Number: Addition and Subtraction

Number Bonds					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Represent and use number bonds and related subtraction facts within 20.	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.				
Continue the pattern 10 + 8 = 18 11 + 7 = 18 Can you make up a similar pattern for the number 17? How would this pattern look if it included subtraction? ***Missing numbers*** 9 + ? = 10 10 - ? = 9 *What number goes in the missing box?*	**Continue the pattern** 90 = 100 – 10 80 = 100 – 20 Can you make up a similar pattern starting with the numbers 74, 26 and 100? ***Missing numbers*** *91 + = 100* *100 - = 89* *What number goes in the missing box?*				

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Mental Calculations					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Add and subtract one digit and two-digit numbers to 20, including zero.	Add and subtract numbers using concrete objects, pictorial 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	Add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds		Add and subtract numbers mentally with increasingly large numbers.	Perform mental calculations, including with mixed operations and large numbers.
Working backwards Through practical games on number tracks and lines ask questions such as "where have you landed?" and "what numbers would you need to	**True or false?** Are these number sentences true or false? 73 + 40 = 113 98 – 18 = 70 46 + 77 = 123 92 – 67 = 35	**True or false?** Are these number sentences true or false? 597 + 7 =614 804 – 70 = 744 768 +	**True or false?** Are these number sentences true or false? 6.7 + 0.4 = 6.11 8.1 – 0.9 = 7.2	**True or false?** Are these number sentences true or false? 6.17 + 0.4 = 6.57 8.12 – 0.9 = 8.3 Give your reasons.	**True or false?** Are these number sentences true or false? 6.32 + ? = 8 Give your reasons.

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throw to land on other given numbers?" **What do you notice?** *11 – 1 = 10* *11 – 10 = 1* *Can you make up some other number sentences like this involving 3 different numbers?*	Give your reasons. **Hard and easy questions** *Which questions are easy / hard?* *23 + 10 =* *93 + 10 =* *54 + 9 =* *54 + 1 =* *Explain why you think the hard questions are hard?*	140 = 908 Give your reasons. **Hard and easy questions** *Which questions are easy / hard?* *323 + 10 =* *393 + 10 =* *454 - 100 =* *954 - 120 =* *Explain why you think the hard questions are hard?*	Give your reasons. **Hard and easy questions** *Which questions are easy / hard?* *13323 - 70 =* *12893 + 300 =* *19354 - 500 =* *19954 + 100 =* *Explain why you think the hard questions are hard?*	**Hard and easy questions** *Which questions are easy / hard?* *213323 - 70 =* *512893 + 300 =* *819354 - 500 =* *319954 + 100 =* *Explain why you think the hard questions are hard?*	**Hard and easy questions** *Which questions are easy / hard?* *213323 - 70 =* *512893 + 37 =* *8193.54 - 5.9 =* *Explain why you think the hard questions are hard?*

Written Method Calculations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Add and subtract numbers with two digits using column addition and subtraction.	Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction.	Add and subtract numbers with up to 4 digits using the formal written methods of column addition and	Add and subtract whole numbers with more than 4 digits, including using formal written methods (column addition and subtraction).	Solve problems and calculations using the order of the operations.

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		subtraction where appropriate.		

Convince me	**Convince me**	**Convince me**	**Convince me**	**Convince me**	**Convince me**
In my head I have two odd numbers with a difference of 2. What could they be? Convince me ***Missing numbers*** *Fill in the missing numbers* *12 + = 19* *20 - = 3*	What digits could go in the boxes? 7 ? - 2 ? =46 Try to find all of the possible answers. How do you know you have got them all?	?? + ?? + ?? The total is 201 Each missing digit is either a 9 or a 1. Write in the missing digits. Is there only one way of doing this or lots of ways?	??? – 666 = 8?5 What is the largest possible number that will go in the rectangular box? What is the smallest?	???? + 1475 = 6?24 What numbers go in the boxes? What different answers are there? Convince me	Three four digit numbers total 12435. What could they be? Convince me

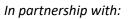| **Estimation and Inversing**					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Recognise and use the inverse relationship between addition and subtraction and use this to	Estimate the answer to a calculation and use inverse operations to check answers	Estimate and use inverse operations to check answers to a calculation	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

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	check calculations and solve missing number problems.				
Making an estimate Pick (from a selection of number sentences) the ones where the answer is 8 or 9. ***Is it true that?*** *Is it true that 3+4 = 4 + 3?*	**Making an estimate** Which of these number sentences have the answer that is between 50 and 60 74 - 13 55 + 17 87 – 34 ***Always, sometimes, never*** *Is it always, sometimes or never true that if you add three numbers less than 10 the answer will be an odd number.*	**Making an estimate** Which of these number sentences have the answer that is between 50 and 60 174 - 119 333 – 276 932 - 871 ***Always, sometimes, never*** *Is it always, sometimes or never true that if you subtract a multiple of 10 from any number the units digit of that number stays the same?* *Is it always, sometimes or never true that*	**Making an estimate** Which of these number sentences have the answer that is between 550 and 600 1174 - 611 3330 – 2779 9326 - 8777 ***Always, sometimes, never*** *Is it always sometimes or never true that the difference between two odd numbers is odd?*	**Making an estimate** Which of these number sentences have the answer that is between 0.5 and 0.6 11.74 - 11.18 33.3 – 32.71 ***Always, sometimes, never*** *Is it always, sometimes or never true that the sum of four even numbers is divisible by 4?*	**Making an estimate** Circle the number that is the best estimate to 932.6 - 931.05 1.3 1.5 1.7 1.9 ***Always, sometimes, never*** *Is it always, sometimes or never true that the sum of two consecutive triangular numbers is a square number?*

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		when you add two numbers together you will get an even number?			

Problem Solving					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ - 9	Solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

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Vocabulary					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
+ add + more + plus + sum + total + altogether - take away - subtract -minus -difference = equal to = equals (the same as) number bond number line more than/ less than number sentence inverse	+addition +one hundred more - subtraction - difference between - one hundred less calculate calculation symbol inverse column addition column subtraction	+altogether -fewer Exchange	+ increase -decrease Year 4 vocabulary taught in Years 1, 2 and 3	ones boundary tenths boundary	brackets order of operations BODMAS/BIDMAS