

Maths Medium Term Planning – Year 2 – Summer 1

Year 2 – Summer 1			
Summer 1	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 in 1s from/to 100 around the class.	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.	Children can recognise the pattern for counting in 2s and understand what odd and even numbers are.
	To count in steps of 5 from any number, forward or backward.	As part of their mental maths the children will practise counting in 5s forwards and backwards from 100. Children stand in a circle outside and throw a ball to another person in the circle and count up in 5s. Then work in pairs. If they drop the ball they have to go back to the start. You can make this a competition by setting a time limit and seeing which pair get to the highest multiple. With children that are struggling throw the ball round a circle and give more support.	Children can recognise the pattern for counting in 5s e.g. numbers ending in 0, 5, 0. They can say the next number in a sequence.
To count in steps of 3 from 0 and any number forwards and backwards.	As part of mental maths the children will count forward backwards in steps of 3. Children stand in a circle outside and throw a ball to another person in the circle and count up in 3s. Then work in pairs. If they drop the ball they have to go back to the start. You can make this a competition by setting a time limit and seeing which pair get to the highest multiple. With children that are struggling throw the ball round a circle and give more support.	The children will be able to count to and backwards in 3s.	

	<p>To be able to come up with questions when given a number.</p> <p>To compare and order numbers from 0 to 100; use <, > and = signs.</p> <p>To double and halve numbers up to 20.</p> <p>To recognise numbers to 100 and use my number knowledge to solve problems.</p>	<p>As part of mental maths the children will be given the number 68. What is the question? Repeat again with number 57.</p> <p>As part of mental maths – Greater than, less than numbers. 27, 46, 42, 25, 65, 37. Extension – $7 + 8$, $8 + 7$, $3 + 6$, $2 + 7$.</p> <p>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 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.</p> <p>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.</p> <p>One of thirty-six. Children will have a number grid made up of 36 numbers. They have to use the clues written underneath to work out which number is going to be left. Some of the questions are 'nonsense questions', they make sense but they aren't very useful. Once children have worked it out they will need to write in as much detail as possible using sentence starts which will be on the board. They must include which questions they looked at first and why and go through their working out and eventually how they got the answer.</p> <p>Children have cards from 0-9. They have to make two digit numbers which meet the criteria e.g. largest even number. Once they have answered all the questions can they try again but make it an even better fit? Keep playing around and find the best fit. Extension: Children must prove that they have found the best fit using the</p>	<p>The children will be able to use their number facts to come up with questions.</p> <p>The children will understand doubling numbers as the same number again doubled and halving as splitting a quantity into two equal pieces.</p> <p>The children will recognise all numbers up to 100 and they will use their number facts and their knowledge of multiples of 2s, 3s, 5s and 10s to solve problems.</p>
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		sentence starts. Children must try to justify and convince the reader they have found the best fit.	
	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. Each child tries to beat their score from last time. Flash number partners to 20 as part of mental maths. How do you relate the number bonds to 10 to number bonds to 20?	The children will know all their addition and subtraction number bonds to 20 fluently.
	To be able to add and take away 10 to a one or two digit number mentally.	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 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 and take away 11 to a number.	As part of mental maths the children will use flip books to add 11 to a number. What is the pattern? How do we do it? Try taking away 10.	The children will know how to partition a number into tens and ones and then add it mentally to another number.
	To be able to solve addition missing number problems using an unstructured number line.	Recap how to work out missing numbers. Emphasise that addition is commutative and subtraction is not. This means that when answering addition questions it doesn't matter where the missing number is and you work it out the same way. e.g. $17 + \square = 29$ or $\square + 12 = 29$. You count from one number to another.	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 using an	Explain to children that with subtraction you either takeaway if the second number is missing, however if the first number is missing, you have to add the second number and answer together. e.g. $32 - \square = 17$ or $\square - 15 = 17$.	The children will know how to use an unstructured number line to solve subtraction missing number problems.

unstructured number line.

To be able to add and subtract numbers using concrete objects, pictorial representations and mentally.

To solve problems with addition and subtraction using concrete objects and pictorial representations.

To be able to derive addition and subtraction sentences using Cuisenaire.

17

22

32

The children will move onto completing mixed missing number questions e.g. $15 + ? = 20$, $12 + ? = 20$, $16 + ? = 20$, $20 - 6 = ?$, $20 - 1 = ?$

The children will be given a variety of questions with mixed operations. They can decide how to answer the questions including unstructured number lines, cups or mentally. They need to be encouraged to use the most efficient method possible. This will include Bridging through 10's, adding three numbers together and going past 100 e.g. $90 + 13 =$.

The children will have examples of various word problems on the board. As a class go over these and discuss the best way to answer them. Children should focus on exactly what the question is asking them to do and which operation/s they are going to need to use. On the board allow children to independently go through word problems and then as a class go over how they worked it out.

Children to answer questions in their books.

Go over any misconceptions. The children should take time to go over corrections and notice where they went wrong. The children will continue to answer word problems which will progressively get harder – eventually going onto 2 step word problems and more complex 1 and 2 step problems.

As part of mental maths – Use Cuisenaire. What are the four number sentences?

37	
19	18

The children will know how to answer addition and subtraction questions using the most efficient method.

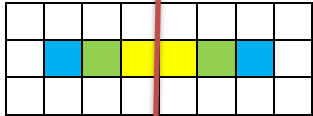
The children will understand the vocabulary in a question which tells them whether to add or subtract and know how to solve them.

The children will be able to generate two addition and two subtraction sentences correctly.

	<p>To be able to add 1 and 2 to a number.</p> <p>To be able to add and subtract one and two digit numbers and look for patterns.</p> <p>To be able to use addition to solve problems.</p>	<p>As part of mental maths session – give the children a number to add 1 and then 2 to, tell their partner.</p> <p>Children will have a pyramid with a number in the middle. They have to make each side of the pyramid add up to the number in the middle using 6 different numbers between 1-6. Children will work in pairs to do this. Once completed children will choose a larger number to put in their pyramid and using the same numbers. Keep repeating using the same numbers. Do they notice any patterns?</p> <p>The tall tower – The children can work in pairs or on their own. They have been imprisoned at the top of a tall tower by the wicked magician. They can get out by climbing down the ladders. In each room there is a different spell that is worth a different amount. They cannot go in the same room twice or climb up the ladders, only climb down. The children then have to work out which way they should go to collect the most spells, which way to collect as few as possible and which way to collect exactly 35 spells.</p> <p>Extension: Children can have empty templates of the tall tower to write their own numbers and come up with their own questions (e.g. which ways can they go so they will have an even number of spells).</p>	<p>The children will be able to add 1 and 2 to a number.</p> <p>The children will be able to add 1 and 2 digit numbers and identify a pattern in their pyramids.</p> <p>The children will be able to add 1 and 2 digit numbers to solve problems.</p>
	<p>Multiplication and Division</p>		
	<p>To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.</p>	<p>During their mental maths session the children will be asked to recall their 2x, 5x and 10x tables and random questions 3 x 5.</p> <p>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. Each child will try to beat their score from last time.</p> <p>True or false if I divide any number by 10 the answer will always be 1 digit?</p>	<p>The children will be able to recall their 2xs, 5x and 10x table in any order.</p>

	<p>To calculate mathematical statements for multiplication and division and write them using the multiplication (x), division (÷) and equals (=) signs.</p> <p>To solve problems involving multiplication and division.</p>	<p>As part of mental maths look at 5 and 10 x tables. What do you notice? $5 \times 1 =$, $5 \times 2 =$, $5 \times 3 =$, $10 \times 1 =$, $10 \times 2 =$, $10 \times 3 =$.</p> <p>The children will be given a variety of questions with mixed operations. They can decide how to answer the questions including arrays, cups or mentally. They need to be encouraged to use the most efficient method possible. E.g. 3×10 should be done mentally 6×7 should use cups/arrays. Ask children to explain their thinking as to why they answered particular questions in that way. Did they estimate the answer before they worked it out? Did they know they could apply their existing number facts? Record any of these ideas.</p> <p>As part of mental maths – True or false? $5 \times 6 = 6 \times 5$, $5 \times 6 = 10 \times 3$, $5 \times 6 = 3 \times 10$. What do you notice?</p> <p>The children will have examples of various word problems on the board. As a class go over these and discuss the best way to answer them. Children should focus on exactly what it is the question is asking them to do and which operation/s they are going to need to use. On the board allow children to independently go through word problems and then as a class go over how they worked it out. Children to answer questions in their books.</p> <p>Go over any misconceptions. The children should take time to go over corrections and notice where they went wrong. The children will continue to answer word problems which will progressively get harder – eventually going onto 2 step word problems.</p>	<p>The children will be able to answer multiplication and division questions using the most efficient method.</p> <p>The children will understand the vocabulary in a question which tells them whether to multiply or divide and know how to solve them.</p>
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	Fractions		
	<p>Recognise and find $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{1}{4}$ of a shape.</p> <p>To be able to find a fraction of a number.</p>	<p>Find $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{3}{4}$ of a shape. Draw a circle, cut it into fractions and explain its one circle cut intopieces. Shade the area. Repeat with a shape broken into 8, 10 and 12. What is $\frac{1}{2}$ of it? $\frac{1}{4}$? $\frac{3}{4}$?</p> <p>What does $\frac{1}{2}$ mean? Prove it.</p> <p>Fraction work – Find $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$ of a number mentally – 12, 16, 20, 4.</p> <p>Plot fractions along a line. Which is the smallest fraction? The largest fraction? $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{2}{3}$.</p>	<p>The children will understand that when you divide into $\frac{1}{2}$ you split into two equal pieces and when you divide into $\frac{1}{4}$s you split into 4 equal pieces.</p> <p>The children will understand what fractions add up to make a whole one.</p>
	Measurement		
	Learning Intention	Implementation	Impact
	<p>To be able to tell the time to the nearest $\frac{1}{4}$ hour intervals. To be able to say half hour/one hour later.</p> <p>To be able to recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. To use a number line to find change.</p>	<p>As part of mental maths the children will look at times with quarter hour intervals. What is the time in an hour? What is the time in half an hour? GD – use 10 min intervals.</p> <p>Holly uses a £1 coin to buy a packet of crisps. She was given 57p change. How much did the pack of stickers cost? Use number line.</p> <p>Look at these coins 50p, 10p, 10p, 5p, 5p. How could you make up the same total amount using just one type of coin? E.g. 20p + 20p + 20p + 20p.</p> <p>What coins could you use to make 35p change?</p>	<p>The children will be able to tell the time to quarter hour intervals and say what half hour/one hour later is.</p> <p>The children will recognise different coins. They will use their knowledge of number bonds to add different amounts of coins together. They will be able to use a number line to find the change.</p>

	Geometry: Properties of Shapes		
	Learning intention	Implementation	Impact
	<p>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.</p> <p>I can identify 2D shapes on 3D shapes.</p> <p>I can identify lines of symmetry.</p>	<p>As part of mental maths the children will play guess my shape. What am I? I am 3D. What possibilities are there? Give a second clue. How many possibilities are there now? What question could they ask you to tell them what your shape is?</p> <p>Flash regular and irregular 2D shapes. What are they?</p> <p>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?</p> <p>The children will go on a shape walk around the playground. What can you see? What 2D shapes can you see on 3D shapes?</p> <p>Show children power point of lines of symmetry. Discuss what symmetry means. The children will have 2D shapes that they can fold and draw at least one line of symmetry on. GD – to draw two lines of symmetry. Extension: Children will draw a repeating pattern coming out from the middle of a square e.g.</p>  <p>How many different symmetrical patterns can you make by colouring 6 squares in a line? Only use 3 different colours.</p>	<p>The children can recognise a 2D or 3D shape by their properties.</p> <p>The children will be able to apply their knowledge of 2D shapes to spot them in 3D shapes.</p> <p>The children will understand what symmetry is and be able to work in a pattern systematically.</p>

	I can solve problems and talk about what symmetry is.	The children will have a paper Easter egg where one side of the egg has a pattern on it. Children will then have to draw and colour a symmetrical pattern.	The children will be able to continue a pattern based on a line of symmetry.
	Geometry: Position and Direction.		
	To use mathematical vocabulary to describe position, including movement in a straight line and distinguishing between rotation as a turn in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).	<p>The children will go outside and as a whole class they will act as a robot with the teacher telling them where they want them to move. Instructions such as: 'make a $\frac{1}{2}$ turn clockwise.' Ensure they have a secure knowledge of clockwise and anti-clockwise. Discuss how far they would move in a circle if they were asked to move $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$ turns. Once the children are secure with this let them give each other the correct terminology.</p> <p>Recap $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ turns. Using Beebots and Beebot mats, children will direct their Beebots to different objects on the mats. Once children have had a go at moving the Beebot around they will fill out an activity sheet about position and direction.</p> <p>Children will have a sheet with a grid on. On the sheet there will be pictures which they have to direct themselves around the mat to the objects. This will then be written down and explained on their sheet using the correct terminology.</p>	The children will understand the terminology $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ turns. They will also understand which way to turn for clockwise and anti-clockwise.
	Statistics		
	Learning Intention	Implementation	Impact
	To interpret and answer questions on block diagrams.	The children will answer questions about a graph looking at the differences between questions carefully (reasoning paper 2).	The children will know how to interpret data on a bar graph and answer questions about it. They will understand mathematical vocabulary such most and least popular. The difference between.
	Independence Resilience Respect Team-work Creativity Aspirational.		

Mastering Number	Subitising	Cardinality, ordinality and counting	Composition	Comparison	Addition and subtraction/ Number facts
	<ul style="list-style-type: none"> Revisit previous activities which develop their subitising skills. 	<ul style="list-style-type: none"> Review the linear number system to 100, applying their knowledge of midpoints to place numbers on a structured number line – they will identify the multiples of 10 that come before and after a given number. 	<ul style="list-style-type: none"> Revisit previous activities which develop their understanding of the composition of numbers within 10 and 20. 	<ul style="list-style-type: none"> Reason about equalities and inequalities using equations and answering questions, such as: True or false? $5 + 3 = 6 + 2$ $9 + 4 > 9 + 5$ $9 + 6 < 10 + 5$ This will help them become fluent in the use of the inequality symbol as well as practising their number bond knowledge. 	<ul style="list-style-type: none"> Become fluent in a range of strategies involving calculations within 20, using 'make 10' strategies to add, and subtracting through the tens boundary Practise recalling number bonds through a range of activities and games which will encourage them to reason about sums and differences.