Subject Curriculum Overview

Maths

Southwater Infant Academy

Planning and Progression

‘Growing, Learning and Succeeding Together’

Curriculum Statement

Intent
At The Southwater Infant Academy we strive to make maths fun, engaging and interesting for all children.
We intend to…

- Ensure that our children have access to a high-quality curriculum that is both challenging and enjoyable.
- Develop our children as mathematicians by providing a foundation for understanding the place of maths in the world, the ability to become fluent in the fundamentals of maths, reason and problem solve mathematically and to prepare for the wider world and future education.
- Ensure an inclusive ethos where all children know and believe that they can achieve in maths.
- Provide our children with a variety of mathematical opportunities, which will enable them to make the connections in learning needed to enjoy greater depth in learning.
- Ensure children are confident mathematicians who are not afraid to take risks.

Implementation

At The Southwater Infant Academy, we pride ourselves on a secure understanding of the mathematics curriculum and we use resources from the NCETM to support teacher subject knowledge and to guide us in executing mastery in maths teaching and learning opportunities. We are working closely with the Sussex Maths Hub and participating in their 'Primary Teaching for Mastery Work Group' to continue on our maths mastery journey. We believe that by implementing maths mastery teaching in our classrooms we will allow our children to acquire a deep and long-term understandings of maths that they can use in different real-life contexts. We provide opportunities for our children to become fluent in the fundamentals of mathematics, to reason mathematically in a range of situations and to develop skills in problem solving to prepare them for the wider world and later education.

A typical maths lesson will provide the opportunity for all children, regardless of their ability, to work-through Fluency, Reasoning and Problem Solving activities. The expectation is that the majority of children will move through the programmes of study at broadly the same pace. However, decisions about when to progress are based on the security of children's understanding and their readiness to progress to the next stage. Children who grasp concepts rapidly are challenged through being offered rich and sophisticated problems. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including additional practice, before moving on.

Mental mathematics is a key skill and we recognise that our children need to be fluent in the fundamentals of mathematics. We therefore ensure that accurate and rapid recall of fundamental facts are weaved through our school day, for example, times-table facts to support counting when lining up and

spending a short time teach day practising number bonds. We feel it is an important step to develop conceptual understanding by identifying patterns and relationships between these number facts, which will then further support our children in their procedural fluency development.

At The Southwater Infant Academy, there is a strong emphasis on developing rich number sense for our young children. This requires children to be provided with multiple opportunities to make sense of numbers through concrete, pictorial and abstract representations (CPA). Children are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.

Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

Pictorial – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

Abstract – with the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

Our children are provided with a variety of different resources to enable them to access their mathematic learning. These include Numicon, Dienes, Place Value Counters, 100 Squares and Number Lines. They are available for children to access independently and are accessible in every classroom.

Our aim in mathematics is for learning to have a purpose. We want our children to be able to apply the key skills of learning in a variety of practical concepts to give meaning to maths using real - life opportunities. We endeavour to provide this by creating as many purposeful maths opportunities within the classroom and within the wider environment. Cross curricular links are made wherever possible such as orienteering in geography to learn about position and turns and understanding of time through science learning on the seasons.

We also want our parents to be involved with their children's learning. We provide fortnightly maths challenges for children to complete at home in all year groups and ensure the fundamental number facts for each year group are communicated to parents in order for the children to continue their practise at home. We support parents by providing workshops and demonstrate how maths is taught and ways they can support their child's learning at home.

Impact

Children enjoy maths at The Southwater Infant Academy. Through rich learning opportunities children acquire the knowledge and skills required to develop as mathematicians. They use our learning powers and are resilient, creative and reflective learners, working cooperatively with their peers. They talk enthusiastically and confidently about their learning. All learners make good progress from their starting points. They are able to solve problems in a range of contexts and reason mathematically.

Maths Curriculum Long Term Plan

Year 1 overview														
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn	Spine 1: Number, Addition and Subtraction Topic 1:1 Comparison of quantities and measures			Spine 1: Number, Addition and Subtraction Topic 1:2 Introducing 'Whole' and 'parts': Part-part-whole		Spine 1: Number, Addition and Subtraction Topic 1.3 Composition of numbers: 0 – 5			Spine 1: Number, Addition and Subtraction Topic 1.4 Composition of numbers: 6 - 10	Geometry: Recognise, compose, decompose and manipulate 2D and 3D shapes			**Measurement:** Mass	Consolidation
Spring	Spine 1: Number, Addition and Subtraction Topic 1:5 Additive structures: Aggregation and partitioning		Spine 1: Number, Addition and Subtraction Topic 1:6 Additive structures: Introduction to augmentation and reduction		Spine 1: Number, Addition and Subtraction Topic 1:7 Addition and subtraction: strategies within 10			Spine 1: Number, Addition and Subtraction Topic 1:8 Composition of numbers: multiples of 10 up to 100		Spine 1: Number, Addition and Subtraction Topic 1:9 Composition of numbers: 20 - 100		**Measurement:** Length and height		

Summer	Spine 1: Number, Addition and Subtraction Topic 1:10 Composition of numbers: 11 – 19	Spine 2: Multiplication and Division Topic 2:1 Counting, unitising and coins	Spine 3: Fractions Topic 3:0 Fractions	Geometry: **Position and direction** Unit 10 – 1 week	**Measurement:** Time Unit 11 – 2 weeks	**Measurement:** Capacity	

Year 2														
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn 14 weeks	Spine 1: Number, Addition and Subtraction Topic 1.8 Revision of year 1 place value in topics 1.8 – 1.10		Spine 1: Number, Addition and Subtraction Topic 1.11 Addition and Subtraction Bridging 10		Spine 1: Number, Addition and Subtraction Topic 1.12 Subtraction as difference		Measurement: Time	Spine 2: Multiplication and Division Topic 2.2 Multiplication representing equal groups		Spine 2: Multiplication and Division Topic 2.3,4 Times Tables groups 2, 5, 10 and commutativity		Geometry		Consolidation
Spring 12 weeks	Spine 1: Number, Addition and Subtraction Topic 1.13 Addition and subtraction of two-digit and single – digit numbers		Spine 1: Number, Addition and Subtraction Topic 1:14 Addition and subtraction of two-digit numbers and multiples of ten		Money	Spine 1: Number, Addition and Subtraction Topic 1.15 Adding and Subtracting two-digit numbers using money		Spine 2: Multiplication and Division Topic 2.5 Commutativity, doubling and halving	Spine 2: Multiplication and Division Topic 2.6 Structures: quotative and partitive division		Spine 3: Fractions Topic 3 Fractions			
Summer 13 Weeks	Statistics	Measure	Consolidation	Consolidation	SATS	SATS	Problem solving using money	2D/3D Shape and patterns	Graphs and Charts	Measure	Estimation	Problem solving challenges	Problem solving challenges	

Mastering Number Fluency Objectives

Reception Overview

Term 1	Term 2	Term 3
Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison. **Pupils will:** • identify when a set can be subitised and when counting is needed • subitise different arrangements, both unstructured and structured, including using the Hungarian number frame • make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills • spot smaller numbers 'hiding' inside larger numbers	Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals. **Pupils will:** • continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals • begin to identify missing parts for numbers within 5 • explore the structure of the numbers 6 and 7 as '5 and a bit' and connect this to finger patterns and the Hungarian number frame • focus on equal and unequal groups when comparing numbers	Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice. **Pupils will:** • continue to develop their counting skills, counting larger sets as well as counting actions and sounds • explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame • compare quantities and numbers, including sets of objects which have different attributes • continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2
• connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers • hear and join in with the counting sequence, and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous	• understand that two equal groups can be called a 'double' and connect this to finger patterns • sort odd and even numbers according to their 'shape' • continue to develop their understanding of the counting sequence and link	• begin to generalise about 'one more than' and 'one less than' numbers within 10 • continue to identify when sets can be subitised and when counting is necessary • develop conceptual subitising skills

Year 1 Overview

Term 1	Term 2	Term 3
Pupils will have an opportunity to consolidate the Early Learning Goals and continue to explore the composition of numbers within 10, and the position of these numbers in the linear number	Pupils will continue to explore the composition of numbers within 10 and explore addition and subtraction structures and the related language (without the use of symbols)	Pupils will explore the composition of numbers within 20 and their position in the linear number system. They will connect addition and subtraction expressions and equations to

• explore the structure of even numbers (including that even numbers can be composed by doubling any number, and can be composed of 2s) • explore the structure of the odd numbers as being composed of 2s and 1 more	• explore the aggregation and partitioning structures of addition and subtraction through systematically partitioning and re-combining numbers within 10 and connecting this to the part-part-whole diagram, including using the language of parts and wholes	• practise retrieving previously taught facts and reason about these
• explore the composition of each of the numbers 6, 8, and 10	• explore the augmentation and reduction structures of addition and reduction	

Year 2 Overview

Term 1	Term 2	Term 3
Pupils will have an opportunity to consolidate their understanding and recall of number bonds within 10; they will re-cap the composition of the numbers 11 to 20 and reason about their position	Pupils will have an opportunity to use their knowledge of the composition of numbers within 10 to calculate within 20; they will explore the links between the numbers in the linear number	Pupils will have further opportunities to use their knowledge of the composition of numbers within 10 to calculate within 20 and to reason about equations and inequalities.

• consolidate their understanding of the numbers 10 and 20 as '10 and a bit' • consolidate their understanding of the linear number system to 20 and reason about midpoints	• use their knowledge of bonds of 10 to find three addends that sum to 10 • use their knowledge of the composition of numbers within 20 to add and subtract across the 10-boundary • use their understanding of the linear number system to 10 to position	• consolidate previously taught facts and strategies through continued, varied practice

Progression of Skills and Knowledge

Essential Characteristics
By the end of Key Stage One a successful mathematician will have… • An understanding of the important concepts and an ability to make connections within mathematics • The ability to use concrete resources and pictorial representations to solve problems when needed. • •A range of skills in using and applying mathematics. • Fluent knowledge and recall of number facts and the number system. • To solve problems in a range of contexts, including the new or unusual. • The ability to think independently and to persevere when faced with challenges and learn from mistakes • The ability to reason, generalise and make sense of solutions. • Fluency in performing written and mental calculations and mathematical techniques. • Confidence to use mathematical vocabulary in different contexts and to use full sentences when answering a question or solving a problem.

Area	EYFS	Year 1	Year 2
To know and use numbers	Recognise some numerals of personal significance. (M N) Recognise numerals 1 to 5. (M N) Count up to three or four objects by saying one number name for each item. (M N) Count actions or objects which cannot be moved. (M N)	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Count and read numbers to 100 in numerals Count and write numbers to 100 in numerals Count in multiples of twos, fives and tens from 0	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward Recognise the place value of each digit in a two-digit number (tens, ones) Identify, represent and estimate numbers using different representations, including the number line

	Counts objects to 10 and begin to count beyond 10. (M N) Count out six objects from a larger group. (M N) Selects the correct numeral to represent 1 to 5 then 1 to 10. (M N) Counts out an irregular arrangement of up to ten objects. (M N) Estimates how many objects they can see and checks by counting them. (M N) Uses language of more and fewer to compare two sets of objects. (M N) *Says the number that is one more or less than a given number.* (M N) Finds one more or one less from a group of up to five objects. (M N) Records using marks they can interpret and explain. (M N) Begins to identify own mathematical problems based on their own interests and fascinations. (M N) *Count reliably with numbers from one to 20. (M N)* *Place numbers one to 20 in order.* (M N)	Count in multiples of twos, fives and tens from 0 Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least Read and write numbers from 1 to 20 in numerals Read and write numbers from 1 to 20 in words Count in twos, fives and tens to solve problems e.g. count the number of chairs in a diagram when the chairs are organised in 7 rows of 5 by counting in fives Partition and combine numbers using apparatus if required e.g. partition 76 into tens and ones; combine 6 tens and 4 ones **Know and use numbers reasoning** Solve simple problems including spot the mistake ,true or false, what comes next and do then explain using concrete and pictorial representations	Compare and order numbers from 0 up to 100; use <, > and = signs Read and write numbers to at least 100 in numerals Read and write numbers to at least 100 in words Use place value and number facts to solve problems Partition two-digit numbers into different combinations of tens and ones using apparatus if needed e.g. 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones Use reasoning about numbers and relationships to solve more complex problems and explain his/her thinking e.g. 29 + 17 = 15 + 4 + ?; 'Together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc. Recall the multiples of 10 below and above any given 2 digit number e.g. say that for 67 the multiples are 60 and 70 **Know and use numbers reasoning** Solve problems including spot the mistake ,true or false, what comes next do then explain and make up an example

To add and subtract	Finds the total number of items in two groups by counting all of them. (M N) In practical activities and discussion begins to use the vocabulary involved in addition and subtraction. (M N) Records using marks they can interpret and explain. (M N) Begins to identify own mathematical problems based on their own interests and fascinations. (M N) *Using quantities and objects add and subtract two single digit numbers and count on or back to find the answer.* (M N)	Read and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs Write mathematical statements involving addition (+), subtraction (-) and equals (=) signs Demonstrate an understanding of the commutative law (e.g. 3 + 2 = 5, therefore 2 + 3 = 5) Demonstrate an understanding of inverse relationships involving addition and subtraction (e.g. if 3 + 2 = 5, then 5 – 2 = 3) Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10 , therefore 4 + 6 = 10 and 10 – 6 = 4) Represent and use number bonds within 20 Represent and use subtraction facts within 20 Add one-digit and two-digit numbers to 20, including zero Subtract one-digit and two-digit numbers to 20, including zero Solve one-step problems that involve addition, subtraction and missing numbers	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures Solve problems with addition and subtraction applying his/her increasing knowledge of written methods and mental methods where regrouping may be required Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 – 3 = 4, then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 Add and subtract numbers where no regrouping is required, using concrete objects, pictorial representations, and mentally, including a two-digit number and ones Add and subtract numbers using concrete objects, pictorial representations, and mentally, including a two-digit number and tens

		using concrete objects and pictorial representations **Add and Subtract Reasoning** Solve simple problems including continue the pattern, missing numbers, working backwards, what else do you know fact families, missing symbols, convince me, missing numbers, make an estimate, is it true that, using concrete and pictorial representations	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including two two-digit numbers Add and subtract numbers using concrete objects, pictorial representations, and mentally, including adding three one-digit numbers Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems Recall doubles and halves to 20 e.g. knowing that double 2 is 4, double 5 is 10 and half of 18 is 9 Use estimation to check that his/her answers to a calculation are reasonable e.g. knowing that 48 + 35 will be less than 100 Solve missing number problems using addition and subtraction **Add and Subtract Reasoning** Solve simple problems including continue the pattern, missing numbers, easy and hard questions , true or false, what else do

			you know fact families, missing symbols, convince me, missing numbers, make an estimate, always, sometimes never true
To multiply and divide	Records using marks they can interpret and explain. (M N) Begins to identify own mathematical problems based on their own interests and fascinations. (M N) *Solve problems including sharing, doubling and halving.* (M N)	Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher Solve one-step problems involving division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher **Multiplication and Division Reasoning** Solve simple problems including, making links, practical problems, and spot the mistake using concrete and pictorial representations	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Solve problems involving multiplication and division, using concrete materials and mental methods Solve problems involving multiplication and division, using arrays, repeated addition and multiplication and division facts, including problems in contexts e.g. knowing that 2 × 7 = 14 and 2 × 8 = 16, explains that making pairs of socks from 15 identical socks will give 7 pairs and one sock will be left Use multiplication and division facts for 2, 5 and 10 to make deductions outside known multiplication facts e.g. know that multiples of 5 have one digit of 0 or 5 and

			use this to reason that 18 × 5 cannot be 92 as it is not a multiple of 5 Solve word problems involving multiplication and division with more than one step e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet Recognise the relationships between addition and subtraction and rewrite addition statements as simplified multiplication statements e.g. 10 + 10 + 10 + 5 + 5 = 3 × 10 + 2 × 5 = 4 × 10 **Multiplication and Division Reasoning** Solve problems including, missing numbers ,making links, prove it, true or false, and use the inverse
Fractions (including decimals, percentages, ratio and proportion)	Begins to identify own mathematical problems based on their own interests and fascinations. (M N) *Solve problems including sharing, doubling and halving. (M N)* Use everyday language to solve simple problems. (M N)	Recognise, find and name a half as one of two equal parts of an object, shape or quantity Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **Fractions Reasoning** Solve simple problems including, what do you notice, true or false using concrete and pictorial representations	Recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity and demonstrate understanding that all parts must be equal parts of the whole Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½ **Fractions Reasoning** Solve problems including, what do you notice, true or false, spot the mistake, what comes next, odd one out, ordering.

To understand the properties of shapes	Begin to use mathematical name for solid 3D shapes and flat 2D shapes and mathematical terms to describe shapes. (M SSM) Select a particular named shape. (M SSM) Use familiar objects and shapes to create and recreate simple patterns and build models. (M SSM) *Use everyday language to talk about size, weight and capacity. (M SSM)* *Recognise, create and describe simple patterns. (M SSM)* *Explore characteristics of everyday objects and shapes and use mathematical language to describe them. (M SSM)* *Use everyday language to solve simple problems. (M SSM)*	Recognise and name common 2-D shapes e.g. rectangles (including squares), circles and triangles Recognise and name common 3-D shapes e.g. cuboids (including cubes), pyramids and spheres **Properties of Shape Reasoning** Solve simple problems including, visualising, what's the same what's different, true or false, other possibilities using concrete and pictorial representations	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres) Identify 2-D shapes on the surface of 3-D shapes e.g. a circle on a cylinder and a triangle on a pyramid Compare and sort common 2-D and 3-D shapes and everyday objects describing similarities and differences e.g. find 2 different 2-D shapes that only have one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices and describe what is different about them **Properties of Shape Reasoning** Solve problems including, visualising, what's the same what's different, always, sometimes never,other possibilities.

To describe position, direction and movement	Can describe an objects relative position such as behind or next to. (M SSM) Use everyday language to talk about position and distance. (M SSM) *Use everyday language to solve simple problems. (M SSM)*	Describe position, direction and movement, including whole, half, quarter and three-quarter turns **Position and Direction Reasoning** Solve simple problems including, working backwards using concrete and pictorial representations	Order and arrange combinations of mathematical objects in patterns and sequences Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) **Position and Direction Reasoning** Solve simple problems including, working backwards and what comes next.
To use measures	Order two or three items by length or height. (M SSM) Order two items by weight or capacity. (M SSM) Use everyday language related to time. (M SSM) Begin to use everyday language related to money. (M SSM) Order and sequence familiar events. (M SSM) Measure short periods of time in simple ways. (M SSM)	Compare, describe and solve practical problems for lengths and heights e.g. long/short, longer/shorter, tall/short, double/half Compare, describe and solve practical problems for mass/weight e.g. heavy/light, heavier than, lighter than Compare, describe and solve practical problems for capacity and volume e.g. full/empty, more than, less than, half, half full, quarter Compare, describe and solve practical problems for time e.g. quicker, slower, earlier, later	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, < and = Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value Find different combinations of coins that equal the same amounts of money

	Use everyday language to talk about size, weight and capacity time and money. (M SSM) *Use everyday language to solve simple problems. (M SSM)*	Measure and begin to record mass/weight Measure and begin to record capacity and volume Measure and begin to record time (hours, minutes, seconds) Recognise and know the value of different denominations of coins and notes Sequence events in chronological order using language e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening Recognise and use language relating to dates, including days of the week, weeks, months and years **Measures Reasoning** Solve simple problems including, top tips, explain thinking, application and possibilities using concrete and pictorial representations	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change Compare and sequence intervals of time Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times Remember the number of minutes in an hour and the number of hours in a day Read scales in divisions of ones, twos, fives and tens Read scales where not all numbers on the scale are given and estimate points in between Read the time on a clock to the nearest 15 minutes **Measures Reasoning** Solve simple problems including, top tips, undoing, application , possibilities, working backwards, the answer is and what do you notice.

To use statistics	Use everyday language to solve simple problems. (M N)	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity **Statistics Reasoning** Solve simple problems including, true or false using concrete and pictorial representations	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity Ask and answer questions about totalling and comparing categorical data **Statistics Reasoning** Solve problems including, true or false, convince me, what's the same what's different and make a questions
To use algebra	Use everyday language to solve simple problems. (M N)	Solve simple addition and subtraction missing number problems using concrete resources and pictorial representations. **Algebra Reasoning** Solve simple problems including, connected calculations using concrete and pictorial representations	Solve addition and subtraction problems involving missing numbers. **Algebra Reasoning** Solve problems including, connected calculations and true or false.

Assessment

Year Two Assessment Overview

Teacher Assessment Framework	National Curriculum

Autumn	Spring	Summer
WTS: Read and write numbers in numerals up to 100	WTS: Read and write numbers in numerals up to 100	WTS: Read and write numbers in numerals up to 100
Read and write numbers to at least 100 in numerals and in words	Read and write numbers to at least 100 in numerals and in words	Read and write numbers to at least 100 in numerals and in words
Consolidation of place value	Spine 1: Addition and Subtraction of two-digit and single-digit numbers	Statistics
EXP: Partition any number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables (CROSS CURRICULAR WITH COMPUTING)
Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them	Spine 1: Addition and Subtraction of two-digit numbers and multiples of ten	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity (CROSS CURRICULAR WITH COMPUTING)

Recognise the place value of each digit in a two-digit number (tens, ones)				Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30)				Ask and answer questions about totalling and comparing categorical data (CROSS CURRICULAR WITH COMPUTING)				
Compare and order numbers from 0 up to 100; use <, > and = signs				Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and tens				Measure				
Week 1-4, Spine 1: Number, Addition and Subtraction				Money				EXP: Read scales in divisions of ones, twos, fives and tens				
Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: three one-digit numbers				WTS: Know the value of different coins								

Spine 1: Subtraction as difference					EXP: Use different coins to make the same amount				GD: Read Scales where not all numbers on the scale are given and estimate points in between			
Time					Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value				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			
EXP: Read the time on a clock to the nearest 15 minutes					Find different combinations of coins that equal the same amounts of money							
									Compare and order lengths, mass, volume/capacity and record the results using >, < and =			

GD: Read the time on a clock to the nearest 5 minutes				Spine 1: Adding and Subtracting two-digit numbers				Problem Solving Using Money - Consolidation				
								2D/3D Shapes - Consolidation				
Compare and sequence intervals of time				EXP: Add and Subtract any two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus				Graphs and Charts - Consolidation				
								Position and Direction				
								Order and arrange combinations of mathematical objects in patterns and sequences				
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				Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two two-digit numbers				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). (CROSS				
				GD: Use reasoning about numbers and relationships to solve more complex problems and								

				explain their thinking				CURRICULAR GEOGRAPHY)				
								Estimation				
Know the number of minutes in an hour and the number of hours in a day				GD: Solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')				Identify, represent and estimate numbers using different representations, including the number line				
Spine 2: Multiplication representing equal groups												
								Problem Solving				
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs								Applying their increasing knowledge of mental and written methods				
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.				Solve simple problems in a practical context involving addition and subtraction of money of the				Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those				

				same unit, including giving change?				involving numbers, quantities and measures				
								Use place value and number facts to solve problems.				
Spine 2: Times tables: Groups of 2, 5 and 10				Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.				Fluency				
EXP: Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary								WTS: Recall at least four of the six2 number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10 , therefore 4 + 6 = 10 and 10 – 6 = 4)				
GD: Recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts												
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers				Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				WTS: Recall at least four of the six2 number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10 , therefore 4 + 6 = 10 and 10 – 6 = 4)				
Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot												

Shape								EXP: Recall number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships.				
WTS: Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry				Spine 2: Commutativity, doubling and halving				Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward				
EXP: Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry												
								Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100				
GD: Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).												
Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line				Show that multiplication of two numbers can be done in				Notes				

Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				any order (commutative) and division of one number by another cannot				
Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				Spine 2: Structures: Quotative and Partitive Division				
Compare and sort common 2-D and 3-D shapes and everyday objects				Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs				
Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line				Spine 3: Fractions				
				EXP: Identify 1/4 , 1/3 , 1/2 , 2/4 , 3/4 , of a number or shape, and know that all parts must be equal parts of the whole				
				Recognise, find, name and write fractions 1/3 , 1/4 , 2/4 and				

				3/4 of a length, shape, set of objects or quantity				
				Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½				