a saucepan holds 10 cups of milk and 4 cups are poured out, how much is left in the pan?</p>	<p>practical, if informal, experience. The work here also reinforces understanding of comparison and ordering, including use of the inequality and equals signs.</p>	
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> carry our simple addition and subtraction calculations, supported by appropriate representations and apparatus where necessary. 	<p>Vocabulary</p> <ul style="list-style-type: none"> weight, weigh capacity, volume, contains, container heavier, heaviest, lighter, lightest more, most, fewer, less, least addition, subtraction balance scales, balanced compare, measure, estimate empty, full, amount, half 	<p>Resources</p> <ul style="list-style-type: none">
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> , compare and order weights and capacities of a variety of familiar objects, using convenient non-standard units such as plastic cubes for weight and cups for capacity use simple mathematical reasoning and their understanding of addition and subtraction to solve a range of word problems involving weight and volume. 		
<p>Learning Objective</p>	<p>Small step</p>	<p>Possible teaching Activities</p>
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Introduce weight and mass Measure mass Compare mass 	<p>year-1-spring-block-4-weight-and-volume-schemes-of-learning.pdf (whiterosemaths.com)</p>
<ul style="list-style-type: none"> Compare, describe and solve practical problems for: capacity and volume (for example, full/empty, more than, less than, half, half full, quarter). Measure and begin to record the following: capacity and volume. 	<ul style="list-style-type: none"> Introduce capacity and volume Measure capacity Compare capacity 	

SUMMER TERM

<p>Year Group - Year 1</p>	<p>Term – Summer Block 1</p>	<p>Unit of Learning – Multiplication</p>
<p>About the unit In this unit, children will develop their understanding of multiplication as repeated addition, understanding the difference between equal and not equal groups. They will use their knowledge of skip counting in 2s, 5s and 10s and will use concrete, pictorial and abstract representations to help them to find the total of multiple equal groups and of doubles. These representations will include arrays, a powerful way of developing multiplicative reasoning.</p>		<p>Where the unit fits in – The multiplicative thinking taught in this session will then feed into the work on division in the following unit.</p>

In the final lesson, children will use their understanding of multiplication as repeated addition to solve simple multiplication word problems. This will give them an opportunity to work with more abstract problems.		
Prior Learning – The children can – <ul style="list-style-type: none"> • have experience of counting in 2s, 5s and 10s • can sort objects into equal groups • recognise and use ten frames and number lines 	Vocabulary <ul style="list-style-type: none"> • equal groups • array, row, column • double, twice • add, addition, adding, altogether, total 	Resources <ul style="list-style-type: none"> •
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> • counting reliably in steps of 2, 5 and 10 • use concrete, pictorial and abstract representations to find the total of a given number of equal groups, including repeated addition • create arrays based on the numbers given to them and begin to recognise the commutativity that arrays demonstrate • use their conceptual understanding to solve word problems, explaining fluently which representation of multiplication they will use to solve the word problem. 		
Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> • Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. 	<ul style="list-style-type: none"> • Count in 2s • Count in 5s • Count in 10s • 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> • Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	<ul style="list-style-type: none"> • Make equal groups • Add equal groups • Make arrays • 	
<ul style="list-style-type: none"> • Year 1 Non-statutory guidance Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities. 	<ul style="list-style-type: none"> • Make doubles 	
<ul style="list-style-type: none"> • Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	<ul style="list-style-type: none"> • Solving word problems – multiplication – Power Maths 	

Year Group - Year 1	Term – Summer Block 2	Unit of Learning – Division
About the unit In this unit, children will develop their understanding of division. They will continue to develop their understanding of the concept of equal groups, represented in various concrete, pictorial and abstract ways, including the number line. The unit then looks at division in the context of sharing equally. Children will share a given number of objects equally across a given number of groups to find out how many are in each group. Children will be encouraged to make links between the two types of		Where the unit fits in – This unit builds on children’s work on multiplication in and focuses on the division of whole numbers. The following fractions unit will introduce children to halves and quarters.

division in order to strengthen their conceptual understanding. Finally, children will use their understanding of division to solve simple word problems. A secure understanding of equal groups and sharing, and the ability to apply it in more abstract contexts, will prepare children for more formal work on division later, and develop their multiplicative reasoning.		
Prior Learning – The children can – <ul style="list-style-type: none"> • can group objects into sets • can compare two numbers • recognise where groups are equal and unequal. 	Vocabulary <ul style="list-style-type: none"> • equal groups, same, different • share, sharing equally • fairly • total, altogether • each • division 	Resources <ul style="list-style-type: none"> •
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> • make a given number of equal groups from a given total • share a given total equally among a given number of groups • use concrete resources and pictures to represent their method of division and will be able to explain clearly, using the appropriate vocabulary, which type of division they have used • record both types of division using a number line. Children will use their conceptual understanding to solve word problems, explaining fluently what they have done. 		
Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> • Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	<ul style="list-style-type: none"> • Make equal groups – grouping (1) • Make equal groups – grouping (2) • Make equal groups – sharing (1) • Make equal groups – sharing (2) • Solving word problems – division – power Maths 	PowerPoint Presentation (whiterosemaths.com)

Year Group - Year 1	Term – Summer Block 3	Unit of Learning – Fractions
About the unit This unit is important as children will learn how to find halves and quarters of both shapes and groups of objects. It lays the foundations for later learning about fractions and therefore the foundations need to be secure.		Where the unit fits in – This unit builds on simple sharing completed in earlier units during the year. The unit focuses on strategies to find halves and quarters and ends on applying the skills learned to solve word problems. Following this unit, children will move on to learning about position and direction – including half and quarter turns.
Prior Learning – The children can – <ul style="list-style-type: none"> • can share objects into 2 groups • can share objects into 4 groups • know the importance of equal sharing 	Vocabulary <ul style="list-style-type: none"> • half, halves, quarter • equal • share, split 	Resources <ul style="list-style-type: none"> •

	<ul style="list-style-type: none"> part, whole 	
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> use efficient strategies to find halves and quarters of shapes and groups of objects find equal parts and they will know how the equal parts relate to the whole be able to work in reverse: being told what a quarter is and calculating what the whole would be use the correct vocabulary and reasoning when explaining their methods, particularly when solving word problems. 		
Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> Recognise, find and name a half as one of two equal parts of an object, shape or quantity 	<ul style="list-style-type: none"> Find a half (1) Find a half (2) 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. 	<ul style="list-style-type: none"> Find a quarter (1) Find a quarter (2) 	
<ul style="list-style-type: none"> Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. 	<ul style="list-style-type: none"> Solving word problems – halves and quarters – Power Maths 	

Year Group - Year 1	Term – Summer Block 4	Unit of Learning – Position and direction
About the unit This unit gives a practical application to children’s learning from the previous unit on fractions. They will learn to describe rotations as quarter, half, three-quarter and whole turns, and will combine turns with lateral movement to give and follow route instructions. Children will also learn to describe the position of an object in relation to other objects, using the words ‘above’, ‘below’, ‘left’, ‘right’ and ‘between’.		Where the unit fits in – In this unit, children will apply their knowledge of fractions to contextual and practical problems. Being able to identify and describe position and movement will help children to develop their spatial awareness and reasoning.
Prior Learning – The children can – <ul style="list-style-type: none"> can give and follow a simple series of instructions with two or three steps understand the concept of a whole, halves and quarters, especially in relation to a circle understand ‘turn’ as rotation around a point. 	Vocabulary <ul style="list-style-type: none"> turn, position, direction half turn, quarter turn, three-quarter turn, whole turn left, right, in between forwards, backwards above, below top, middle, bottom up, down 	Resources <ul style="list-style-type: none">
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> be able to describe the direction and fraction of a turn using the words ‘left’ and ‘right’, and ‘quarter’, ‘half’, ‘three-quarters’ and ‘whole’ identify and describe a route to a desired goal, and to give and follow a series of instructions describe the position of an object in relation to one or more other objects using the words ‘left’, ‘right’, ‘above’, ‘below’ and ‘between’. 		
Learning Objective	Small step progression	Possible teaching Activities

<ul style="list-style-type: none"> Describe position, direction and movement, including whole, half, quarter and three-quarter turns. 	<ul style="list-style-type: none"> Describe turns 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> Describe position, direction and movement, including whole, half, quarter and three-quarter turns. Year 1 Non-statutory guidance Pupils use the language of position, direction and motion, including: le and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside. 	<ul style="list-style-type: none"> Describe position (1) Describe position (2) 	

Year Group - Year 1	Term – Summer Block 5	Unit of Learning – Place value within 100
<p>About the unit</p> <p>In this unit, children will develop their understanding of, and ability to manipulate, numbers to 100. They will investigate patterns in 2-digit numbers, specifically 1 more and 1 less, and 10 more and 10 less, before moving on to partition numbers and identify the place value of digits within a number. Children will then use their knowledge and understanding of place value to first compare two 2-digit numbers, and then three or more numbers up to 100. Finally, children will explore number bonds to 100. Children will link number bonds to 100 with number bonds to 10, and this will develop a strong conceptual understanding of number bonds to 100 that children will take into their future mathematics. A secure understanding of 2-digit numbers will support children’s understanding of, and ability to work with, numbers and the number system.</p>		<p>Where the unit fits in –</p> <p>This unit builds on children’s previous number work, in particular Numbers to 50 and Addition and subtraction within 10 (1), in which they explored number bonds to 10. This unit focuses on the structure of 2-digit numbers and number bonds to 100.</p>
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> recognise and can use ten frames recognise and can use different representations of 10 and 1 can count forwards and backwards in 10s and 1s from 0. 	<p>Vocabulary</p> <ul style="list-style-type: none"> 100 square, number square place value grid pattern, same, different less than, fewer, smaller, less, equal to, (=) greatest, biggest fewest, smallest tens, ones, place value, partition how many?, count number bonds 	<p>Resources</p> <ul style="list-style-type: none">
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> able to confidently count forwards and backwards, to and from 100 confidently discuss the patterns found when counting in 10s and 1s, and show them using multiple representations partition 2-digit numbers using concrete resources, the part-whole model and the place value grid show understanding of the place value of each digit in a number and use this to fluently compare and order numbers find and use number bonds to 100, using their knowledge of number bonds to 10 to help them 		

Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number 	<ul style="list-style-type: none"> Counting backwards and forwards within 100 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Partitioning numbers Comparing numbers (1) Comparing numbers (2) Ordering numbers One more one less 	

Year Group - Year 1	Term – Summer Block 6	Unit of Learning – Money
About the unit This unit focuses on recognising coins and banknotes, and understanding their relative and absolute values. This work has obvious practical significance, in that it is clearly important that children develop familiarity with money in a range of everyday settings. Less obvious is the importance of money as a context for developing fundamental ideas about measurement – the value of a coin or note depends on both the numerical value assigned to it, and the unit (pounds or pence) that is involved. There is also a degree of abstraction involved; notes and coins are compared according to an assigned value, rather than any inherent property such as size or weight		Where the unit fits in – This unit builds on previous learning with a focus on unitising and counting is 2, 5 and 10.
Prior Learning – The children can – <ul style="list-style-type: none"> can read, write and understand whole numbers to 100 know that money is used to buy things, and that it is measured in pounds and pence/pennies can count in 1s, 2s, 5s and 10s (with or without support number lines) can compare values using the signs and <, >, = 	Vocabulary <ul style="list-style-type: none"> pound, penny, pennies, pence coins, notes, banknotes £, p greater than, less than, equal, total, altogether <, >, and =, greater than, less than value, worth 	Resources <ul style="list-style-type: none">
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> recognise real coins and banknotes and know their value find the total value of a small set of coins or banknotes (counting in 2s, 5s and 10s where appropriate) compare the value of two sets of coins or notes know that there are a limited number of denominations for coins and notes 		
Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes 	<ul style="list-style-type: none"> Recognise coins Recognise notes 	PowerPoint Presentation (whiterosemaths.com)

<ul style="list-style-type: none"> • Recognise and know the value of different denominations of coins and notes. • Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s 	Count in coins	
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Year Group - Year 1	Term – Summer Block 6	Unit of Learning – Time
<p>About the unit This unit introduces children to various aspects of time. Children will develop their ability to tell the time by reading an analogue clock or watch, estimating and comparing durations, and carrying out simple calculations involving time. All of these skills have real practical importance in daily life. Despite the popularity of digital displays, the ability to read time ‘at a glance’ from an analogue display remains a vital skill for children to learn. In this unit, children strengthen their understanding of the hands of a clock, including the second hand. Children will develop their understanding of units of measurement of time (hours, minutes and seconds). They will use the following vocabulary to develop their understanding of durations of time and the ordering of events in time: ‘before’, ‘after’, ‘yesterday’, ‘today’, ‘tomorrow’, ‘day’, ‘week’, ‘date’, ‘month’, ‘year’, ‘calendar’, ‘faster or slower’, ‘longer or shorter’ and ‘earlier or later’</p>		<p>Where the unit fits in – This unit builds on, and formalises, children’s experiences of using various measurements of time in daily life, as well as their prior experience with numbers, calculations, and problem solving. This unit also build on the learning completed in the Fractions unit.</p>
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> • recognise a clock face and a calendar, and understand that they are used to tell the time and day or date, respectively • can carry out simple addition and subtraction calculations • can use real-world knowledge and experience to sequence events 	<p>Vocabulary</p> <ul style="list-style-type: none"> • before, after • faster, slower, shorter, longer, earlier, later • yesterday, today, tomorrow • day, week, month, year • Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday • calendar, date • minute hand, hour hand, second hand • o’clock, half past • second, minute, hour 	<p>Resources</p> <ul style="list-style-type: none"> •
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> • work confidently within simple situations involving time, including understanding clocks and calendars • tell the time to the hour using an analogue clock or watch • draw the time to the hour • tell the time to the half hour using an analogue clock or watch • draw the time to the half hour • order and estimate the duration of familiar events • solve simple problems involving various units of time. 		
Learning Objective	Small step progression	Possible teaching Activities

<ul style="list-style-type: none"> Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening). 	<ul style="list-style-type: none"> Before and after 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> Recognise and use language relating to dates, including days of the week, weeks, months and years. 	<ul style="list-style-type: none"> Dates 	
<ul style="list-style-type: none"> Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 	<ul style="list-style-type: none"> Time to the hour Time to the half hour 	
<ul style="list-style-type: none"> Measure and begin to record the following: time (hours, minutes, seconds). 	<ul style="list-style-type: none"> Writing time 	
<ul style="list-style-type: none"> Compare, describe and solve practical problems for: time (for example, faster, slower, earlier, later). 	<ul style="list-style-type: none"> Comparing time 	
<ul style="list-style-type: none"> Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$. • Compare, describe and solve practical problems for: time (for example, faster, slower, earlier, later) 	<ul style="list-style-type: none"> Solve word problems – Power Maths 	

Mathematics Medium-term Plan – Year2

AUTUMN TERM

Year Group - Year 2	Term – Autumn – Block 1	Unit of Learning – Place value to 100
About the unit This unit focuses on children's ability to read and understand numbers to 100. They will use their growing understanding of place value to help them sort, compare and order numbers. Within this unit, children will revise their understanding of different representations of numbers and also meet other representations for the first time. They will use these representations to show a number's 'tens' and 'ones' and use this to help them compare and order. Children will use part-whole models and place value grids to show their partitioning of numbers and use these to support their reasoning when comparing and ordering.		Where the unit fits in – Block 1: Numbers to 100 Block 2: Addition and Subtraction (1)
Prior Learning – The children can – <ul style="list-style-type: none"> • Before they start this unit, it is expected that children: <ul style="list-style-type: none"> • know how to group objects into groups of ten • count up and back in ones 	Vocabulary <ul style="list-style-type: none"> • less than, fewer, smaller, less, fewest, smallest , (<) • equal to, (=) • greatest, biggest , (>) • tens, ones • how many? • count, partition place value grid, part-whole model 	Resources <ul style="list-style-type: none"> • Part whole model • Number line • Place value grid • Counters, cubes, Dienes
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> • confidently partition any 2-digit number in different ways • be able to recognise how many tens and ones make up any given 2-digit number • use multiple concrete, pictorial and abstract representations of numbers, such as place value grids and part-whole models, to support their reasoning and justification of their ideas. 		
Learning Objective	Small step progression	Possible teaching Activities
*Read and write numbers from 1 to 20 in numerals and words (Y1) *Read and write numbers to at least 100 in numerals	<ul style="list-style-type: none"> • Counting forwards and backwards within 20 	Y2 Autumn Block 1 SOL Place value.pdf (whiterosemaths.com)
*Read and write numbers to at least 100 in numerals and in words *Identify, represent and estimate numbers using different representations, including the number line	<ul style="list-style-type: none"> • Count objects to 100 by making 10s • Recognise tens and ones 	
*Identify, represent and estimate numbers using different representations, including the number line	<ul style="list-style-type: none"> • Use a place value chart • Partition numbers to 100 	
*Recognise the place value of each digit in a 2-digit number (tens, ones)	<ul style="list-style-type: none"> • Write numbers to 100 in expanded form 	

*Count in steps of 2, 3 and 5 from 0 and in 10s from any number, forward and backward	<ul style="list-style-type: none"> • 10s on the number line to 100 	
*Identify, represent and estimate numbers using different representations, including the number line	<ul style="list-style-type: none"> • 10s and 1s on the number line to 100 • Estimate numbers on a number line 	
*Recognise the place value of each digit in a 2-digit number (tens, ones)	<ul style="list-style-type: none"> • Compare objects 	
*Compare and order numbers from 0 up to 100; use <, > and = signs	<ul style="list-style-type: none"> • Compare numbers • Order objects and numbers 	

Year Group - Year 2	Term – Autumn – Block 2	Unit of Learning – Addition and subtraction 1
<p>About the unit – MOVED FROM THE SPRING TERM TO START IN THE AUTUMN TERM</p> <p>In this unit, children will build upon the number bonds to 10 that they will have learned in Year 1. Children consolidate this understanding and apply it to number bonds within 20 and to 20 in this unit. Children are introduced to writing fact families of equations, and to relating addition and subtraction operations. As a result, children learn to use the inverse of one operation to check calculations using the other operation. Children will also be introduced to the concept of 'make 10' to aid mental calculations.</p> <p>This unit then provides an opportunity for what they have understood to be applied to larger numbers. Children must understand this progression and see the importance of applying this learning, rather than seeing larger numbers as a different area of maths and therefore using inefficient methods as a result. Within this unit children will progress to addition and subtraction involving two 2-digit numbers, again representing the steps within these calculations visually with different resources. Children continue to use known number facts within mental calculations and use their understanding of the inverse as a way to check their calculations. The final stage of children's learning allows the bar model to be used to represent a word problem, to allow children to self-identify the operation needed to complete the calculation.</p>		<p>Where the unit fits in –</p> <p>This unit builds on the previous unit and applies children's place value understanding to addition and subtraction problems.</p>
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> • know how to partition 2-digit numbers into tens and ones and place these onto a place value grid • understand the value of each digit within a 2-digit number and how these will change as a result of addition and subtraction • know number bonds within 10 and 20 and how to apply these to mental addition and subtraction calculations 	<p>Vocabulary</p> <ul style="list-style-type: none"> • part, whole and part-whole • add, added, plus, total, altogether, sum, calculation, (+) count, count on, • subtract, take away, minus, count back, left (–) • exchange, compare, greater than, less than, more, less, (>), (<) • ones, tens, 10 more, 10 less, place value, column, 1-digit number, 2-digit number • number sentence, number bonds, known fact, fact family 	<p>Resources</p> <ul style="list-style-type: none"> •
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> • relate each number in a calculation to what it represents within a context • be fluent at recalling and applying their number bonds within 20 to addition and subtraction equations • differentiate between addition and subtraction problems • understand how to represent the numbers provided within the context in different ways, using different resources • be flexible with the methods they can use to calculate different problems depending on their complexity in order to work efficiently 		
Learning Objective	Small step progression	Possible teaching Activities

*Represent and use number bonds and related subtraction facts within 20 (Y1) *Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	<ul style="list-style-type: none"> • Bonds to 10 • Addition and subtraction bonds within 20 	Maths resources for teachers White Rose Maths
*Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	<ul style="list-style-type: none"> • Related facts • Bonds to 100 (tens) 	
*Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a 2-digit number and 1s, a 2-digit number and 10s, two 2-digit numbers and adding three 1-digit numbers	<ul style="list-style-type: none"> • Add ones – not across a 10 • Add tens • Add two 2 digit numbers – not across a 10 	
	<ul style="list-style-type: none"> • Subtract ones – not across a 10 • Subtract tens • Subtract two 2 digit numbers not across a 10 	
	<ul style="list-style-type: none"> • Mixed addition and subtraction 	
	<ul style="list-style-type: none"> • Addition with exchange 	
	<ul style="list-style-type: none"> • Subtraction with exchange 	
<ul style="list-style-type: none"> • Compare number sentences • Missing number problems 		

Year Group - Year 2	Term – Autumn Block 3	Unit of Learning – Multiplication
<p>About the unit This unit focuses on multiplication in the context of skip counting, equal groups, times-tables, multiplication sentences and scaling problems. It is an essential basis for children understanding the times-tables and what x means. Within this unit, children will gain a solid grounding in equal groups and what this means, as well as how to recognise any groups that are not equal. This is the first big idea relating to multiplication and it is essential knowledge before moving through the rest of the lessons. Children will be introduced to arrays as a representation of multiplication, which will help highlight the commutative properties of multiplication. Throughout this unit, repeated addition sentences will appear alongside multiplication sentences so that children have a reference to help them understand what x means in context. As well as calculating different multiplication sentences using equal groups, number lines and arrays, this unit introduces an equal parts bar model. This may be more challenging for children to understand as they have to count the number of equal parts. There is also a lesson on word problems and language such as 'times bigger' or 'twice as many' is used.</p>		<p>Where the unit fits in – In this unit, the pupils will look at a number of important multiplication methods and skills, and will gain a more solid understanding of equal groups. Pupils will continue to expand their knowledge of multiplication in the next block on 'Money' and following that 'Division'</p>
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> • jump forward on a number line • understand how to skip count using a resource, such as a number line or 100 square • know what odd and even numbers are 	<p>Vocabulary</p> <ul style="list-style-type: none"> • equal groups repeated addition skip counting • number in a group number of groups • times times-table multiply/multiplication (x) more than, less than (< and >) • array rows/columns 	<p>Resources</p> <ul style="list-style-type: none"> • Number lines • Bar models • Arrays • Counters, cubes

	<ul style="list-style-type: none"> • bar model equal parts number of equal parts • times bigger/times taller/ times greater twice as big • factor, product • commutative 	
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> • Understand that the different parts of a multiplication sentence represent the number in a group and the number of groups and they will be able to apply this in different contexts • know that no matter which way round the numbers go in a multiplication sentence, the total will still be the same • be able to skip count the rows or the columns in an array rather than counting individual objects • understand that 'twice as many' and '2 times bigger' are the same as multiplying by two. 		
Learning Objective	Small steps progression	Possible teaching Activities
<ul style="list-style-type: none"> • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers 	<ul style="list-style-type: none"> • Recognise equal groups • Make equal groups • Add equal groups 	Year-2-Spring-block-1-Multiplication-and-Division.pdf (whiterosemaths.com)
<ul style="list-style-type: none"> • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs • show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot 	<ul style="list-style-type: none"> • Multiplication sentences with the x symbol • Multiplication sentences from pictures 	
<ul style="list-style-type: none"> • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	<ul style="list-style-type: none"> • Use arrays • Make doubles 	
<ul style="list-style-type: none"> • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers 	<ul style="list-style-type: none"> • 2 x table • 5 x table 	
<ul style="list-style-type: none"> • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	<ul style="list-style-type: none"> • 10 x table 	

Year Group - Year 2	Term – Spring Block 1	Unit of Learning – Statistics
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About the unit This is the first time children will have been introduced to statistics. The unit shows children how data can be collected effectively and then represented in a number of different ways. The unit will require children to use a range of different skills such as calculating and problem solving. These are great ways to consolidate prior learning. Children will be introduced to several different representations in the form of charts and diagrams and to some new mathematical language.		Where the unit fits in – In this unit, pupils will build on their learning from a number of previous units. To interpret charts and diagrams, children must use their knowledge of addition and subtraction, counting and multiplication involving 2s, 5s and 10s. They will be introduced to symbols representing one or more pieces of data and to tally marks which they will need to be able to count. Finally, previous units on problem solving will need to be called upon. Following this unit, children will go on to learn about money and will continue to build on these skills and knowledge.	
Prior Learning – The children can – <ul style="list-style-type: none"> • can count in 2s, 5s and 10s • can add and subtract 2-digit numbers • can compare numbers to 100 • understand the language associated with problem solving. 		Vocabulary <ul style="list-style-type: none"> • tally chart, tally pictogram block diagram table more, less, most, least favourite, popular equal represent, symbol, key, information total, altogether compare 	
Resources <ul style="list-style-type: none"> • 			
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> • Be able to read charts and diagrams with ease and come to accurate conclusions • confidently explain their methodology as well as their answer • independently collect data, construct an appropriate chart or diagram and then interpret it (writing down useful statements using the correct terminology) • solve problems and puzzles efficiently 			
Learning Objective		Small step progression	
		<ul style="list-style-type: none"> • Make tally charts 	
		<ul style="list-style-type: none"> • Draw pictograms (1-1) 	
		<ul style="list-style-type: none"> • Interpret pictograms (1-1) 	
		<ul style="list-style-type: none"> • Draw pictograms (2,5,10) 	
		<ul style="list-style-type: none"> • Interpret pictograms (2,5,10) 	
		<ul style="list-style-type: none"> • Block diagrams 	
Possible teaching Activities			
Year-2-Spring-block-2-Statistics.pdf (whiterosemaths.com)			

Year Group - Year 2		Term – Spring Block 2		Unit of Learning – Money	
About the unit This unit builds upon children's learning in year 1 and the learning completed in the previous block on multiplication. There is a lot of focus within the unit on addition and subtraction of money using part-whole models and bar models, in addition to counting methods –enabling children to find the most efficient strategies, such as counting on from the coin or note of highest value to find the total. Children work with pounds, pence and notes, and towards the end of the unit they will work with pounds and pence together.			Where the unit fits in – This unit builds upon basic money work children completed in year 1 and the learning completed in the previous block using skip counting. It also reinforces children's counting skills, as well as addition and subtraction strategies. In this unit, children focus on coins and notes and cover the following topics: calculating total amounts, finding change and word problems. Following this unit, children will move on to learning methods of dividing numbers.		
Prior Learning – The children can – <ul style="list-style-type: none"> • can count in 2s, 5s and 10s 		Vocabulary <ul style="list-style-type: none"> • money, coins, notes 		Resources	

<ul style="list-style-type: none"> • have a basic understanding of the value of coins • can use addition and subtraction strategies in context • know how to count on a number line and use the part-whole and bar model • can skip count in 2,5 and 10 	<ul style="list-style-type: none"> • pounds (£), pence (p) • change, left , right, money, buy(s), spend, step • how much?, value, amount, total, altogether, parts, between, difference • count on, sort, match, compare, add, addition, calculate, • subtraction • great(er/est), smallest, exact(ly), higher, lower, most, least • more than (>), less than (<), equal (=) • part-whole model, number line, bar model 	
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Assessment (By the end of this unit the children will be able to...)

Learning Objective	Small step progression	Possible teaching activities
<ul style="list-style-type: none"> • recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 	<ul style="list-style-type: none"> • Recognise coins • Recognise notes • Count money - pence • Count money – pounds (notes and coins) • Count money – notes and coins • Select money 	PowerPoint Presentation (whiterosemaths.com)
<ul style="list-style-type: none"> • find different combinations of coins that equal the same amounts of money 	<ul style="list-style-type: none"> • Make the same amount 	
<ul style="list-style-type: none"> • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 	<ul style="list-style-type: none"> • Compare money • Find the total • Find change • Word problems 	

Year Group - Year 2	Term – Spring Block 3	Unit of Learning – Division
<p>About the unit</p> <p>This unit focuses on two methods of division (grouping and sharing), and how to calculate using these two different strategies. Children will be introduced to the division sign (\div). Children will learn the importance of equal groups when dividing, and how to distinguish between the number of equal groups and the number in one group. Children will be introduced to the bar model to represent both grouping and sharing problems. Within this unit, children will also make the link between division and multiplication facts. They will be asked to match a multiplication sentence to the inverse division sentence, and to work out missing numbers based on facts from one</p>	<p>Where the unit fits in –</p> <p>This unit builds on equal groups as a key idea in multiplication and division. Children have been exposed to repeated addition as a strategy for multiplication and will apply this knowledge to use repeated subtraction as a strategy for division. Unit 6 looks at division facts within the context of other multiplication facts that have been learned previously. The primary method that we are looking at is sharing and most examples are sharing, however we want children to see the difference between sharing and grouping. It is important that teachers discuss this difference with children.</p>	

<p>of the operations. Children will use a 100 square to spot patterns for numbers that can be divided by 2, 5 and 10. They will make generalisations between different division facts and fact families, for example, all numbers that can be divided by 5 end in 0 or 5. Children will also build on their knowledge of dividing by 2 to explore what it means for a number to be even and odd. They will start to recognise when numbers are odd by considering the ones digit.</p>		
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> know how to count backwards in equal groups on a number line understand how to use an array for multiplication (or repeated addition) 	<p>Vocabulary</p> <ul style="list-style-type: none"> divide, division, the division sign (\div) share group odd, even times-tables equal groups, number of equal groups 	<p>Resources</p> <ul style="list-style-type: none">
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> Children who have mastered this unit will be able to use a range of strategies for working out a division sentence. They will know when to apply a particular strategy based on the numbers in the division sentence. Children will be confident counting backwards on a number line, sharing into equal groups, grouping a number into equal groups, and using a bar model to represent a problem. Importantly, children will also recognise when they do not need to calculate a division fact because they already know a multiplication fact that can help them. 		
<p>Learning Objective</p>	<p>Small step progression</p>	<p>Learning Outcomes</p>
<ul style="list-style-type: none"> Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs. 	<ul style="list-style-type: none"> Making equal groups Sharing and grouping 	<p>Year-2-Spring-block-1-Multiplication-and-Division.pdf (whiterosemaths.com)</p>
<ul style="list-style-type: none"> Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. 	<ul style="list-style-type: none"> Dividing by 2 Odd and even numbers Dividing by 5 Dividing by 10 	
<ul style="list-style-type: none"> Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. 	<ul style="list-style-type: none"> Bar modelling – grouping Bar modelling – sharing Solving word problems - division 	

<p>About the unit</p> <p>This unit introduces fractions for the first time. It builds on children's knowledge of equal parts, which they have come across in previous units about multiplication and division. This unit also exposes children to equal parts in a range of contexts, including shape, numbers, measurements and money. Within this unit, children will be introduced to fraction specific key language such as numerator and denominator and will be able to explain what each word means in context. At first, children will deal with unit fractions where the numerator is always one, focusing on halves, thirds and quarters. Children will then move onto non-unit fractions and learn about the equivalence between them, particularly between $\frac{1}{2}$ and $\frac{2}{4}$. Children will practise counting up in quarters and halves on a number line, including crossing through whole number barriers.</p>		<p>Where the unit fits in –</p> <p>This unit builds on children's knowledge of sharing and grouping in division, asking children to divide a whole into equal parts and learn that the equal parts have given names. Children also learn to halve shapes by folding them or cutting them in two. Children can find a fraction of an amount using the previous strategy of sharing objects into equal groups but can now name these parts, such as by saying that $\frac{1}{2}$ of 6 is 3.</p>	
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> • know how to split an amount into equal parts by sharing or grouping • understand that the same whole can have a different number of equal parts (building upon Unit 6) • know what \div means. 	<p>Vocabulary</p> <ul style="list-style-type: none"> • fraction • half ($\frac{1}{2}$), quarter ($\frac{1}{4}$), third ($\frac{1}{3}$) • whole part, equal part • numerator, denominator • division bar • unit fraction, non-unit fraction • equivalent • three-quarters ($\frac{3}{4}$) • equal divided by (\div) • odd, even • share, split • pattern 	<p>Resources</p> <p>part-whole model, bar model, objects, strips of paper, arrays</p>	
<p>Assessment (By the end of this unit the children will be able to...)</p> <p>Children who have mastered this unit will be able to explain what each part of a fraction represents. Children will be able to relate fractions to different contexts where there are equal parts and will be able to find a unit and non-unit fraction of a number, shape, measurement or time. Children will be able to recognise equivalent fractions and explain the relationship between the numerator and denominator in equivalent fractions. Children will also be able to work out a whole from a non-unit fraction using a bar model.</p>			
<p>Learning Objective</p>	<p>Small step progression</p>	<p>Possible teaching Activities</p>	
<ul style="list-style-type: none"> • recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity • write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 	<ul style="list-style-type: none"> • Make equal parts • Recognise a half • Find a half • Recognise a quarter • Find a quarter • Recognise a third • Find a third • Unit fractions • Non-unit fractions • Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ 	<p>Year-2-Spring-block-4-Fractions.pdf (whiterosemaths.com)</p>	

	<ul style="list-style-type: none"> • Find 3/4 • Count in fractions 	
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Year Group - Year 2	Term – Spring Block 5	<ul style="list-style-type: none"> • Unit of Learning – Measurement – Height and length
About the unit Length and height are familiar and useful ideas from daily life. Children will probably take an interest in measuring their own height and making comparisons with others' heights, and this can easily be extended to looking at heights and lengths more generally. This work also makes use of simple standard units and scales; reading a simple scale accurately is an important skill which will be useful in a wide range of settings.		Where the unit fits in –
Prior Learning – The children can – <ul style="list-style-type: none"> • have at least an informal understanding of the ideas of length and height • can accurately manipulate simple apparatus such as multilink cubes, rulers and metre sticks and are familiar with some of the basic vocabulary that will be needed, such as 'how long?' and 'how high?' 	Vocabulary <ul style="list-style-type: none"> • length, height width, distance • long, longer, short, shorter , tall • metres (m), centimetres (cm) • order, compare • ruler, metre stick measure zero • greater than (>) less than (<) equal to (=) 	Resources <ul style="list-style-type: none"> •
Assessment (By the end of this unit the children will be able to...) <ul style="list-style-type: none"> • estimate, measure and compare the lengths or heights of a range of objects, using simple measuring equipment, such as rulers, metre sticks and tape measures, and appropriate standard units (centimetres or metres) • be aware of some of the common practical difficulties that arise when measuring, such as not starting at zero when using a ruler, or failing to deal with flexible objects consistently, and will know how to avoid these difficulties. 		
Learning Objective	Small step progression	Possible teaching Activities
Compare and order lengths, mass, volume/capacity and record the results using >, < and = .	Compare lengths and heights	PowerPoint Presentation (whiterosemaths.com)
Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.	Measure lengths (1)	
	Measure lengths (2)	
	Measure length (cm)	
	Measure length (m)	
Compare and order lengths, mass, volume/capacity and record the results using >, < and = .	Compare lengths	
	Order lengths	
Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures.	Four operations with lengths	

Year Group - Year 2	Term – Spring Block 6	<ul style="list-style-type: none"> Unit of Learning – Measurement – Mass, Capacity and Temperature
<p>About the unit This unit focuses on children accurately measuring mass, volume, capacity and temperature. It is the first time that children have been introduced to the standard units for these measures. Within this unit, children are also introduced to making chains of linked reasoning about measures, and they get the opportunity to apply their ordering, comparing and estimating skills to a different area of maths. Children are also introduced to the use of different scales (such as scales that increase in 2s, 5s and 10s) and how to work out the value of each increment on the scale. This is important as it provides children with the skills they need in order to use a wide range of scales on different measuring equipment in day-to-day life.</p>		<p>Where the unit fits in – This unit builds upon the previous work children have done on mass, volume and capacity in Year 1, and the work using standard units of measure for length and height in Year 2. It also builds upon children’s ability to count in steps of 2, 5 and 10 covered in Year 2. This unit also develops the reasoning skills that children have acquired throughout the year.</p>
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> know how to count in steps of 2, 5 and 10 understand the concept of measuring mass, capacity and volume using non-standard units know how to read basic scales. 	<p>Vocabulary</p> <ul style="list-style-type: none"> balance, comparing, estimating, reasoning, accurately, total, scale, interval 100s, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1,000 mass, weight, grams (g), kilograms (kg), kilos volume, capacity, millilitres (ml), litres (l) temperature, thermometer, degrees Celsius (°C) more than, (>), less than (<), identical (=), divide (÷) heavier, heaviest, lighter, lightest greater, greatest, least, smaller, smallest, full, half, three/quarters, quarter, nearest to, X times as much hotter, hottest, warmer, warmest, colder, coldest, cooler, coolest 	<p>Resources</p> <ul style="list-style-type: none">
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> use the standard units of g, kg, ml, l and °C to measure and solve problems relating to mass, volume, capacity and temperature order and compare using each type of measure make sensible approximations as to the mass, volume, capacity or temperature of different objects or real-life situations reason using measures, including making chains of connected reasoning when ordering and comparing measures. 		
Learning Objective	Small step progression	Possible teaching Activities
<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit – using rulers, scales, thermometers and measuring vessels. 	<p>Introduce weight and mass</p> <p>Measure mass</p>	<p>PowerPoint Presentation (whiterosemaths.com)</p>

<ul style="list-style-type: none"> Compare and order lengths, mass, volume/capacity and record the results using >, < and = 	Compare mass	
<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit – using rulers, scales, thermometers and measuring vessels. 	Measure mass in grams Measure mass in kilograms	
<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and =. 	Introduce capacity and volume Measure capacity Compare volume	
<ul style="list-style-type: none"> Children can explain and demonstrate different ways in which they can accurately measure capacity and volume using the standard unit of measure of millilitres and its associated symbol (ml). 	Millilitres Litres	
<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. 	Temperature	

Year Group - Year 2	Term – Summer Block 1	Unit of Learning – Time
About the unit This unit will develop children’s ability to tell and write the time to five minutes, including quarter past and to the hour. Children will link intervals of time to the number line, and know the number of minutes in an hour, and hours in a day. Children will also use the number line to understand start and end times, and the interval of time between the two. Children will solve problems using these new concepts and previous learning, including word problems, and comparing and sequencing questions.		Where the unit fits in – This unit builds on the concepts of time learned in Year 1 and will draw on comparing and ordering skills, whilst linking to knowledge of the number line and part-whole model.
Prior Learning – The children can – <ul style="list-style-type: none"> can find o’clock and half-past times on an analogue clock 	Vocabulary <ul style="list-style-type: none"> hands, face, hour, minute, analogue 	Resources <ul style="list-style-type: none"> clock faces number lines

<ul style="list-style-type: none"> • can count forwards and backwards reliably in 5s up to 60 • recognise and understand the word 'quarter'. 	<ul style="list-style-type: none"> • o'clock, past, to, half past, quarter past, quarter to, quarter of an hour • almost, same, units, last, convert, how long, left, passed, shorter, longer, fastest, slowest time, start time, end time, duration, time taken, finish, forwards, backwards, twice 24 hour • day, daytime, night time, around the clock, • am, pm • midday, midnight, morning, afternoon 	<ul style="list-style-type: none"> •
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Assessment (By the end of this unit the children will be able to...)

- use the vocabulary 'past', 'to', 'o'clock', 'half past', 'quarter past' and 'quarter to'
- use start times and end times to identify durations of time, and be able to use these elements to confidently solve mathematical problems
- recognise that there are 24 hours in a day and be able to explain how these 24 hours are represented and shown on an analogue clock
- to read, write and show the time on a clock to five minutes
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Learning Objective	Possible teaching Activities	Learning Outcomes
Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times (year 1).	Telling time to the hour Telling time to the half hour O'clock and half past	PowerPoint Presentation (whiterosemaths.com)
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.	Quarter past – telling the time	
	Quarter past – writing the time	
	Quarter to – telling the time	
	Quarter to – writing the time	
	Telling time to 5 minutes	
Know the number of minutes in an hour and the number of hours in a day.	Hours and days	
Compare and sequence intervals of time.	Find durations of time	
	Compare durations of time	

Year Group - Year 2	Term – Summer Block 2	Unit of Learning – Geometry
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<p>About the unit</p> <p>This unit focuses on the properties of 2D and 3D shapes. Children will learn to describe and sort shapes based on the shapes' mathematical properties, using the correct terminology. Although this is the first unit covering geometry in Year 2, children have experience of recognising, naming, describing and sorting 2D and 3D shapes from Year 1.</p>	<p>Where the unit fits in –</p> <p>Children should already be able to recognise and name familiar 2D and 3D shapes. Children will be familiar with using the word 'face' to describe a flat surface of a 3D shape and they will be able to describe the shape of the faces. Children have also experienced identifying and describing repeating patterns using 2D and 3D shapes.</p>
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Children will also draw on their counting skills and their ability to compare and order numbers. In this unit, children will learn to describe and categorise shapes based on their number of sides, vertices, edges and faces.

<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> know how to distinguish between 2D and 3D shapes understand that shapes are categorised based on specific properties know the names of common 2D and 3D shapes and some of their properties. 	<p>Vocabulary</p> <ul style="list-style-type: none"> circle, semicircle oval, triangle, square, rectangle, quadrilateral polygon, pentagon, hexagon, octagon sphere, hemisphere cone, ovoid, cylinder triangle-based pyramid, square-based pyramid, pentagon-based pyramid, hexagon-based pyramid cube, cuboid triangular prism, pentagonal prism, hexagonal prism 2D, 3D properties side, vertex, vertices, edge, face pattern symmetry, symmetrical, line of symmetry curved surface 	<p>Resources</p> <ul style="list-style-type: none">
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Assessment (By the end of this unit the children will be able to...)

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Learning Objective	Possible teaching Activities	Learning Outcomes
Compare and sort common 2D and 3D shapes and everyday objects.	Recognise 2-D and 3-D shapes	Year-2-Spring-block-3-Shape.pdf (whiterosemaths.com)
	Count sides on 2-D shapes	
	Count vertices on 2-D shapes	
	Lines of symmetry	
	Sort 2-D shapes	
Order and arrange combinations of mathematical objects in patterns and sequences.	Make patterns with 2-D shapes	
Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.	Count faces on 3-D shapes	
	Count edges on 3-D shapes	
	Count vertices on 3-D shapes	
Order and arrange combinations of mathematical objects in patterns and sequences.	Make patterns with 3-D shapes	

Year Group - Year 2	Term – Summer Block 3	<ul style="list-style-type: none"> Unit of Learning – Position and direction
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<p>About the unit</p> <p>This unit focuses on describing position in relation to other objects, describing lateral and rotational movement and describing and completing repeating patterns.</p>	<p>Where the unit fits in –</p>
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<p>Children will apply their previous learning about fractions to describe degrees of turn and their knowledge of 2D shapes.</p> <p>This unit also helps children to develop their logical and computational thinking in order to follow and describe sequences relating to movement, which prepares them for the following unit.</p>		
<p>Prior Learning – The children can –</p> <ul style="list-style-type: none"> know how to describe the position of an object in relation to one or more other objects understand halves and quarters and the relationship between them know positional and directional language such as forwards, backwards, left, right, between, above, below. 	<p>Vocabulary</p> <ul style="list-style-type: none"> quarter turn, half turn, three-quarter turn, whole turn clockwise, anticlockwise forwards, backwards left, right up, down turn middle position pattern above, below top, bottom between 	<p>Resources</p> <ul style="list-style-type: none">
<p>Assessment (By the end of this unit the children will be able to...)</p> <ul style="list-style-type: none"> use correct mathematical language to describe position and lateral and rotational movement to follow a series of instructions related to movement plan a series of instructions to arrive at a desired goal 		
Learning Objective	Possible teaching Activities	Learning Outcomes
<ul style="list-style-type: none"> 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 anticlockwise). 	Describe position (1)	PowerPoint Presentation (whiterosemaths.com)
	Describe position (2)	
	Describe movement	
	Describe turns	
	Describe movement and turns	
<ul style="list-style-type: none"> 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 anticlockwise). Order and arrange combinations of mathematical objects in patterns and sequences. 	Making patterns with shapes	

Write numbers in words – Autumn – Through spelling across the year