

Maths Medium Term Planning – Year 1 – Summer 1

Year 1 Summer 1			
Summer 1	Number and Place Value		
	Learning Intention	Implementation	Impact
	To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	During mental maths sessions the children will continue to extend counting skills – counting in 1s forwards and backwards to at least 100. They will count using the abacus, number line, a 100 square and counting around the class. They will apply their knowledge to a sequence e.g. 68, 69, 70, _. What number comes next? Sarah is counting backwards from 90 to 85. She says the numbers 90, 89, 88, 87, 85. What mistake has she made?	All children will be able to count forwards and backwards to/from at least 100 and apply this knowledge in sequences.
	To count in multiples of tens.	During mental maths the children will count forwards and backwards in steps of 10 to/from 100. They will apply this to questions e.g. True or false? I start at 0 and count in tens. I will say the number 41.	All children will be able to count forwards and backwards to/from 100 in steps of 10 and apply this knowledge to problems.
	To count in multiples of twos	During mental maths the children will count in multiples of two starting at 0 and starting at 1. They will relate these to odd and even numbers. They will apply their knowledge to a sequence e.g. 12, 14, 16, _. What number comes next? They will apply this to questions e.g. True or false? I start at 0 and count in twos. I will say the number 20?	All children will be able to count forwards and backwards in 2s to at least 50 and apply this knowledge to sequences and problems.
To count in multiples of fives	During mental maths the children will count in multiples of five starting at 0. They will apply their knowledge to a sequence e.g. 15, 20, 25, _. What number comes next? They will apply this to questions e.g. True or false? I start at 0 and count in fives. I will say the number 26?	All children will be able to count forwards and backwards in 5s to at least 100 and apply this knowledge to sequences and problems.	

	<p>To read and write numbers from 0 to 100 in numerals.</p> <p>To read and write numbers from 1 to 20 in words.</p> <p>To identify one more, one less, ten more and ten less than a number.</p> <p>To be able to order numbers to 100.</p> <p>To be able to identify odd and even numbers.</p>	<p>During mental maths sessions flash cards for reading numbers in numerals and also using number fans to make a number to 100. Also practise writing numerals from 1 to 100. Apply – using the number cards 1, 2, 3, 4 and 5. Use two of the digit cards to make a number greater than 40.</p> <p>During mental maths session speed spelling on whiteboards of numbers in words (1 to ten as per phase 1 and 8, 11, 12, 15, 16, 18 as per phase 2 and 13, 14, 17, 19, 20 as per phase 3). Also taken home as spellings. Flash cards for reading numbers in words.</p> <p>During mental maths session the children will use a number fan/flash cards to find one more, one less, 10 more and 10 less than a number. Also part of minute maths (answering 15 1 more questions and moving onto 15 1 less questions).</p> <p>During mental maths the children will be given three or five numbers between 0 to 100 and they will have to put them in order from smallest to largest and vice versa. They will also say which number for example; will be in the third position?</p> <p>During mental maths the children will be shown a target board. They will pick out odd/even numbers and explain why they are odd/even e.g. it is odd because it ends in a 1. They will apply these to questions such as: Which number could be the odd one out? 40, 71, 65. Pupils suggest their own reasoned ideas, for example 40 might be the odd</p>	<p>The children will be able to recognise numbers up to 100 and will know how to show them with the tens and ones arranged in the correct way. They will be able to write numbers correctly to 100 in numerals.</p> <p>The children will know how to read and write numbers correctly in words as per phase 1, 2 and 3.</p> <p>The children will understand that one more is the next number along when counting in ones and one less is the number before when counting in ones. They will understand that 10 more increases the tens column by 1 ten and 10 less reduces the tens column by 1 ten. They will be able to apply these to solve problems in different contexts.</p> <p>The children will be able to order 3 numbers within 10 from smallest to largest & vice versa. They will know how to use their knowledge of counting in ones and their knowledge of partitioning into tens and ones to order these.</p>
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<p>To be able to find doubles to 10.</p> <p>To recognise the place value of each digit in a two digit number (tens, ones).</p> <p>To use the language of equal to, more than, less than (fewer), most, least.</p> <p>To be able to use number facts to solve problems.</p>	<p>one out because it's not an odd number. Also can you choose two odd numbers with a difference of 2 (e.g. $5 - 3 = 2$).</p> <p>As part of the mental maths session the children will be able to find doubles up to 10. E.g. $10 + 10 = 20$.</p> <p>As part of the mental maths session the children will use flip books to work out how many tens and ones there are in a two digit number.</p> <p>As part of the mental maths session, the children will be shown two sets of objects – which one has the most? How do you know? How many more does it have (difference)? How could we work it out? (Estimate first).</p> <p>The children will practise with a flip book to:-</p> <ul style="list-style-type: none"> - Write down a number less than 60/greater than 60. - Write down a multiple of 2, 5 and 10 (explain what multiples are). - Write down odd/even number. - Write down a 2 digit number/1 digit number. - Write a number where the tens digit is even. - Write a number where the digits add to make 6. <p>The children will be given a 100 square and an envelope with different clues in, like the clues above. They must cross off the numbers according to the clues as they go along. Eventually they will be left with one number. Make it clear that they don't have to do the clues in order. The idea is to eliminate as many numbers as possible at a time.</p>	<p>They will understand that even numbers have a pair and odd numbers don't. They will be able to identify odd and even numbers by the digit it ends in. They will understand what 'difference' means.</p> <p>They will understand that doubling a number is the same as adding the same number again.</p> <p>The children will understand that a two digit number is made up of tens and ones. They will relate that 1 ten is 10, 2 tens are 20 etc...</p> <p>The children will understand what the vocabulary more than, less than, most and least means and be able to apply this.</p> <p>The children will be able to use their number facts to help them solve a problem and find the remaining number.</p>
Addition & Subtraction		
Learning intention	Implementation	Impact

To solve missing number addition and subtraction problems using a number line.

The children will revise solving missing number addition - 2 numbers with one missing - 2nd position and then 1st position. e.g. $3 + \square = 10$.
 Moving onto solving missing number addition problems with three numbers and one missing e.g. $3 + 5 + \square = 10$.

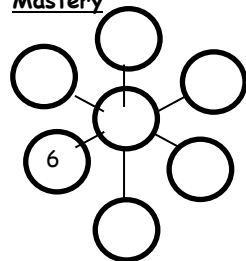
Mastery

Complete: $3 + \square = 10$, $10 - \square = 3$, $13 + \square = 20$, $20 - \square = 13$.
 What do you notice? Children may 'know' number pairs totalling ten but are they able to use them to support other calculations? For example, when probed to say, "If you know $3 + 7 = 10$, what else do you know?" They should reply with answers such as $13 + 7 = 20$ or $4 + 7 = 11$.

The children will solve missing number subtraction (2nd position) with sums up to 20 e.g. $19 - \square = 10$ (up to 10 for WT). They can use a number line to support calculation.

The children will move onto solving missing number subtraction problems with three numbers and one missing e.g. $9 - 5 - \square = 2$, moving onto 2 numbers missing. Encourage them to use their mental maths to work them out.

Mastery



Place the numbers so that all those which lie along a line add to the same total.

1, 2, 3, 4, 5, 6, 7
 Total = 12

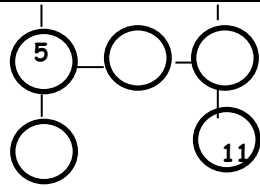
Mastery



The children will understand that both sides of the sum should balance and they will also be able to use their bonds to work out the missing number.

They will understand how to use number bonds to 10 to support number bond calculations to 20, when solving missing number problems.

They will be able to apply their knowledge of working out missing number problems to different problems and contexts.



Place the numbers so that all those which lie along a line add to the same total. 1, 3, 5, 7, 9, 11, 13 Total = 21.

Write the missing symbols (+, -, =) in these sentence:

$$17 \square 3 \square 20$$

To be able to find missing symbols.

To be able to represent and use number bonds and related subtraction facts within 20.

Each day the children will answer 15 or 20 questions within a minute (minute maths) for number bonds initially within 10 and then moving onto within 20.

True or false?

$$7 + 2 = 4 + 4$$

$$3 + 3 = 5 + 1$$

$$2 + 4 = 5 + 0$$

Continue the pattern: $10 + 8 = 18$, $11 + 7 = 18$.

As part of mental maths session – fact family house (come up with two addition and two subtraction sums – using only the numbers 7, 3 and 10).

Write a pair of numbers in the boxes to add to 20.

$$\square + \square = 20$$

And another pair, and another and another.

Can you find all possibilities?

The children will know their addition and subtraction number bonds to 10 and will be able to use these to work out addition and subtraction number bonds within 20.

The children will understand that two or more numbers can be added together to make different totals within 20.

To be able to understand what each digit represents in a two digit number using structured resources.
To be able to partition two-digit numbers in different ways.

Take 9 numbers and organise them into a 3x3 grid so that the rows, columns and two diagonals add up to the same number.

8	3	4
1	5	9
6	7	2

Each week complete:-

Fact for free:- $3 + 7 = 10$ $10 - 7 = 3$	Fact of the day:- $7 + 3 = 10$	Nearby $3 + 8 = 11$ $3 + 6 = 9$ $4 + 7 =$
Equivalent: $3 + 7 = 6 + 4$		Place Value $30 + 70 =$

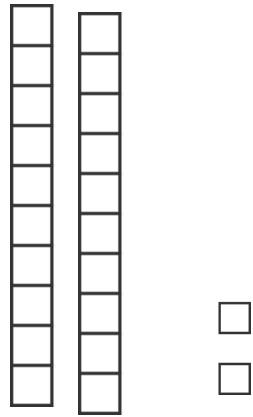
Can they explain how this fact helps them with other facts?

Mastery: Magic squares – adding up to 15. Can they make each row and column add up to make 15 in a 3x3 grid.

The children will select a 2 digit number from the middle of the table and partition it in different ways, using apparatus to show their thinking (e.g. dennes equipment, beads, cups). For example if they pick 22. This can be shown as $20 + 2 = 22$ or $10 + 12 = 22$.

The children will be able to draw on previous experience e.g. solving magic squares. They will begin by trial and error and then gradually begin to work consistently when they see a pattern with the middle number. The children will understand which digit represents the tens and which digit represents the ones in a two digit number. They will know how to partition a two digit number in different ways.

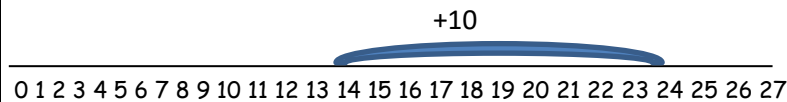
To begin to add using jumps of ten and one using a structured number line or apparatus for support.



$$20 + 2 = 22$$

As part of the mental maths session the children will practise finding numbers according to the tens and ones.

The children will add tens and ones using a structured number line for support e.g. $14 + 10 = 24$



To begin to take away using jumps of ten and one using a structured number line or apparatus for support,

They will move onto adding tens and ones. They can also use cups and dennes equipment to support. WT may need to count 10 jumps in ones initially.

The children will take away tens and ones using a structured number line for support e.g. $24 - 10 = 14$



The children will know that when they add ten to a number, the tens column increases by one ten and the units stay the same.

The children will know that when they take away ten from a number, the tens column decreases by one ten and the units stay the same.

To be able to solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations.

To be able to use number bonds to solve problems.

I can use my number bonds to help me add 3 one digit numbers.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
WT may need to count 10 in jumps of 1 initially, within 20.

The children will have word problems where they are required to partition numbers into tens and ones to work them out.

Working in groups, each group will be given a set of ten cards, each showing one of the digits from 0 to 9. They must divide the cards up between five envelopes so that there are two cards in each envelope. The sum of what the two numbers must equal is written on each envelope.

7	8	13	14	3
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Discuss as a class first what we are being asked to do e.g. maximum of 2 cards in an envelope, must add up to the numbers on the envelope. The children can find the answer by using their own recording.



3 children will stand on a grid to make 10. How many ways can this be done? If one person stands on 5 where can the other stand? Use unifix to support adding.

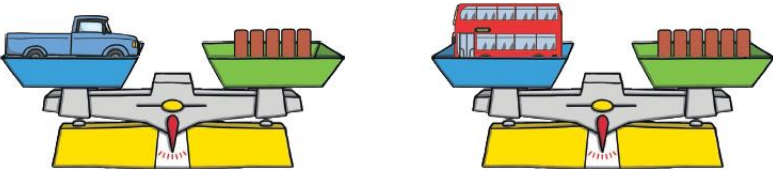
5	2	5
3	4	1
3	5	2

The children will understand the vocabulary which tells us the operation to carry out when solving word problem e.g. more means adding.

The children will be able to use their knowledge of number bonds to solve a problem. They will be able to find all of the solutions and prove it.

		Mastery -The children will be given calculations – can they sort them into categories e.g. number bonds to 10, doubles, near doubles, number bonds to 20.	
Multiplication and Division			
Learning Intention		Implementation	Impact
<p>To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with support of the teacher. To understand division as grouping.</p>		<p>As part of mental maths the children will work out:</p> <ul style="list-style-type: none"> - Here are 10 lego people. If five people fit into the train carriage, how many carriages do we need? - If one teddy has two apples, how many apples will 3 teddies have? - Sharing 8 apples between 4 children means each child has 1. True or false? 	<p>The children will be able to solve multiplication problems by using pictorial representations.</p> <p>The children will be able to group objects into groups of 2 and 5 and understand sharing/division as grouping.</p>
Fractions			
Learning Intention		Implementation	Impact
<p>To recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p>		<p>The children will revise finding half a shape, quantity or object as part of the mental maths session.</p> <p>As part of mental maths session the children will answer questions such as: There are 18 children in a class. Sam says half of the class is 10. Do you agree? Explain your reasoning.</p>	<p>The children will know and understand that a shape, object or quantity is split in half when it is equally split into 2 pieces. They can apply halves to solve problems.</p>
<p>To recognise, find and name a quarter as one of four</p>		<p>The children will revise finding a quarter of a shape, quantity or object as part of the mental maths session. Use unifix to support.</p>	<p>The children will know and understand that a shape, object or quantity is split</p>

<p>equal parts of an object, shape or quantity.</p> <p>To be able to add halves and quarters.</p> <p>To be able to solve word problems relating to fractions.</p>	<p>The children will begin by adding halves and whole numbers e.g. $\frac{1}{2} + 1\frac{1}{2} = 2$. They will then move onto adding halves and quarters e.g. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{2} + \frac{1}{2} = 2$.</p> <p>Before she began eating Mollie's pizza looked like this: </p> <p>After she had finished eating some pizza, it looked like this. </p> <p>How much pizza had Mollie eaten? Draw a ring around the answer:- A half a quarter two halves</p> <p>Tom's mum cut his apple into halves. How many pieces of apple did Tom have?</p>	<p>into quarters when it is equally split into 4 pieces. They can apply quarters to solve problems.</p> <p>The children will know how to add halves, quarters and whole numbers together. They will understand 4 quarters as making a whole and 2 halves making a whole.</p> <p>The children will know how to solve word problems relating to fractions.</p>
Measurement		
Learning Intention	Implementation	Impact

<p>To tell the time to the hour and half past the hour.</p> <p>Time: earlier, later.</p> <p>To measure and begin to record the following: Lengths and heights.</p> <p>To compare, describe and solve practical problems for: Lengths and heights (e.g. Tall/short) long/short, longer.</p> <p>Mass or weight (e.g. heavy/light, heavier than, lighter than.</p> <p>Capacity/volume</p>	<p>As part of the mental maths session children will set clocks to o'clock and half past times. They will then move onto setting clocks to one hour later and one hour earlier.</p> <p>As part of the mental maths session the children will compare length/height/mass – How do you know that this (object) is heavier/lighter/longer/shorter/taller than this one? What is the unit of measurement for each?</p> <p>Have pictures of a measuring jug, ruler and scales. Which would you use to measure the length of an object etc...?</p> <p>The children will measure lengths up to 15cm and then draw a line double the length. Can they then solve word problems such as Tom has a piece of ribbon 6cm, he wants double the length. How long will the piece of ribbon be that he wants?</p> <p>GD - The children will have pictures of two different objects:-</p> <p>The truck weighs ___ bricks.</p>  <p>The bus weighs ___ bricks.</p> <p>The truck is _____ than the bus.</p> <p>They must complete the sentence to say whether they are heavier or lighter</p>	<p>All children can tell the time to o'clock and half past and find one hour later and one hour earlier.</p> <p>The children will know how to tell the time for one hour later applying the principle of one more and one hour earlier applying the principle one less. They will be able to do this for o'clock and half past times.</p> <p>The children will understand how we measure length, height, mass and capacity e.g. which equipment is used and what unit of measurement is used.</p> <p>The children will be able to measure in cms and then apply their knowledge of doubles.</p> <p>The children will be able to measure mass or weight using non-standard units (cubes) to compare objects and determine which is heavier/lighter.</p>
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WT & EX - The children will have a set of scales. They will weigh two different items and say how many multilink cubes weigh the same as each item. They will then say which item is heavier e.g.
The ruler weighs ___ cubes. The puppet weighs _____ cubes.



The ruler is _____ than the puppet.

GD - Challenge:



Match each toy with a fact.

It weighs more than 5 sticks.



It weighs less than 5 sticks.

It is not the heaviest or the lightest.

WT & EX Challenge:



Complete the sentence:-

The teddy  is _____ than the duck .

The children will be able to compare different masses to solve a problem.

To be able to estimate and measure whether there is more than, the same or less than a litre.

To be able to solve problems relating to volume and capacity.

The worksheet is titled "Compare Mass" and has a question: "How heavy are these pots?". It features two balance scales. The top scale has a red pot on the left pan and four blue cubes on the right pan. The bottom scale has a green pot on the left pan and four blue cubes on the right pan. To the right of the scales are four clue cards, each with a small icon of a pot or cup:

- Card 1: "4 cubes heavier than the red pot." with an orange pot icon.
- Card 2: "Lighter than the green pot." with a blue cup icon.
- Card 3: "Lighter than the red pot but heavier than the green pot." with a white cup icon.
- Card 4: "Write a clue about the yellow pot so that your friend can find how many cubes it weighs." with a yellow cup icon.

At the bottom left, there is a sentence: "The red pot is _____ than the green pot."

The children will be shown a teapot and they will be asked to make a sensible estimate as to how many cups it would take to fill up the teapot. Then they will be shown how many it actually takes. The children will then work in small groups and they will have different containers (bottle, saucepan, yoghurt pot, a cylinder and a bowl) to estimate and then measure the actual capacity using a cup. Talk about this not being very accurate and suggest what might be a more accurate way to measure liquid e.g. measuring jug using millilitres and litres.

The children will have cards asking them to double the quantity of the liquid e.g. a jug has 200ml of liquid. I want to double this amount. How much liquid will be in the jug? (Can they use their number bonds to help e.g. if they know $2 + 2 = 4$, then they $200 + 200 = 400$).

Show the children how much a litre of water is. They will have other containers, can they estimate whether the containers hold more than, less than or the same as a litre?

The children will understand what the terms volume and capacity mean and they will know how to estimate and measure using non-standard units.

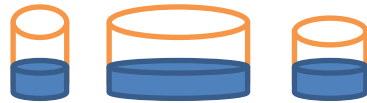
The children will know how much a litre of water is and be able to use this to estimate how much a container will hold.

The bottle holds 16 cups of orange when it is full. How many cups of orange do you think are in the bottle now?

The children will look at the water in a jug. How much water is in the jug? E.g. half, full, empty, full, quarter full.

Sid has a full bottle of drink. He pours it into a jug. Which has the greater capacity the bottle or the jug?

Captain conjecture says 'All of the glasses contain the same quantity of lemonade'. Do you agree?



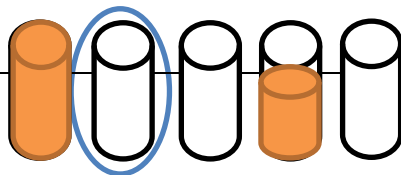
Explain your reasoning.

The children will have to make up different potions measuring them in millilitres (ml) and using red, green and blue potion e.g. Witch's potion: 100ml of red, 500ml of blue and 200ml of green potion. Can they use their knowledge of number bonds to 10 to add up the potions, to find the total capacity?

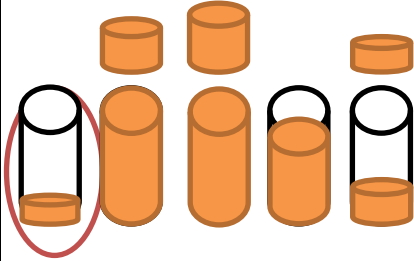
Can they match the words full, empty, half full, a quarter full to the correct container?

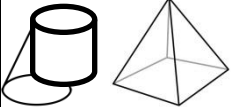
Mastery with greater depth:

I point to a glass which is about half as full as the glass in the red oval. Can you point to a glass which is about twice as full as the glass in the blue oval?



They will understand the terms half, full, empty, full, quarter full and be able to relate this to fractions. Through practice the children will be able to answer problems relating to volume and capacity.

	<p>To recognise and know the value of different denominations of coins and notes.</p> <p>To recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>To sequence events in chronological order using language such as: before, after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</p>	 <p>As part of mental maths session the children will identify 1p, 2p, 5p, 10p, 20p, 50p, £1, £2. Also questions such as how many 1ps make..? Also add up different amounts of coins using knowledge of counting in 2s, 5s and 10s.</p> <p>During mental maths session the children recite days of the week and months of the year. Including questions such as how many days in a week, months in a year?</p> <p>During mental maths sessions children asked questions e.g. What day comes before, after. What day is it today, tomorrow, yesterday? When do we do phonics e.g. morning? Also say good morning and afternoon for register.</p>	<p>The children will recognise different denominations of money and they will be able to add up different amounts of money.</p> <p>The children will know the order of the days of the week and months of the year. They will also know how many days are in a week and how many months are in a year.</p> <p>The children will understand what the different terms mean e.g. before, after etc.. and also apply these to different contexts – e.g. what number comes before/after?</p>
Geometry – Properties of shapes			
	Learning Intention	Implementation	Impact
	To recognise and name common 2D shapes (rectangles, squares, circles,	During mental maths sessions children work in talk partners and name 2D and 3D shapes and describe properties to each other using	The children will be able to name all 2D and 3D shapes, recognise their

	<p>triangles, hexagons and pentagons) and 3D shapes (cuboids, cubes, pyramids and spheres, cones, square based pyramid and triangular based pyramids).</p>	<p>mathematical vocabulary (vertices, sides, edges and faces). Also play shape shop and guess my shape.</p> <p>The children will be given a table of 2D shapes. Can they write the name of the shape in the box next to it and then write some of its properties? This includes sides, corners and is it symmetrical? WT – The children will be given a table with different 2D shapes. Can they match the name of the shape and the description of the shape to the correct picture of the shape?</p> <p>The children will be given a range of 3D objects which they will sort into groups e.g. cubes, cuboids, cylinders, pyramids and spheres.</p> <p>The children will be asked what the same is and what's different about these shapes?</p>  <p>Which could be the odd one out and why? Could each one be the odd one out? Explain your reasoning.</p>	<p>properties and use this to answer questions.</p>
Geometry – Position & Direction.			
	Learning Intention	Implementation	Impact
	<p>To describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p>	<p>As part of the mental maths session the children will practically move on the spot to do whole turns, half turns, quarter and three quarter turns. They will include using the vocabulary left turn (anti-clockwise), right turn (clockwise). Use language of position such as top, middle and bottom.</p> <p>The children will have a grid 5 x 3 where they will have to describe the position of certain objects using directions e.g. middle row and</p>	<p>The children will be able to apply their knowledge of fractions and telling the time (half past, quarter past) to move in the correct direction and into the correct position.</p>

		<p>3rd from the left. Make your own grid on the carpet initially with masking tape with objects so the children can practise moving the correct way.</p> <p>The children will make a spinner with different shapes at each point. Once they have made it, ask the children to make a quarter turn starting at the triangle. Which shape will the arrow be facing? Ask questions involving half turn, quarter turn, three quarter turn and whole turn.</p>			
	Independence Resilience Respect Team-work Creativity Aspirational.				
Mastering Number	Subitising	Cardinality, ordinality and counting	Composition	Comparison	Addition and Subtraction/Number facts
	<p>-Continue to practise conceptually subitising numbers they have already explored the composition of.</p> <p>-conceptually subitise numbers within 20 as they become more familiar with the composition of numbers within 20.</p>	<p>-Review the linear number system to 10, looking at a range of representations, including a number line.</p> <p>- Explore the use of 'midpoints' to enable them to identify the location of other numbers.</p>	<p>- continue to explore representations which expose the composition of numbers within 20.</p>	<p>-compare numbers within 20, including questions which use the symbols +, <, >, or =, such as: True or false? $10 + 4 < 14$ $10 + 4 = 14$ $10 + 4 > 14$</p>	<p>-develop their fluency in additive relationships within 10, using a range of activities and games.</p> <p>-draw on their knowledge of the composition of numbers to complete written equations.</p> <p>-revisit strategies for addition and subtraction within 10 and apply these to a range of questions,</p>

					including written equations.
Independence Resilience Respect Team-work Creativity Aspirational.					