Year 1 Maths Spring medium Term plan

Spring	Number: Addition and Subtraction (within 20)	Number: Place Value (within 50) (Multiples of 2, 5 and 10 included)	Measurement: Length and Height	Measurement: Weight and Volume

Addition and Subtraction

NC Objectives:

•Represent and use number bonds and related subtraction facts within 20

•Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.

•Add and subtract one-digit and two digit numbers to 20, including zero.

•Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = $\square$ – 9

Week	Small step	Key Questions:	Notes and Guidance	Assessment
	Add by counting on	What number did you start with? Then what happened? Now what do I have? What does each number represent? What do the counters represent? How can I represent counting on using practical equipment? How can I represent counting on using a bar model or a number line?	Children explore addition by counting on from a given number. They begin to understand that addition is commutative and that it is more efficient to start from the largest number. It is important that children see that they are not just adding two separate numbers or items, they are adding to what they already have. Ensure children do not include their start number when counting on.	
	Find and make number bonds	What strategy could you use to make sure you find all the number bonds? What number bond can we see? How does this help us find the number bond to 20? How does knowing your number bonds	Children see that working systematically helps them to find all the possible number bonds to 20 They will use their knowledge of number bonds to 10 to find number bonds to 20 Using examples such as, 7 + 3, 17 + 3 or 7 + 13 encourages children to see	

		to 10 help you to work out your number bonds to 20?	the link between bonds to 10 and bonds to 20 and reinforces their understanding of place value.	
	Add by making 10	How can you partition a number and use your number bonds to 10 to help you? How does using the counters help you to see this strategy? How does using a number line help you to see this strategy?	Children add numbers within 20 using their knowledge of number bonds. It is important that children work practically using ten frames and/or number lines to help them see how number bonds to 10 can help them calculate. They will move towards using this as a mental strategy.	
	Subtraction- not crossing 10	How many objects were there at first? Then what happened to the objects? How many objects are there now? If Mo ate nothing, what number would we use to represent this? How do we write this as a calculation? What does the zero represent in this calculation? If Mo ate all of the biscuits, what number would we be left with? How do we write this as a calculation? What does the zero represent in this calculation?	Children build on the language of subtraction, recognising and using the subtraction symbol within 20 The use of zero is important so children know that when nothing is taken away, the start number remains the same or when the whole group is taken away, there will be nothing left. They will also use the part-whole model alongside practical equipment to reinforce number bonds within 20	
	Subtraction – crossing 10 (1)	How can you partition a number to help you subtract? How does using the counters help you to see this strategy? How does using a number line help you to see this strategy? Can you think of another way to represent this problem?	For the first time, children will be introduced to subtraction where they have to cross ten. This small step focuses on the strategy of partitioning to make ten. Children should represent this using concrete manipulatives or pictorially to begin with. Ten frames and number lines are particularly useful to model the structure of this strategy. Children will move towards using this as a mental	

			strategy.	
	Subtraction – crossing 10 (2)	How do the counters and bar models help you to subtract? Which method would you use to show your thinking and why? Did you count forwards or backwards? Why?	Children subtract numbers, within 20, crossing the 10. Children begin to understand the different structures of subtraction (taking away, partitioning, difference). They use concrete manipulatives and pictorial methods to support their understanding. One of the most difficult concepts for children is finding the difference where they subtract to calculate how many more.	
	Related Facts	What's the same and what's different? If we know 12 + 1 = 13, what else do we know? Can you see any patterns? If we know that 15 – 3 = 12, why can't we say 3 − 15 = 12?	Children explore addition and subtraction fact families for numbers within 20. They should work concretely and pictorially to find links between the addition and subtraction sentences. They should recognize that addition and subtraction are inverse operations. Children should begin to understand that addition is commutative but subtraction is not.	
	Compare number sentences	What do each of the symbols mean? Do you always have to work out the answers to be able to compare calculations? Why? Why might Tommy put 8 into the example below? e.g. 7 + 1 = ___ − 2	Children compare number sentences within 20 using inequality symbols. Children may still need to use concrete manipulatives or draw images to help them compare calculations. They should be encouraged to look at whether it is always necessary to have to work out the answers to calculations in order to compare them.	

Number: Place value (within 50)

NC Objectives :

•Count to 50 forwards and backwards, beginning with 0 or 1, or from any number.

•Count, read and write numbers to 50 in numerals.

•Given a number, identify one more or one less. **•Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.** **• Count in multiples of twos, fives and tens.**				
	Numbers to 50	What happens when we get to 10? ___ ones make ___ ten. How many groups of 10 can we see in the number ___ ? How does the ten frame show groups of 10?	Children build on previous learning of numbers to 20 They learn about grouping in 10s and the idea of 1 ten being equal to 10 ones is reinforced. Children count forwards and backwards within 50 and use a number track to support their understanding of this.	
	Tens and ones	How many tens are there? How many ones are there? What number does that make? How can you exchange ten ones for one ten using different representations?	Children use their knowledge from the previous step to look at how many groups of tens and ones there are in a number. They will use a range of concrete materials to do this. It is important that children understand how a number is made up of tens and ones. For example, the number 34 is made up of 3 tens and 4 ones	
	Represent numbers to 50	Which part represents the tens? Which part represents the ones? What do you notice about the numbers 30? How many tens are there? How many ones?	Children represent numbers to 50 using a variety of concrete materials. Children should be able to state how a number is made up. For example, 29 is made up of 2 tens and 9 ones.	
	One more one less	What number is shown? How do you know? How many tens are there in ___? How many ones? When finding one more and one less than, which column changes? Why?	Building on previous learning of tens and ones, children will start to compare numbers finding one more and one less than given numbers up to 50 Children build numbers concretely before using number tracks and 1–50 grids.	
	Compare objects within 50	What could we use to represent the muffins?	Children compare two sets of objects using the inequality symbols. Children use the	

		How could we layout the muffins to help us compare? What do and = mean? What is the smallest number you could have in the last box on the table?	language ‘more than’, ‘less than’ and ‘equal to’ alongside the correct symbols. The way numbers can be built and represented should be explored to find the simplest and easiest way to visualise the numbers when comparing.	
	Compare numbers within 50	What does and = mean? How many tens are there in ______? How many ones? What is one more than ______? What would one less be? How many more/less is ______ than ______ ?	Building on previous learning of comparing objects within 50, children compare two numbers using the inequality symbols. Children use the language ‘more than’, ‘less than’ and ‘equal to’ alongside the correct symbols to compare numbers.	
	Order numbers within 50	Which group is the largest? Which group is the smallest? How many are in group ______? How many more/less does group ___ have than group ___? Can you build the groups using cubes and compare? Explain what you notice. What is the smallest/largest number that could complete the empty box?	Children order numbers using the language, ‘largest’, ‘smallest’, ‘biggest’, ‘greatest’, ‘least’, ‘most’ and ‘equal to’. They continue to use inequality symbols to order numbers in ascending and descending order.	
	Count in 2s	How can we count the socks and gloves? What does it mean to count in pairs? Can you describe the pattern on the grid? Why do you think this happens? What do you notice about the digits in the ones column for each of the numbers shaded in your grid? Will 25 appear on our number line?	Children build on previous learning of counting in twos and go beyond 20 up to 50 They will apply previous learning of one more and one less to counting forwards and backwards in twos. For example, two more than and two less than. The 1-50 grid will be used to spot and discuss patterns that emerge when counting in 2s.	

		Why?		
	Count in 5s	How can we count the fish and grapes? Can you describe the pattern on the grid? Why do you think this happens? What do you notice about the digits in the ones column for each of the numbers shaded in the grid? Will ______ appear on our number line? Why?	Children build on previous learning of counting in fives to go beyond 20 and up to 50 The 1-50 grid will be used to spot and discuss patterns that emerge when counting in 5s.	
Measurement: Length and Height **NC Objectives:** **•Measure and begin to record lengths and heights.** **•Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)**				
	Compare lengths and heights	Which person is taller/shorter? Which pencil is shorter/longer? Are we measuring the height or length of something? What is the same? What is different? How can we describe the height of the houses?	Children use and understand the language of length such as long, short, longer, shorter, tall, small, taller, smaller etc. They recognise this language will change depending on what type of length they are describing and comparing. They will understand that height is a type of length. Children should also be exposed to lengths that are equal to one another.	
	Measure length (1)	What other things could you use to measure how long a pencil is? Would you use the same piece of equipment to measure the length of the classroom? Why? What could you use to measure how tall you are? How much longer is the pencil than the rubber? How much shorter is the rubber than	Children use non-standard units such as cubes, hands and straws to measure length and height. They recognise that different non-standard units are more suitable for measuring the length and height of different objects. They need to understand that non-standard units should be exactly in line with the object to get an accurate measurement.	

		the pencil?		
	Measure length (2)	What do the numbers on the ruler mean? (1 cm etc) Where should we place the end of the object to start measuring? Does the ruler look like anything else we have used? (number line) Can you count how many cm the _______ measures? How does using a ruler help us to compare objects?	Children build on prior knowledge of measuring length and height using non-standard units and apply this to measuring using a ruler. They should be able to understand that objects can vary in length and size, so a standard unit of measurement is required. It is important that children know to measure from 0 cm	
Measurement: Weight and Volume **NC Objectives:** **•Measure and begin to record mass/weight, capacity and volume.** **•Compare, describe and solve practical problems for mass/weight: [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]**				
	Introduce Weight and Mass	Hold my two objects, which is heavier/lighter? How do you know? How can we prove this? If the balance scale is down, what does that tell us? If the balance scale is up, what does that tell us? If the balance is level, what does that tell us? Which of these objects is heavier? How do you know? Can you predict what the scale will do when I put these two objects on either side of the scale?	Children are introduced to weight and mass for the first time. They may already have concepts about mass from own personal experience of carrying objects. The use of balance scales is essential to form an understanding of comparing mass, they should be allowed to pick up and feel the mass of objects before putting them on the scales and seeing what happens.	
	Measure Mass	When the scales are balanced, what does this mean?	Children learn to use non-standard units (e.g. cubes, bricks) to weigh and compare	

		Can anyone think of any symbols we use in maths that are similar? If I add one more cube to this side, what will happen? How do you know? What if I take a cube away? What other objects could we use to weigh the mass of something? Which object do you predict will be heavier?	the mass of an object. Children use a non standard unit and recognise this stays the same to weigh the mass of an object. They use the non standard unit of measure to make the scales balance to work out how much an object weighs. Children learn that a non-standard unit of measure could be any object.	
	Compare Mass	How many cubes weigh the same as _______? Which object is heavier? Which object is lighter? Which object do you predict will be heavier/lighter? Can we order the objects from heaviest to largest? Can I weigh this object with cubes and this object with bricks and order them? Explain why.	Children continue to use non-standard units to weigh objects and now focus on comparing the mass of two objects. They use balance scales to compare two objects and use the language of 'heavier', 'lighter' and 'equal'. Once children are confident using this language they can use < and > to compare mass.	
	Introduce Capacity	Look at my bottle, is it full? Is it empty? Compare my two bottles, which has more liquid in? Which has less? How can we show the container is nearly full or nearly empty? What's the same? What's different? If the container is different can we compare the volume easily? Why?	Children are introduced to capacity. They explore the concept in a practical way, using a variety of containers. They compare the volume in a container by describing whether it is full or empty and use 'greater than' and 'less than' to further describe the volume. Children understand that when a container is full, the capacity is equal to the volume but when the container is empty the capacity is the same but the volume is zero.	
	Measure Capacity	How can we measure how much liquid	Children find the capacity of different	

		will fill my container? What could I use? Can I start measuring the capacity with a spoon and then switch to a jug? Why not? How many bowls of liquid fill the bottle? How many cups of liquid are in the bottle? How is this different? How is this the same?	containers using non standard units of measure. They understand to measure the capacity of a container the unit of measure must stay the same, for example the same cup, the same spoon etc. They explore the difference between capacity and volume by also measuring how much liquid can fill a container compared to how much liquid is in a container	
	Compare Capacity	Which container has the largest/smallest capacity? Can we order them from largest to smallest? Which container has the most or least volume? Look at these two containers, can we compare them? Can we show A has more than B but less than C?	Children compare the capacity of different containers using non standard units of measure. They use ‘more’, ‘less’ and ‘equal’ to compare volume and can use the symbols and = once they are confident using the correct language.	