



Mount Charles
Addition and Subtraction
Key Objective K-Knowledge S-Skills

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
New Vocabulary	Number line Add, more, plus, make, sum, total, altogether Double Half, halve Equals, is the same (including equals sign) How many more to make...? How many more is,,, then,,,? How much more is...? Subtract, take away, minus.	Number bonds Inverse Near doubles Difference between How many fewer is...than...? How much less is...? plus part-whole model whole part number sentence altogether in total count on missing part How many are left? in total taken away subtract part subtraction addition count backwards How many more? count on Predict Take away Fact family	10 more 10 less Partition Calculate mentally	multiple approx. approximately column addition and subtraction	strategy efficient accurate exact diagram	Distance chart Efficient written method	Order of operations
Number Bonds	Shows awareness that numbers are made up (composed) of smaller numbers,	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				



	exploring partitioning in different ways with a wide range of objects	<p>K – value of numbers to 20 K- number bonds within 20 S – use concrete resources to add and subtract S – represent number bonds and related subtraction facts pictorially</p>	<p>K - numbers to 100 K – addition facts to 20 K- subtraction facts to 20 K – value of 2 digit numbers up to 100 S – recall addition facts to 20 S – recall subtraction facts to 20 S – derive facts up to 100</p>				
Mental calculation	<p>In practical activities, adds one and subtracts one with numbers to 10</p>	<p>add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>K – value of numbers to 20 K – the value of zero S – counting on and counting back in 1s S – counting on and counting back in 10s S- counting through 10</p> <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p>	<p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers <p>K – value of numbers to 100 K – subitising S – counting on and counting back in 1s S – counting on and counting back in 10s S- counting through 10</p> <p>show that addition of two numbers can be done in any order (commutative)</p>	<p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds <p>K – value of 3 digit numbers K – counting on and counting back in ones, tens and hundreds mentally K – variety of methods for bridging 10 or 100</p>		<p>add and subtract numbers mentally with increasingly large numbers</p> <p>K – a variety of methods for adding and subtracting mentally K – value of large numbers K – use known facts and the powers of 10, 100 or 1000 to calculate mentally S – partitioning to enable adding and subtraction S – choose appropriate methods to add and subtract with increasingly large numbers</p>	<p>perform mental calculations, including with mixed operations and large numbers</p> <p>K – variety of methods for performing mental calculations K – order of operations K – use known facts and powers of 10, 100 or 1000 to calculate mentally S – use order of operations correctly S – choose appropriate methods to calculate mentally</p> <p>use their knowledge of the order of</p>



		<p>(appears also in Written Methods)</p> <p>K- addition is represented by + K – subtraction is represented by – K – equals sign = means the same as K – know how to use and form +, - and = correctly S – read, write and interpret mathematical statements</p>	<p>and subtraction of one number from another cannot</p> <p>K – addition can happen in any order K – subtraction is not commutative S – choosing an appropriate order for adding based on the numbers S – using concrete objects and pictorial representations show that addition is commutative and subtraction is not.</p>	<p>S - partitioning to enable counting on or counting back S – use appropriate mental method to add and subtract:</p> <ul style="list-style-type: none"> - a 3 digit number and ones - a 2 digit number and tens <p>a 3 digit number and hundreds</p>			<p>operations to carry out calculations involving the four operations</p> <p>K – order of operations S – carry out calculations involving four operations</p>
Written Methods	<p>Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and + or - • Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways</p>	<p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)</p> <p>K- addition is represented by + K – subtraction is represented by – K – equals sign = means the same as K – know how to use and form +, - and = correctly</p>		<p>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p> <p>K - value of numbers with up to 3 digits K – how to use the formal written method of columnar addition and subtraction K – how to use formal written methods involving exchange S – set out formal methods of</p>	<p>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p> <p>K – a variety of methods for addition and subtraction with up to 4 digits K – when to choose to use a written method and when to use a mental method. S – set out formal methods of columnar addition</p>	<p>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>K – a variety of methods for addition and subtraction with more than 4 digits K – when to choose to use a written method and when to use a mental method.</p>	



	<p>with a wide range of object</p> <p>In practical activities, adds one and subtracts one with numbers to 10</p>	<p>S – read, write and interpret mathematical statements involving +, - and =</p>		<p>columnar addition and subtraction with up to 3 digits correctly. S – solve addition and subtraction calculations where exchanging is necessary in at least 1 column S – solve subtraction calculations involving exchanging where there is a zero in the 10s column</p>	<p>and subtraction with up to 4 digits correctly. S – solve addition and subtraction calculations where exchanging is necessary in at least 1 column S – solve subtraction calculations involving exchanging where there is a zero in the 10s and 100s column S – chose an appropriate method for the calculation based on the numbers.</p>	<p>S – set out formal methods of columnar addition and subtraction with more than 4 digits correctly. S – solve addition and subtraction calculations where exchanging is necessary in at least 1 column S – solve subtraction calculations involving exchanging where there is a zero in the 10s, 100s or 1000s column S – know a variety of mental methods for addition and subtraction S – chose an appropriate method for the calculation based on the numbers.</p>	
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Inverse operations, estimation and checking answers			<p>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>K – inverse relationship between addition and subtraction S – how to use the inverse relationship between addition and subtraction to check calculations S – use concrete and pictorial representations to explain the relationship between addition and subtraction S – solve missing number problems</p>	<p>estimate the answer to a calculation and use inverse operations to check answers</p> <p>K – mental calculation methods for addition, subtraction, multiplication and division K – inverse relationship between multiplication and division K – value of numbers S – use appropriate inverse operation for the calculation S – estimate the answer to a calculation</p>	<p>estimate and use inverse operations to check answers to a calculation</p> <p>same as Year 3</p>	<p>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>K – how to round numbers to a required degree of accuracy K – variety of contexts where rounding an answer is appropriate S- rounding numbers based on the context of the problem</p>	<p>use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>K- how to use rounding to estimate answers S – use estimation to check answers to the calculations</p>
Problem Solving	<p>Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three</p>	<p>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$</p>	<p>solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures</p>	<p>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</p> <p>K – range of mental and written methods</p>	<p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>K – variety of methods for</p>	<p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>Same as Year 5</p>



		<p>K – understand addition and subtraction K – how to use concrete objects and pictorial representations to represent a problem K – purpose of equal sign = and how it can be used in different places in a calculation S – add and subtract accurately S – represent a problem using concrete objects and pictorial representations S- solve one-step missing number problems</p>	<p>* applying their increasing knowledge of mental and written methods</p> <p>K – range of mental and written methods of calculation S - 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</p>	<p>K – confident knowledge of number facts and place value. K – how to calculate more complex addition and subtraction S - solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>for addition and subtraction K – range of context where adding and subtraction would be necessary S – use pictorial or abstract representations to show each step required S – to understand the steps required to solve a problem S – choose the appropriate method to solve a problem.</p>	<p>addition and subtraction K – wide range of contexts where adding or subtraction would be necessary S – to use appropriate abstract representations to show all the steps required S – to understand the steps required to solve a problem S – choose the appropriate methods to solve a problem S – explain why one method is more appropriate than the other</p>	
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