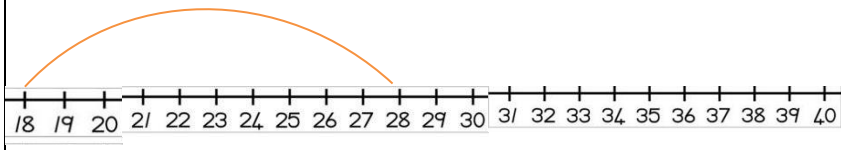
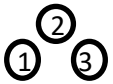
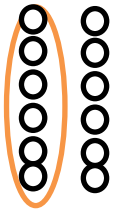
Maths Medium Term Planning – Year 2 – Spring 2

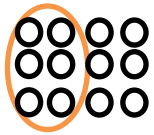
	Year 2 – Spring 2		
Spring 2	**Number and Place Value**		
	Learning Intention	**Implementation**	**Impact**
	To be able to count in steps of 1s to 100 forwards and backwards.	As part of **mental maths** the children will count forward/backwards from/to 100 around the class. Can they beat the 2 minutes on the timer? Can you beat the time from last week?	The children will be able to count to and backwards from 100 starting at any number.
	To be able to count in steps of 2 from any number, forward or backward.	The children will in their **mental maths** practise counting up and back in 2s from any number up to 100. Can they beat the 2 minute timer? Can they count up in 2s and back in 1s from 1 – 51?	Children can recognise the pattern for counting in 2s and understand what odd and even numbers are.
	To be able to count in tens from any number backwards.	As part of **mental maths** the children will count back in 10s from 99. Repeat with 73 and 86.	The children will be able to count back from any number from 100 in tens.
	To recognise numbers to 100.	As part of **mental maths** the children will ask 6 questions to try and guess the teacher's number. Which are the best questions to ask first?	The children will be able to guess the correct number using their knowledge of multiples of 2s, 5s and 10s.
	To double and halve numbers up to 20.	As part of the **mental maths** session the children will be given a number. What is doubling? What is halving? Can you explain what is happening to the numbers? True or false – Even numbers can't be divided by 5. Prove it. How do I halve big numbers? How would I approach halving 24? 38? 64? Play Dotty dice – take turns to throw the dice. You can half or double the number you roll. Draw the number of dots in the square. Put all your dots in one of the boxes. You can't split them up and you can't have more than six dots in a box. When a box is full you could put a tick in the	The children will understand doubling numbers as the same number again doubled and halving as splitting a quantity into two equal pieces.

		corner. Keep going until there are three ticks in a row or column or diagonal. The winner is the person who puts down the last tick. Extension: Could they come up with their own rules e.g. each box can have 12 dots in and they can times the number by 3.	
	Addition & Subtraction		
	Learning intention	**Implementation**	**Impact**
	To recall and use addition and subtraction facts to 20 fluently.	Twice weekly the children will answer addition/subtraction number bond questions to 7/8, 10, 12 or 15. As part of **mental maths** sessions – flash a one-digit number to children, what do I add to make 10? Repeat with the same number, what do I add to make 20? Show a 2 digit number. What do I take away to make 10?	The children will know all their addition and subtraction number bonds to 20 fluently.
	To be able to add three one and two digit numbers.	As part of **mental maths** sessions the children will be shown 3 blocks of Cuisenaire (1 big, 2 fitting it). What are the possible options to make this a sum? You can use +, -.	The children can use their knowledge of addition and subtraction to produce their own sums based on a bar model.
	To be able to add and take away 10 to a one or two digit number using concrete objects.	The children will begin by practising a row as a class. Begin with number 2. What is the next number when you add 10? How did you work it out? What is the rule? (Have 100 square and dienes equipment available if this is needed). Write a line of numbers: 2, 12, 22, 32, 42, 52 and 62. Now ask the children to start with different numbers such as 7, 9 and 6. As part of mental maths the children will mentally subtract 10 to a number- what happens to the number?	The children will know that when you add 10 to a number the tens column increases by one ten and the ones column stays the same. If they subtract 10 to a number the tens column decreases by one ten and the ones column stays the same.
	To be able to add numbers bridging in 10s using structured and unstructured number lines.	Explain to the children that we are going to learn how to add two 2 digit numbers jumping in groups of 10s and ones. Demonstrate using structured number lines. Show the question 18 + 15 =. Start at 18 on the number line. Jump on 10 in one big jump. Where do you land? (28). Now jump on 5. GD can do a jump of 5, EX & WT do 5 single jumps. What number do you land on? What number do you land on? (WT will have number lines to stick in and draw the jumps on). GD children will move onto using unstructured number lines.	The children will know how to use a structured and unstructured number line to add in jumps of tens and ones.

			
	To be able to solve addition missing number problems using an unstructured number line.	The children will be able to use an unstructured number line to solve addition missing number problems. Remind children that when you add, it doesn't matter where the missing number is; you work it out the same way. By starting on the number left in the question until you get to the answer. Then count how many jumps have been made altogether. E.g. 12 + = 23, start at 12 on the number line, do a jump on 10 and 1, count 11 jumps made altogether. Missing number using number fact knowledge. Encourage to solve mentally.	The children will know how to use an unstructured number line to solve missing number addition problems.
	To be able to solve subtraction missing number problems using an unstructured number line.	Explain when the missing number is at the beginning, you add the two numbers together. When the missing number is in the middle you start at the end of your number line and write the number left in the question. Jump backwards until you get to the answer and add up how many jumps you've made altogether. As part of mental maths the children will add 1 to a number (talk partners). Then give the children a number to add 2 to. As part of **mental maths** the children will use flip books to add 11 to a number. Teach them to add 1 first then 1 ten. Repeat with take away.	The children will know how to use an unstructured number line to solve missing number subtraction problems.
	To be able to add 1 and 2 to a number. **To be able to add and take away 11 to a number.** **To be able to add and subtract numbers using concrete objects, pictorial**	All children will have a range of questions with mixed operations to solve. Children will solve them in a range of different ways but questions that should be done mentally will be highlighted. Recap one example of each on the board including bridging through tens and how to add on the extra ten. (GD – crossing tens within 100). As part of **mental maths** the children will practice solving different problems. Using whiteboards children will have a go at answering it in pairs. They will also do this as part of a main maths lesson.	The children will know how to add 1 and 2 to any given number. The children will know how to partition a number into tens and ones and then add it mentally to another number. The children will know how to partition two digit numbers into tens and ones and recombine them to add them together.

	representations and mentally, including:- **-A two-digit number and ones.** **-A two-digit number and tens.** **-Two two-digit numbers.** **-Adding three one-digit numbers.** **To solve problems with addition and subtraction using concrete objects and pictorial representations.** **To be able to use number knowledge to solve problems.**	The children will be given a pyramid made up of 6 circles. They are given the numbers 0-5 to put into the circles. They cannot repeat a number. The number they put in the circle above the two other circles have to be a difference on the two lower numbers e.g. 	They will know how to take away two digit numbers. They will be able to use adding and taking away as a checking strategy. The children will understand the vocabulary in a question which tells them whether to add or subtract. The children will understand the term 'difference' and will be able to recognise a pattern.
	Multiplication and Division		
	To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. **To calculate mathematical statements for multiplication and division**	During their **mental maths** session the children will be asked to recall their 2x, 5x and 10x tables (Look at similarities between 10x table and 5 x tables). Tell children a number and they tell their partner if it is a multiple of 2, 5 or 10. Twice weekly the children will answer 60/80 questions on 10x or 2x tables in 3 minutes. If finished, answer mixed 10x and 2x table questions.	The children will be able to recall their 2xs, 5x and 10x table in any order. The children will be able to say whether a number is a multiple of 2, 5 or 10 and explain why. The children will be able to complete multiplication sums using cups and arrays.

	within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.	All the children will have a range of questions with mixed operations to solve. The children will solve them in a range of ways (using cups and arrays) but questions that should be done mentally will be highlighted. Recap one example of each on the board.	
	Fractions		
	Recognise, find, name and write fractions 1/2, 1/3, 3/4, and ¼. **To be able to find a fraction of a number.**	As part of **mental maths** the children will use fraction fans to show ¼, ½ and 3/4. Show me 1/2. Are there any other ways of doing this? Repeat with ¼, ¾. Fraction work – ½, ¼, ¾ of a shape. Draw a circle, cut into fractions and explain it is one circle cut into…pieces. Shade the area. Repeat with a shape broken into 8/10/12. What is ½ of it? What is ¼? ¾? As part of **mental maths** – plot fractions along a line. Which is the smallest fraction? The largest fraction? ½, ¼, 1/3, 2/4, ¾, 2/3. Demonstrate how to find fractions of a number. Write ½ on the board. What does it mean? Write ½ of 12 on the board. Explain it's like division and to work out the answer we need to split it into piles of 2:-  Demonstrate how to find a quarter of a shape: ¼ of 12:- 	The children will understand that when you divide into ½ you split into two equal pieces and when you divide into 1/4s you split into 4 equal pieces. The children will understand what fractions add up to make a whole one. The children will know how to use pictorial representations to work out fractions of different numbers.

	To be able to find multiples of fractions.	Demonstrate to the children how to find multiple fractions of a number circling that number of piles e.g. 2/4 of 12  The children will start working out equivalent fractions e.g. 2/4 of 12 = 6 is the same as ½ of 12 = 6. They will also start working out the ½ fractions mentally.	The children will know how to solve word problems relating to fractions.
	To be able to solve word problems involving fractions.	The children will apply their knowledge to solve fraction word problems.	
	Measurement		
	Learning Intention	**Implementation**	**Impact**
	To be able to read scales to the nearest appropriate unit.	The children will have a measurement booklet where they will read scales (in steps of 2s, 5s and 10s). They will read scales for mass (kg/g), temperature (^{o}C) and capacity (litres/ml). The children will read scales where it only shows some numbers. There will be some problems for the children to answer once they have finished reading the measurements. Number pattern – Show children notebook about number patterns. Answer the questions and demonstrate how to work out the scale. Children will then have a number sheet to work out the patterns and plot the missing number.	The children will recognise a scale and be able to read the scale to the nearest appropriate unit.
	To be able to tell the time to the nearest ¼ hour intervals. To be able to say one hour later.	The children will use a plastic clock to set different times to quarter hour intervals and then show 1 hour later. The children will read times where it only shows some numbers. There will be some problems for the children to answer once they have finished reading the measurements.	The children will be able to tell the time to quarter hour intervals and say what one hour later is. They will be able to use this knowledge to solve problems.
	To be able to recognise and use symbols for	As part of **mental maths** money will be place d on the board. What is the amount? How much do I need to add to get to £1? Repeat 3 times.	The children will recognise different coins. They will use their knowledge of

	pounds (£) and pence (p); combine amounts to make a particular value. To find different combinations of coins that equal the same amount of money. **To be able to choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg, g); temperature (^{o}C); capacity (litres/ml) to the nearest appropriate unit.**	How much will I need to get to £2? What coins could I use? How much would I have left if I spent x amount? If I had £1 and I spent 73p, how could I use a blank number line to work out the change? What are all the ways I can make 17p? Put them all on the board. Which is the most efficient? As part of the **mental maths** session children will recap on measurements. What do we weigh/find the length in? Estimations – how tall do you think the door is? 1cm, 1m, 2m, 5m. Repeat with how heavy you think the basket is. Recap what the children measure weight, temperature, length and volume in. Children will complete sheets on units. Identify weights on scales. Then compare weights of objects.	number bonds to add different amounts of coins together. They will be able to work systematically to find all the different combinations. The children will know what units of measurement we measure length, height, volume mass and temperature in. They will be able to estimate different weights, heights, volume, mass and temperature.
	Geometry: Properties of Shapes		
	Learning intention	**Implementation**	**Impact**
	To identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. To identify and describe the properties of 3D shapes including the number of edges, vertices and faces. **To be able to draw 2D shapes.**	As part of **mental maths** the children will play guess my shape. Ask children to work out a shape by asking questions… is it 2D or 3D? How many vertices does it have? Also shape cards – flash and identify. True or false shapes. As part of **mental maths** the children will say – What's the same, what's different? Pick cylinder, cone and cuboid out of the bag. Do they all have straight edges and flat faces? What is the same about them? What is different? On dotted white board paper, the children will draw a square. Repeat with triangle and rectangle. Repeat with a pentagon and discuss how to draw irregular pentagon.	The children can recognise a 2D or 3D shape by their properties. The children will be able to compare 2D and 3D shapes and say what is the same and what is different? The children will be able to draw 2D shapes based on their knowledge of the properties of shapes.

	To be able to find similarities and differences in shapes.	The children will choose two shapes (name written on the board). They will have to write similarities and differences between the two shapes in as much detail as possible. They will do this with a range of shapes (2D and 3D).	The children will be able to apply their knowledge of the properties of 2D and 3D shapes to identify similarities and differences.
	Geometry: Position and Direction.		
	To be able to order and arrange combinations of mathematical objects in patterns and sequences. **To understand 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).**	As part of **mental maths** a pattern will be drawn on the board. What are the next 3 symbols? Talk about rotation with the children then be able to answer the questions.	The children will be able to say a pattern and add the next symbols in the pattern. The children will be able to identify different shapes and talk about how much they have rotated in terms of turns and in which direction.
	Independence Resilience Respect Team-work Creativity Aspirational.		

Mastering Number	Subitising	Cardinality, ordinality and counting	Composition	Comparison	Addition and subtraction/ Number facts
	• continue to conceptually subitise the numbers 11–19 using a range of representations, which expose the structure of these numbers as 'ten and a bit'.	• revisit the structure of the linear number system within 20, making links between the midpoints of 5 and 10, and 15.	• review the composition of odd and even numbers, linking this to doubles and near doubles.	• continue to compare numbers within 20, including questions which use the symbols +, <, >, or =, such as: Write the correct symbol: 10 + 4 ☐ 15 10 + 4 ☐ 14 10 + 4 ☐ 13	• draw on their knowledge of the linear number system and apply this to calculations involving 1 more and 1 less, and pairs of numbers with a difference of 1 • use their understanding of the composition of odd and even numbers to find doubles and near doubles • apply known facts to calculations involving larger numbers, e.g. 5 + 2, 15 + 2, 25 + 2.
	Independence **Resilience** **Respect** **Team-work** **Creativity** **Aspiration**				