



MATHS MEDIUM TERM PLANNING

Year 1 – Addition and Subtraction within 20 (Approximately 3 weeks)	
Objectives from Progression Document	read, write and interpret mathematical statements involving addition (+) and equals (=) signs read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs represent and use number bonds within 20 represent and use subtraction facts related to number bonds within 20 add and subtract one-digit and two-digit numbers to 20, including zero solve one-step problems that involve addition and subtraction
Previous Learning	Automatically recall number bonds to 5 Automatically recall some number bonds to 10 Understand different ways of making numbers up to 10 Use visual representations such as part-part whole up to 10 Solve real world mathematical problems with number up to ten <i>Addition and Subtraction statements within 10 (Autumn Term)</i>
Vocabulary	number line, add, plus, make, sum, total, near double, equals, is the same as (including equals sign), difference between, subtract, take away, minus, how many...?, how much...?
Key fact(s)	To know to put the biggest number first when counting on and back To know that addition is commutative (can be done both ways) To know that a number gets smaller when it is subtracted
Number facts for fluency	Fluency Bee Stage 3: 1 less (within 10) Add and subtract with 0
DfE Ready to Progress Guidance Pages https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897806/Maths_guidance_KS_1_and_2.pdf	1AS-1 Compose and partition numbers to 10 pages 23 - 28 1AS-2 Read, write and interpret additive equations pages 29 - 35 pages 29 - 35 1NPV-2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and = pages 13-15
NCETM Ready to Progress Exemplification https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/	1AS-1 Compose and partition numbers to 10 1AS-2 Read, write and interpret additive equations
Problem Solving and Reasoning Skills Objectives	recognise, describe and continue more complex patterns involving numbers or shapes make predictions and test these with examples, using mathematical language
Pre-assessment:	Year 1 addition and subtraction – addition and subtraction within 10

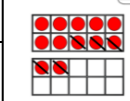
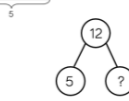
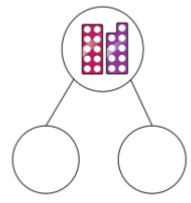
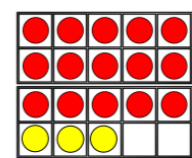


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Sequence of Learning						
White Rose Small Steps	Learning Intention	Key Questions	Sentence Stems	Problem-solving links	Comments	Extension and Greater Depth opportunities
Add by counting on within 20 (1AS 2)	To add on by counting on	What number did you start with? Then what happened? Now what do you have? Is it quicker to add 4 to 9 or to add 9 to 4? Is the answer the same? How can you use a number line to count on from ___? How do the counters show the question? How can you use a bar model or a number line to show counting on?	First, I had ____. Then I counted on ____. Now I have ____. To work out ____ + ____, I will count on ____ from _____.	Pairs of Numbers (maths.org) Using the numbers 1 to 10 to make different totals in pairs. Ladybirds in the Garden (maths.org) Finding possible totals Butterfly Flowers (maths.org) Developing idea of 10 and a single digit. Two Dice (maths.org)	Children may count all the items, starting from 1, rather than counting on from one of the numbers in the addition. Children may always start from the first number in the addition, rather than starting from the greater number.	Use the diagram and counters to tell your own number story for these calculations: $0 + 12 = \underline{\quad}$ $7 + 0 = \underline{\quad}$ $14 + \underline{\quad} = 17$ True or false? There are double the amount of numbers bonds to 20 than there are number bonds to 10 Prove it – can you use a systematic approach?
Add ones using number bonds	To apply number bonds to help add numbers up to 20	What is the same and what is different about 4 and 14? If you know that 4 plus 2 is equal to 16, how can you use this to work out 14 plus 2? What do you notice about 14 + 2 and 12 + 4? How many tens are there in each addition? How many ones are there? What is the number bond for 5 to 7? How can you use this to help work out 15 + ___ = 17? What about 5 + ___ = 17?	___ and ___ are a number bond to ____. So ___ and ___ are a number bond to ____. There are ___ ones altogether and ___ ten, so the total is _____.	Exploring additions. Finding all solutions.	If children are not secure with number bonds within 10, they may make errors when trying to find the related facts within 20. Children may not see that they can use a single number bond within 10 to find two different addition facts within 20.	 Rosie is calculating 16 - 7 Which of these methods is most helpful? Why? Could you find a way to partition 16 to help you subtract 7?
Find and make number bonds to 20	To work systematically to find number bonds to 20	How many more do you need to make 20? How does knowing the number bonds to 10 help you to work out the number bonds to 20? What is the same and what is different about 4 + 6 = 10 and 14 + 6 = 20? How do you know that you have found all the number bonds?	There are ___ red counters and ___ yellow counters. There are ___ counters altogether. This means that ___ and ___ are a bond to ____. ___ + ___ = ____ I know that ___ + ___ = 10, so ___ + ___ = 20.		Children may add a 10 to both numbers. Children may miscalculate if they are using counting on as a strategy for working out the number bond. Using equipment such as ten frames can help with this.	
Doubles	To double by adding two equal quantities together	How can you sort these pictures into doubles and not doubles? How do you know that this shows a double? How can you make double ___? How can you show the double differently? If double 2 is 4, what do you think double 3 is? What is the greatest double you can roll on a normal dice? What is 12 the double of?	___ + ___ = ____, so double ___ is ____. Double ___ is ____. ___ is the double of _____.		Some children may think that double 2 is 22 or double 3 is 33, because they can see the number twice. Children may find doubles beyond double 5 more challenging as they cross 10.	How many ways can you complete this number sentence? Use the number line to help you. $\square - \square = 11$




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<p>Near doubles</p>	<p>To use doubles to help work out near doubles</p>	<p>What does double mean? What is double ___? What is 1 more than ___? If ___ is 1 more than ___, how can you use this to work out ___ + ___? If ___ is 1 less than ___, how can you use this to work out ___ + ___?</p>	<p>___ is 1 more than ___, so I can work out double ___ and then add 1. Double ___ plus 1 is equal to ___. ___ is 1 less than ___, so I can work out double ___ and then subtract 1.</p>		<p>Children should see that this is a more efficient method than counting on. Children may not be able to quickly recall 1 more or 1 less than any number within 20.</p>	<p>Teddy works out $15 - 6$ This is Teddy's working out:</p> <p>$15 - 5 = 10 - 1 = 9$</p> <p>Why is Teddy's working out wrong?</p> <div data-bbox="2119 661 2404 1081"> <p>A Max has 12 balloons. 5 of the balloons burst. How many are left?</p> <p>B Max has 12 balloons. 5 of the balloons are red. There rest are blue. How many blue balloons does Max have?</p> <p>C Max has 12 blue balloons and 5 red balloons. How many more blue balloons than red balloons does he have?</p> <p>Which method would you use to solve each problem?</p>   </div> <div data-bbox="2404 661 2849 1081"> <p>Use the cards to write as many addition and subtraction sentences as you can.</p>  <p>nine add</p> <p>ten subtract</p> <p>nineteen is equal to</p> </div> <p>Circle the addition and subtraction number sentences that match the ten frames.</p>  <div data-bbox="2404 1291 2849 1417"> <p>Alex: Any number less than 11 would make this correct. $7 + 11 < 7 + \underline{\quad}$</p> </div> <p>Do you agree with Alex? Explain why.</p> <p>Whitney has 16 sweets and eats 7 of them.</p> <p>Mo has 17 sweets and eats 8 of them.</p> <p>Who has more sweets left? Explain how you know.</p>
<p>Subtract ones using number bonds</p>	<p>To show understanding of subtraction using number bonds knowledge</p>	<p>What is the same and what is different about 5 and 15? If you know that 7 subtract 2 is equal to 5, how can you use this to work out $17 - 2$? What do you notice about $17 - 2$ and $17 - 4$? How many tens are there in each subtraction? How many ones are there? What is the number bond for 5 to 8? How can you use this to help work out $18 - 5$?</p>	<p>The number bond for ___ to ___ is ___. So the number bond for ___ to ___ is ___. There will be ___ ones and ___ ten, so the answer is ___.</p>	<p>Number Balance (maths.org) Interactive tool that practises number bonds in a challenging context.</p>	<p>Children may be unsure of the number bond facts within 10. Children may not see the link between $4 - 1 = 3$ and $14 - 1 = 13$. Children may incorrectly use their number bond knowledge.</p>	
<p>Subtraction – counting back (crossing 10) (1AS 2)</p>	<p>To subtract by counting back on a number line and by crossing out</p>	<p>How many objects were there at first? Then what happened to the objects? How many objects are there now? How does using counters help you? How does using a number line help you? Can you think of another way to show the problem?</p>	<p>First there were ___. Then were ___ taken away. Now, there are ___. ___ subtract ___ is equal to ___.</p>		<p>When counting back, children may include the start number. Children may write calculations the wrong way around if they do not understand the importance of order when subtracting, thinking that it is the same as addition, where the order does not matter.</p>	
<p>Subtraction – finding the difference</p>	<p>To find the difference by comparing two amounts</p>	<p>Who has more? How do you know? How many more does have? What does "difference" mean? What strategy can you use to find the difference? What pictures/objects can you use to show this? How can you complete the sentences? How do the counters/bar models help you to subtract? Which method will you use to show your thinking? Why? Did you count forwards or backwards? Why?</p>	<p>The difference between ___ and ___ is ___. When finding the difference, I can... ___ is the difference between ___ and ___.</p>	<p>Find the Difference (maths.org) Practising subtraction. Finding all possibilities.</p>	<p>Children can use their skills of counting back and counting on to help them find the difference. Children may add instead of subtracting. Children may misinterpret the word "difference" in a mathematical context, for example describing the difference in appearance of the numbers.</p>	
<p>Related Facts (1AS 2)</p>	<p>To explore fact families in numbers within 20</p>	<p>What is the same and what is different? What addition sentences can you write? What subtraction sentences can you write? Can you write any of them another way? If you know that $12 + 1 = 13$, what else do you know?</p>	<p>___ can be done in any order. ___ cannot be done in any order. If I know that ___ + ___ = ___, then I also know that ___ - ___ = ___.</p>	<p>2,4,6,8 (maths.org) Creating number sentences and working systematically.</p>	<p>Children may work out subtractions correctly, but write them incorrectly, for example $7 - 12 = 5$. Children may think that by writing "=" in a different place they have written a different fact.</p>	



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		Can you see any patterns? If you know that $15 - 3 = 12$, why can you not say $3 - 15 = 12$? Use counters to show this.				<p>Dexter is working out which symbol to use to compare the number sentences.</p> <p> $14 - 5$ <input type="radio"/> $14 + 5$</p> <p>The missing symbol must be = because all of the numbers are the same.</p> <p>Do you agree with Dexter? Explain why.</p>
Missing number problems	To explore the inverse when solving missing number problems	If I add/subtract counters to/from the ten frame, how can you undo what I have done? How many counters do you need to add to/subtract from to get ___? If you know the whole and a part, how can you find the other part? Should the missing number be greater than or less than ___? How do you know?	First there were... Then... Now there are... If ___ is the whole and ___ is a part, then the other part must be ___.		Children may just look at the numbers and operation rather than thinking about the missing number element of the problem.	
Post-assessment:		WRH end of block addition and subtraction assessment – snip as feel appropriate				