

HOLLINS GRUNDY PRIMARY SCHOOL

Happiness, Health and Respect for Confident, Creative Learners

Year 1

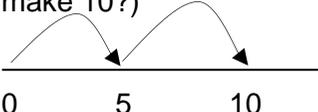
Maths Objectives Over view

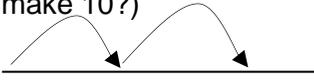
Term	Mathematical Strand	Time	Focus Objective (2014 National Curriculum)	Teachable 'Chunks' (Stages of Learning)	Calculation Strategies
		No. of lessons	Pupils should be taught to:	WALT:	
Autumn 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Read and write numbers from 1 to 20 in numerals and in words 	count in 1s to 100 recognise teen numbers count up to 20 objects. count and order numbers to 20. recognise dice and domino numbers without counting.	
	Unit 2 - Addition		<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition (+) and equals (=) signs Add one digit numbers to 20, including zero Solve one step problems that involve addition, using concrete objects and pictorial representations, and missing number problems 	add single-digit numbers by counting on. count on in 1s from any 2-digit number relate counting on to addition use fingers to count on and solve additions. use cubes to represent objects in a word problem and decide whether to add or subtract.	Begin to recognise that addition and subtraction can be done in any order. Use symbols to stand for an unknown number. $3+4 = \square$ $3 - \square = 7$ $\square + 4 = 7$ $\square = 3 + 4$ $7 = \square + 4$ $4 = \square - \triangle$ Identify near doubles, using already doubles known Begin to bridge through 10, when adding a single digit number.
	Unit 3- Subtraction		<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs Subtract one digit numbers to 20, including zero 	count back single digit number to solve subtraction recognise and use the subtraction sign. count back to solve subtraction.	Use patterns of similar calculations (e.g. $10-0 = 10$, $10-1=9$, $10-2=8$) <u>- = and missing numbers</u> $7-3 = \square$

			<ul style="list-style-type: none"> Solve one step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems 	use cubes to represent objects in a word problem and decide whether to add or subtract.	$7 - \square = 4$ $\square - 3 = 4$ Use different operation of subtraction and use the related vocabulary
	Unit 4 - Fractions		<ul style="list-style-type: none"> Recognise, find and name a half as one of two equal parts of an object, shape or quantity 	fold symmetrical shapes into halves and quarters recognise which shapes are divided into halves or quarters. divide shapes into halves and quarters	
	Unit 5- Measurement		<ul style="list-style-type: none"> Compare, describe and solve practical problems for length and height Measure and begin to record length and height 	compare lengths and heights using direct comparison use uniform non-standard units to measure length.	
	Unit 6 - Shape		<ul style="list-style-type: none"> Recognise and name common 2D shapes 	recognise, name and describe squares, rectangles, circles and triangles.	
	Unit 7 – Position and Direction		<ul style="list-style-type: none"> Describe position and directions and movements, including half, quarter and three-quarter turns 	describe position and direction using appropriate vocabulary. use language of position, direction and movement.	
	Unit 8 - Money		<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes 	recognise, name and know value of coins (1p, 2p, 5p, 10p, 20p, 50p, £1, £2). recognise and name coins 1p–£2	
Autumn 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens 	count in 2s to 20 & beyond read, write, count and order numbers 0–20. read and write 2-digit numbers in numerals count on and back in tens from any number (to 100) begin to count in 5s (multiples of 5 to 100) begin to recognise even numbers as being 2s numbers count objects by counting in 5s count objects by counting in 10s.	

			Count in 2s, 5s, 10s (to ten lots). order numbers 1–20 put three numbers in order begin to find a number in between two given numbers with a difference of 2.	
Unit 2 – Shape		<ul style="list-style-type: none"> Recognise and name common 3D shapes 	identify & describe cube, cuboid, cone, cylinder, sphere. identify & describe cube, cuboid, cone, cylinder, sphere. identify & describe cube, cuboid, cone, cylinder, pyramid, sphere begin to sort 3D shapes according to simple properties.	
Unit 3 – Measurement		<ul style="list-style-type: none"> Compare, describe and solve practical problems for mass and weight Measure and begin to record mass and weight 	compare weights by direct comparison use vocabulary: light, lighter, lightest, heavy, heavier, heaviest. begin to estimate, weigh and order using uniform non-standard units use vocabulary associated with weight.	
Unit 4 - Addition		<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition (+) and equals (=) signs Add two digit numbers to 20, including zero Solve one step problems that involve addition, using concrete objects and pictorial representations, and missing number problems 	find pairs that make 5 match pairs that make 5 to number sentences. find pairs that make 6 match pairs that make 6 to number sentences. find pairs which make 10 match pairs that make 10 to number sentences begin to understand that addition is commutative, i.e. the order does not matter. find pairs which make 10 find the missing number in number sentences subsidise fingers to 10.	Begin to recognise that addition and subtraction can be done in any order. Use symbols to stand for an unknown number. $3+4 = \square$ $3 - \square = 7$ $\square + 4 = 7$ $\square = 3 + 4$ $7 = \square + 4$ $4 = \square - \triangle$ Identify near doubles, using already doubles known Begin to bridge through 10, when adding a single digit number.

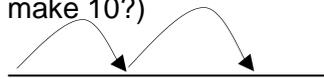
	Unit 5- Subtraction		<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs Subtract two digit numbers to 20, including zero Solve one step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems 	<p>count back single digit number to solve subtraction recognise and use the subtraction sign. count back to solve subtraction. use cubes to represent objects in a word problem and decide whether to add or subtract.</p>	<p>Use patterns of similar calculations (e.g. $10-0 = 10$, $10-1=9$, $10-2=8$)</p> <p><u>- = and missing numbers</u> $7-3 = \square$ $7 - \square = 4$ $\square - 3 = 4$</p> <p>Use different operation of subtraction and use the related vocabulary</p>
	Unit 6- Fractions		<ul style="list-style-type: none"> Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity 	<p>read $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$. recognise halves of shapes recognise halves & quarters of shapes.</p>	
	Unit 7 – Position and Direction		<ul style="list-style-type: none"> Describe position and directions and movements, including half, quarter and three-quarter turns 		
	Unit 8 – Statistics		<ul style="list-style-type: none"> Bar charts and sorting using venns and carrolls 		
Spring 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Given a number, identify one more and 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 	<p>say the number 1 more than (next number) 1–20. say the 'next number' for any number up to 20 find 1 more. count back 1 and find 1 less than numbers up to 10. say the number 1 more than any number less than 100 say the number 1 less than any number less than 100 say/write the number 1 more/1less know the number 1 more or 1 less than any number 1-100. begin to identify 10s and 1s in 2-digit numbers recognise teen numbers as one 10 and some 1s.</p>	Unit 1 – Number and Place Value
	Unit 2 – Multiplication		<ul style="list-style-type: none"> Solve one-step problems involving multiplication, by calculating the answer 	begin to solve repeated additions using coins and counting in 2s, 5s,	Understand the operation of multiplication as repeated

		using concrete objects, pictorial representations and arrays with the support of the teacher	10s. count in 2s, 5s and 10s and spot patterns. count in 2s, 5s and 10s to solve grouping problems.	addition e.g. $2 \times 5 =$ • • • • • • • • • • 2×5 or $5 + 5$ or $2+2+2+2+2=$
Unit 3- Division		<ul style="list-style-type: none"> Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	count a quantity by grouping in 10s or 5s.	Grouping - There are 10 sweets. How many people can have 5 each? (How many 5's make 10?) 
Unit 4 – Fractions		<ul style="list-style-type: none"> Recognise, find and name a half as one of two equal parts of an object, shape or quantity 	begin to halve even numbers to 20.	
Unit 5- Measurement		<ul style="list-style-type: none"> Compare, describe and solve practical problems for capacity /volume Measure and begin to record capacity /volume 	measure lengths using uniform units understand that cm is a measure of length recognise and name a ruler. begin to compare the capacity of different containers using uniform non-standard units. measure and compare capacities using uniform non-standard units. estimate, measure and compare capacities using uniform non-standard units use a capacity measure (measuring bottle) to measure and compare capacities.	
Unit 6 – Money		<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes 	recognise, name and know the value of coins make amounts 1p–19p using 10p and 1p coins. name and know value of all coins, 1p-£2 name and know value of £5 & £10 notes.	

Spring 2	Unit 1 – Number and Place Value	<ul style="list-style-type: none"> Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Read and write numbers from 1 to 20 in numerals and in words 	<p>count on in 1s from any number to 30</p> <p>count on from any number (<100) not crossing a multiple of ten</p> <p>say the number 10 more or 10 less than a given number.</p>	
	Unit 2 – Division	<ul style="list-style-type: none"> Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	<p>begin to halve odd numbers up to 10.</p>	<p>Grouping - There are 10 sweets. How many people can have 5 each? (How many 5's make 10?)</p>  <p>0 5 10</p> <p>Sharing - 6 sweets are shared between 2 people. How many sweets do they have each?</p>  <p>...</p>
	Unit 3 – Shape	<ul style="list-style-type: none"> Recognise and name common 2D and 3D shapes 	<p>recognise properties of 2D shapes</p> <p>use Venn diagrams to sort 2D shapes, begin to place shapes in the intersection.</p>	
	Unit 4 – Addition	<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition (+) and equals (=) signs Add two digit numbers to 20, including zero Solve one step problems that involve addition, using concrete objects and pictorial representations, and missing number problems 	<p>find pairs that make 5</p> <p>match pairs that make 5 to number sentences.</p> <p>find pairs that make 6</p> <p>match pairs that make 6 to number sentences.</p> <p>find pairs which make 10</p> <p>match pairs that make 10 to number sentences</p> <p>begin to understand that addition is commutative, i.e. the order does not matter.</p> <p>find pairs which make 10</p> <p>find the missing number in number</p>	<p>Begin to recognise that addition and subtraction can be done in any order.</p> <p>Use symbols to stand for an unknown number.</p> $3+4 = \square$ $3 - \square = 7$ $\square + 4 = 7$ $\square = 3 + 4$ $7 = \square + 4$ $4 = \square - \triangle$

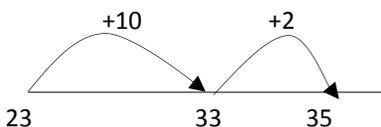
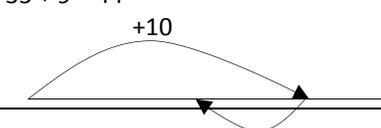
				sentences subsidise fingers to 10.	Identify near doubles, using already doubles known Begin to bridge through 10, and later 20 when adding a single digit number.
	Unit 5- Subtraction		<ul style="list-style-type: none"> • Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs • Subtract two digit numbers to 20, including zero • Solve one step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems 	<p>count back single digit number to solve subtraction recognise and use the subtraction sign. count back to solve subtraction. use cubes to represent objects in a word problem and decide whether to add or subtract.</p>	<p>Use patterns of similar calculations (e.g. $10-0 = 10$, $10-1=9$, $10-2=8$)</p> <p><u>- = and missing numbers</u> $7-3 = \square$ $7 - \square = 4$ $\square - 3 = 4$</p> <p>Use different operation of subtraction and use the related vocabulary</p>
	Unit 6 – Measurement		<ul style="list-style-type: none"> • Compare, describe and solve practical problems for length and height • Measure and begin to record length and height 	<p>measure length using uniform non-standard units compare lengths using appropriate vocabulary. measure a length using uniform non-standard units</p>	
Summer 1	Unit 1 – Fractions		<ul style="list-style-type: none"> • Recognise, find and name a half as one of two equal parts of an object, shape or quantity • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity 	find doubles to double 10 and related halves.	
	Unit 2 – Addition and Subtraction		<ul style="list-style-type: none"> • Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs • Add and subtract 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 	<p>add single-digit numbers by counting on. count on in 1s from any 2-digit number relate counting on to addition use fingers to count on and solve additions. use cubes to represent objects in a word problem and decide whether to add or subtract.</p>	<p>Begin to recognise that addition and subtraction can be done in any order. Use symbols to stand for an unknown number.</p> <p>$3+4 = \square$ $3 - \square = 7$ $\square + 4 = 7$</p> <p>$\square = 3 + 4$</p>

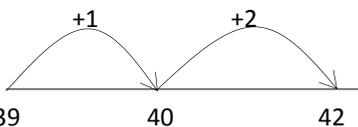
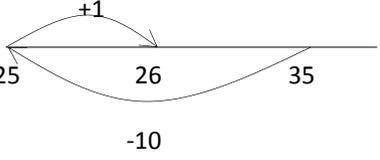
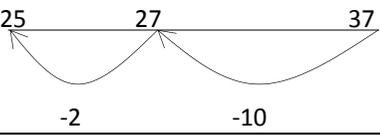
					$7 = \square + 4$ $4 = \square - \triangle$ Identify near doubles, using already doubles known Begin to bridge through 10, and later 20 when adding a single digit number. Use patterns of similar calculations (e.g. $10-0 = 10$, $10-1=9$, $10-2=8$) <u>- = and missing numbers</u> $7-3 = \square$ $7 - \square = 4$ $\square - 3 = 4$ Use different operation of subtraction and use the related vocabulary
	Unit 3 – Time		<ul style="list-style-type: none"> Compare, describe and solve practical problems for time Measure and begin to record time Sequence events in chronological order Tell the time to the hour and half past the hour and draw hands on a clock face to show these times 	read time to o'clock and half past on analogue clocks know months of the year know days of the week.	
	Unit 4 – Multiplication		<ul style="list-style-type: none"> Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	begin to solve repeated additions using coins and counting in 2s, 5s, 10s. count in 2s, 5s and 10s and spot patterns. count in 2s, 5s and 10s to solve grouping problems.	Understand the operation of multiplication as repeated addition e.g. $2 \times 5 =$ 2×5 or $5 + 5$ or $2+2+2+2+2=$
	Unit 5 - Money		<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes 	begin to make equivalent quantities using coins e.g. $20p=2 \times 10p$ & $20p=4 \times 5p$ etc.	
Summer 2	Unit 1 – Dates		<ul style="list-style-type: none"> Sequence events in chronological order 	know months of the year	

			know days of the Unit.	
Unit 2 Statistics		<ul style="list-style-type: none"> Collect and sort data to test a simple hypothesis. 		
Unit 3 – Number and Place Value		<ul style="list-style-type: none"> Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Read and write numbers from 1 to 20 in numerals and in words 		
Unit 4 – Multiplication		<ul style="list-style-type: none"> Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	<p>begin to solve repeated additions using coins and counting in 2s, 5s, 10s. count in 2s, 5s and 10s and spot patterns. count in 2s, 5s and 10s to solve grouping problems.</p>	<p>Understand the operation of multiplication as repeated addition e.g. $2 \times 5 =$</p> <p>• • • • • • • • • • 2×5 or $5 + 5$ or $2+2+2+2+2=$</p>
Unit 5 – Division		<ul style="list-style-type: none"> Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 		<p>Grouping - There are 10 sweets. How many people can have 5 each? (How many 5's make 10?)</p>  <p>0 5 10</p> <p>Sharing - 6 sweets are shared between 2 people. How many sweets do they have each?</p> 
Unit 6 – Time		<ul style="list-style-type: none"> Compare, describe and solve practical problems for time Measure and begin to record time Sequence events in chronological order Tell the time to the hour and half past the hour and draw hands on a clock face to show these times 		
Unit 7 – Money		<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes 		
Unit 8 – Addition &		<ul style="list-style-type: none"> Read, write and interpret mathematical 	add single-digit numbers by	Begin to recognise that

	Subtraction		<p>statements involving addition (+), subtraction (-) and equals (=) signs</p> <ul style="list-style-type: none"> • Add and subtract 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 	<p>counting on. count on in 1s from any 2-digit number relate counting on to addition use fingers to count on and solve additions. use cubes to represent objects in a word problem and decide whether to add or subtract. use known number facts to answer problems in number stories understand and solve number stories</p>	<p>addition and subtraction can be done in any order. Use symbols to stand for an unknown number. $3+4 = \square$ $3 - \square = 7$ $\square + 4 = 7$</p> <p>$\square = 3 + 4$ $7 = \square + 4$ $4 = \square - \triangle$</p> <p>Identify near doubles, using already doubles known Begin to bridge through 10, and later 20 when adding a single digit number.</p> <p>Use patterns of similar calculations (e.g. $10-0 = 10$, $10-1=9$, $10-2=8$)</p> <p><u>- = and missing numbers</u> $7-3 = \square$ $7 - \square = 4$ $\square - 3 = 4$</p> <p>Use different operation of subtraction and use the related vocabulary</p>
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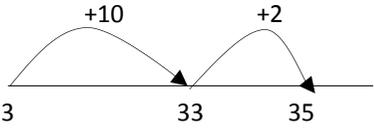
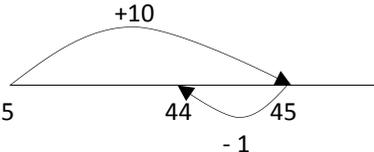
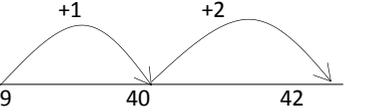
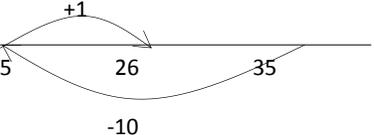
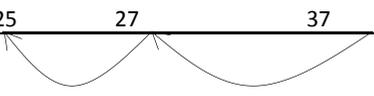
Year 2
Maths Objectives Overview

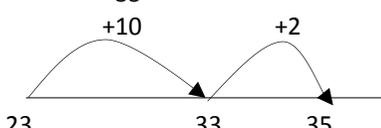
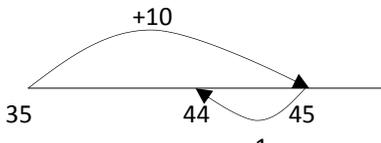
Term	Mathematical Strand	Time	Focus Objective (2014 National Curriculum)	Teachable 'Chunks' (Stages of Learning)	Calculation Strategies
		No. of lessons	Pupils should be taught to:	WALT:	
Autumn 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count in steps of 2, 3 and 5 from 0, and in tens from any given number, forward or backward Read and write numbers to at least 100 in numerals and in words Use place value and number facts to solve problems 	<ul style="list-style-type: none"> complete patterns counting in 2s, 5s and 10s/ draw these on a number line and relate these to counting <p>MOS begin to locate numbers on a 0–100 landmarked line beaded lines and number squares.</p> <ul style="list-style-type: none"> say what each digit in a 2-digit number represents partition 2-digit numbers into tens and ones and recombine <p>? Solve problems</p> <ul style="list-style-type: none"> compare 2-digit numbers using the < and > signs. 	
	Unit 2 - Addition		<ul style="list-style-type: none"> Recall and use addition facts to 20 fluently and derive and use related facts up to 100 Solve problems with addition – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 	<ul style="list-style-type: none"> learn bonds to 20 recognise and work out multiple of 10 bonds to 100 recognise there is a relationship between bonds to 10 and multiple of 10 bonds to 100. relate known number bonds to context-based problems ask and answer questions looking for number patterns 	<p>Use patterns of similar calculations.</p> $14 + 5 = 10 + \square$ <u>Partition into tens and ones and recombine</u> $12 + 23 = 10 + 2 + 20 + 3$ $= 30 + 5$ $= 35$ Refine to $23 + 12 = 23 + 10 + 2 =$ $= 33 + 2$ $= 35$  <p><u>Add 9 or 11 by adding 10 and adjusting by 1</u> $35 + 9 = 44$</p> 

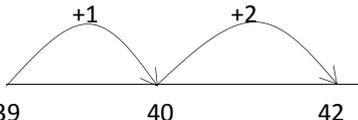
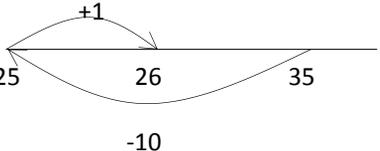
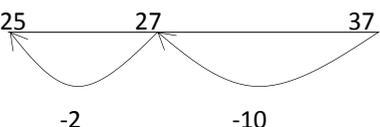
					$\begin{array}{r} 35 \\ 44 \\ 45 \\ - 1 \\ \hline \end{array}$
Unit 3- Subtraction		<ul style="list-style-type: none"> Recall and use subtraction facts to 20 fluently and derive and use related facts up to 100 Solve problems with subtraction – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 	<ul style="list-style-type: none"> use known bonds to 20 to solve related subtractions. ? 100 use their bonds to 20 to solve subtractions. 	<p>Use known number facts to subtract mentally. Use patterns of similar calculations $14 + 5 = 20 - \square$</p> <p><u>Find a small difference by counting up</u> $42 - 39 = 3$</p>  <p>39 40 42</p> <p><u>Subtract 9 or 11, begin to add/subtract 19 Or 21</u> $35 - 9 = 26$</p>  <p>25 26 35</p> <p>-10</p> <p><u>Use known number facts and place value to subtract</u> (partition second number only) $37 - 12 = 37 - 10 - 2$ $= 27 - 2$ $= 25$</p>  <p>25 27 37</p> <p>-2 -10</p>	
Unit 4 – Shape		<ul style="list-style-type: none"> Identify and describe the properties of 2D shapes, including the number of sides Compare and sort common 2D shapes and everyday objects 	<ul style="list-style-type: none"> recognise and name squares, rectangles, circles, triangles, ovals, hexagons and quadrilaterals and their properties compare 2D shapes to everyday objects and sort them accordingly 		
Unit 5 - Fractions		<ul style="list-style-type: none"> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects and quantity Write simple fractions and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 	<ul style="list-style-type: none"> recognise, read and write fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{3}$ and $\frac{2}{3}$.) count in steps of $\frac{1}{2}$ and $\frac{1}{4}$ of shapes. 		

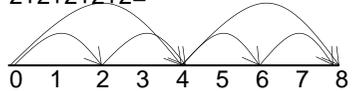
	Unit 6- Measurement		<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length / height in any direction, to the nearest appropriate unit, using rulers Compare and order lengths / height and record the results using < and > and = signs 	<ul style="list-style-type: none"> understand the need for a standard unit use a uniform unit to measure lengths. begin to estimate and measure in centimetres and metres begin to know whether to measure in cm or metres. ? 	
	Unit 7 – Position and Direction		<ul style="list-style-type: none"> Order and arrange combinations of mathematical objects in patterns and sequences Use mathematical vocabulary to describe position, direction and movement including distinguishing between rotation as a turn in terms of right angles for quarter turn, half and three- quarter turns (clockwise and anti-clockwise) and movement in a straight line 	<ul style="list-style-type: none"> tessellate shapes. use language of position, understand vocabulary: in, on, under, over, behind, above, in front of, next to, between, left, right, forward, backward, top, middle, bottom, inside, outside, use language of direction and movement understand vocabulary: quarter turn, half turn turns (clockwise and anti-clockwise). 	
	Unit 8 - Money		<ul style="list-style-type: none"> Recognise and use symbols (£) and pence (p); combine to make a particular value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit 	<ul style="list-style-type: none"> recognise & know value of coins 1p-£2 and add several coins by counting on in £, 10ps and 1ps. understand that a 10p coin has the same value as ten 1p coins. Know £1=100p add two amounts of money (<£1) not crossing £1 but crossing 10ps by counting on in 10ps and then 1ps starting with the larger number. find change from ten and twenty (£ or p) by counting up in ones begin to understand counting up is method of solving subtraction (money). 	
Autumn 2	Unit 1 – Statistics		<ul style="list-style-type: none"> Interpret and construct simple pictograms, tally chart, block diagrams and simple tables Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity Ask and answer questions about totalling and comparing categorical data 	<ul style="list-style-type: none"> use tally charts to record data complete a pictogram and interpret and complete pictograms and block graphs where one picture or block represents one item. interpret and complete a pictogram using one symbol to represent two children. 	

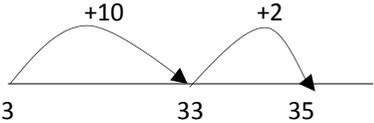
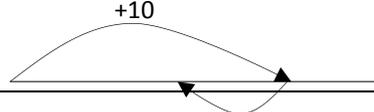
			<ul style="list-style-type: none"> construct and interpret a block graph. 	
Unit 2 – Time		<ul style="list-style-type: none"> Compare and sequence intervals of time Tell and write the time to five minutes, including quarter past / to the hour and draw the hands on a clock face to show these times 	<ul style="list-style-type: none"> recognise and identify units of time: minutes, hours, days, weeks, months and years begin to know how to express each unit of time in terms of another, smaller unit, e.g. 4 weeks in a month, 24 hours in a day, etc. understand how long an hour, a minute and a second is and recognise and use these units of time. tell the time on analogue and digital clocks to the nearest quarter of an hour (quarter past, half past, quarter to and o'clock). Tell the time on an analogue clock to the nearest 5 minutes (twenty to etc.) 	
Unit 3 – Number and Place Value		<ul style="list-style-type: none"> Recognise the place value of each digit in a two-digit number Identify, represent and estimate numbers using different representations, including the number line Use place value and number facts to solve problems 	<ul style="list-style-type: none"> order three 2-digit numbers. know what each digit represents in 2-digit numbers and numbers up to 100. show using various practical apparatus how different numbers can be made up. E.g. $26 = 2 \text{ 10's and } 6 \text{ 1's}$ / $1 \times 10 \text{ and } 12$. compare two numbers showing their position on a number line. solve problems using partitioning. 	
Unit 4- Fractions		<ul style="list-style-type: none"> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects and quantity Write simple fractions and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 	<ul style="list-style-type: none"> find half, third and a quarter of numbers of objects. find a third of a number of objects by sharing between three. find a quarter of numbers up to 40 by halving twice (whole number answers); begin to find $\frac{3}{4}$ of amounts. 	
Unit 5 - Addition		<ul style="list-style-type: none"> Add using concrete objects, pictorial representations, and mentally including: a two digit number and ones Show that addition of two numbers can be done in any order (commutative) Solve problems with addition – using 	<ul style="list-style-type: none"> using practical apparatus begin to add 2-digit numbers counting on in 10s and 1s. Reverse calculations to make them easier to answer. Use practical apparatus to solve 	<u>Partition into tens and ones and recombine</u> $12 + 23 = 10 + 2 + 20 + 3$ $= 30 + 5$ $= 35$ Refine to

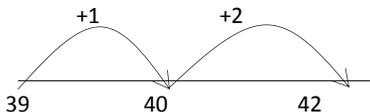
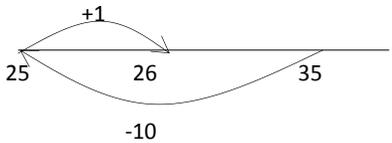
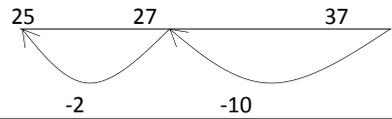
			<p>concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods</p>	<p>addition word problems involving money, quantities and measures.</p> <ul style="list-style-type: none"> Write down our calculations when solving problems. 	$23 + 12 = 23 + 10 + 2 =$ $= 33 + 2$ $= 35$  <p><u>Add 9 or 11 by adding 10 and adjusting by 1</u></p> $35 + 9 = 44$ 
Unit 6- Subtraction			<ul style="list-style-type: none"> Subtract using concrete objects, pictorial representations, and mentally including: a two digit number and ones Show that subtraction of two numbers cannot be done in any order Solve problems with subtraction – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 	<ul style="list-style-type: none"> using practical apparatus 	<p>Use known number facts to subtract mentally. Use patterns of similar calculations</p> $14 + 5 = 20 - \square$ <p><u>Find a small difference by counting up</u></p> $42 - 39 = 3$  <p><u>Subtract 9 or 11, begin to add/subtract 19 Or 21</u></p> $35 - 9 = 26$  <p><u>Use known number facts and place value to subtract</u> (partition second number only)</p> $37 - 12 = 37 - 10 - 2$ $= 27 - 2$ $= 25$ 

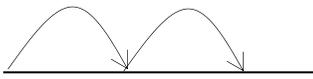
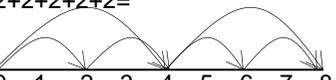
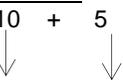
					-2 -10
	Unit 7 – Measurement		<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure mass to the nearest appropriate unit, using scales Compare and order mass and record the results using < and > and = signs 	<ul style="list-style-type: none"> begin to know standard units of weight (g and kg) begin to read a scale marked in intervals of 100g. compare 2 weights and record using the < and > signs. 	
Spring 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Compare and order numbers from 0 up to 100; use < and > and = signs Use place value and number facts to solve problems 	<ul style="list-style-type: none"> Recognise the = sign as a balance. And creating balancing calculations x3 compare 2-digit numbers using the < and > signs. Solve missing number problems using the balance sign. 	
	Unit 2 – Addition		<ul style="list-style-type: none"> Add using concrete objects, pictorial representations, and mentally including: a two digit number and tens Show that addition of two numbers can be done in any order (commutative) Solve problems with addition – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 		<p><u>Partition into tens and ones and recombine</u> $12 + 23 = 10 + 2 + 20 + 3$ $= 30 + 5$ $= 35$</p> <p>Refine to $23 + 12 = 23 + 10 + 2 =$ $= 33 + 2$ $= 35$</p>  <p><u>Add 9 or 11 by adding 10 and adjusting by 1</u> $35 + 9 = 44$</p>  <p>Identify near doubles, using doubles already known. Add three small numbers by putting the largest first and/or find a pair totalling 10; partition in '5 and a bit'</p>

					<p>when adding 6, 7, 8 or 9, then recombine.</p> <p>Use known number facts to subtract mentally. Use patterns of similar calculations $14 + 5 = 20 - \square$</p> <p><u>Find a small difference by counting up</u> $42 - 39 = 3$</p>  <p><u>Subtract 9 or 11, begin to add/subtract 19 Or 21</u> $35 - 9 = 26$</p>  <p><u>Use known number facts and place value to subtract</u> (partition second number only) $37 - 12 = 37 - 10 - 2$ $= 27 - 2$ $= 25$</p> 
Unit 4 – Multiplication			<ul style="list-style-type: none"> Recall and use multiplication facts for the 2, 5 and 10 times tables, including recognising odd and even numbers Show that the multiplication of 2 numbers can be done in any order Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods and multiplication facts 	<ul style="list-style-type: none"> find a specified multiple in the 2s, 5s and 10s count, e.g. the 4th number in the 2s count. understand the \times sign begin to know the 2, 5 and 10 times-tables. 	<p><u>\times signs and missing numbers</u></p> $7 \times 2 = \square$ $\square = 2 \times 7$ $7 \times \square = 14$ $14 = \square \times 7$ $\square \times 2 = 14$ $14 = 2 \times \square$ $\square \times \triangle = 14$ $14 = \square \times \triangle$ <p>Understand the operation of multiplication as repeated addition e.g. $2 \times 5 =$</p>

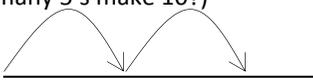
			including problems in context		<p>..... 2 X 5 or 5 + 5 or 2+2+2+2+2= </p> <p><u>Doubling multiples of 5 up to 50</u> 15 x 2 = 30 <u>Partition</u> 10 + 5 ↓ ↓ 20 + 10 = 30 OR</p> <p>x 10 5 2 20 10 = 30</p> <p>Know and use halving as the inverse of doubling.</p>
	Unit 5 – Shape		<ul style="list-style-type: none"> Identify and describe the properties of 2D shapes, including symmetry in a vertical line Compare and sort common 2D shapes and everyday objects 	<ul style="list-style-type: none"> Revisit the properties of 2D shapes recognise basic line symmetry. 	
	Unit 6 – Statistics		<ul style="list-style-type: none"> Interpret and construct simple pictograms, tally chart, block diagrams and simple tables Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity Ask and answer questions about totalling and comparing categorical data 	<ul style="list-style-type: none"> use tally charts to record data complete a pictogram and interpret and complete pictograms and block graphs where one picture or block represents one item. interpret and complete a pictogram using one symbol to represent two children. construct and interpret a block graph. 	
Spring 2	Unit 1 – Position and Direction		<ul style="list-style-type: none"> Use mathematical vocabulary to describe position, direction and movement including distinguishing between rotation as a turn in terms of right angles for quarter turn, half and three- quarter turns (clockwise and anti-clockwise) and movement in a straight line 		
	Unit 2- Measurement		<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure temperature to the nearest appropriate unit, using thermometers Compare and order temperatures and record the results using < and > and = signs 	<ul style="list-style-type: none"> read temperatures on a thermometer including negative numbers. X 3 compare 2 temperatures and record using the < and > signs 	

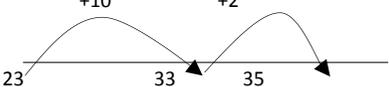
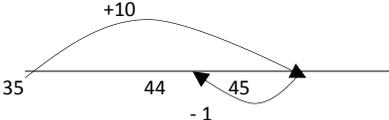
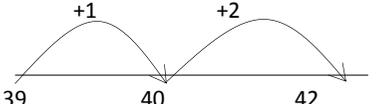
	Unit 3 – Shape		<ul style="list-style-type: none"> Identify and describe the properties of 3D shapes including the number of edges, vertices and faces Identify 2D shapes on the surface of 3D shapes Compare and sort common 3D shapes and everyday objects 	<ul style="list-style-type: none"> name and describe properties of 3D shapes; sphere, cube, cuboid, cylinder, cone and pyramid, with particular reference to the number and shape of their faces. name the 2D shape that makes the various faces of 3D shapes compare 3D shapes to everyday objects and sort them accordingly 	
	Unit 4 – Money		<ul style="list-style-type: none"> Recognise and use symbols (£) and pence (p); combine to make a particular value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 	<ul style="list-style-type: none"> recognise & know value of coins 1p-£2 & notes £5-£20 add several coins adding by counting on in £, 10ps and 1ps begin to write using £.p notation. work out the coins that are needed to pay an amount up to £1. Give change up to £1. 	
	Unit 5 – Addition		<ul style="list-style-type: none"> Add using concrete objects, pictorial representations, and mentally including: adding three one-digit numbers Show that addition of two numbers can be done in any order (commutative) Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems Solve problems with addition – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 		$14 + 5 = 5 + 14$ $14 + 5 = 10 + \square$ <p><u>Partition into tens and ones and recombine</u></p> $12 + 23 = 10 + 2 + 20 + 3$ $= 30 + 5$ $= 35$ <p>Refine to</p> $23 + 12 = 23 + 10 + 2 =$ $= 33 + 2$ $= 35$  <p><u>Add 9 or 11 by adding 10 and adjusting by 1</u></p> $35 + 9 = 44$ 

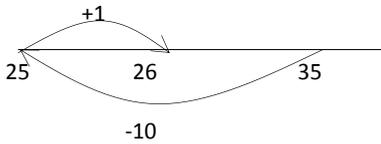
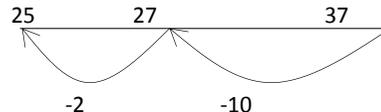
					$\begin{array}{r} 35 \\ 44 \\ 45 \\ - 1 \\ \hline \end{array}$ <p>Identify near doubles, using doubles already known. Add three small numbers by putting the largest first and/or find a pair totalling 10; partition in '5 and a bit' when adding 6, 7, 8 or 9, then recombine.</p>
	Unit 6- Subtraction		<ul style="list-style-type: none"> Subtract using concrete objects, pictorial representations, and mentally including: adding three one-digit numbers Show that subtraction of two numbers can be done in any order (commutative) Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems Solve problems with subtraction – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 		<p>Use known number facts to subtract mentally. Use patterns of similar calculations $14 + 5 = 20 - \square$ <u>Find a small difference by counting up</u> $42 - 39 = 3$</p>  <p><u>Subtract 9 or 11, begin to add/subtract 19 Or 21</u> $35 - 9 = 26$</p>  <p><u>Use known number facts and place value to subtract</u> (partition second number only) $37 - 12 = 37 - 10 - 2$ $= 27 - 2$ $= 25$</p> 
Summer 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count in steps of 2, 3 and 5 from 0, and in tens from any given number, forward or backward Read and write numbers to at least 100 in numerals and in words Use place value and number facts to solve 	<ul style="list-style-type: none"> recognise and count in multiples of 5 and 10 from any given number forwards and backwards. recognise and count in multiples of 2 and 3, from any given number forwards and backwards. 	Unit 1 – Number and Place Value

	Unit 2 – Division		<p>problems</p> <ul style="list-style-type: none"> Recall and use division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers Show that the division of 2 numbers cannot be done in any order Solve problems involving division, using materials, arrays, repeated addition, mental methods and multiplication facts including problems in context 	<ul style="list-style-type: none"> solve problems using known number facts. 	<p><u>Understand division as grouping and sharing</u> Grouping- There are 10 sweets. How many people can have 5 each? (How many 5's make 10?)</p>  <p>0 5 10</p> <p>15 sweets are shared between 3 people. How many sweets do they have each?</p>  <p><u>÷ = sign and missing numbers</u> $6 \div 2 = \square$ $\square = 6 \div 2$ $6 \div \square = 3$ $3 = 6 \div \square$ $\square \div 2 = 3$ $3 = \square \div 2$ $\square \div \triangle = 3$ $3 = \square \div \triangle$</p>
	Unit 3 – Multiplication		<ul style="list-style-type: none"> Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (x) and equals sign (=) Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods and multiplication facts including problems in context 		<p><u>x = signs and missing numbers</u> $7 \times 2 = \square$ $\square = 2 \times 7$ $7 \times \square = 14$ $14 = \square \times 7$ $\square \times 2 = 14$ $14 = 2 \times \square$ $\square \times \triangle = 14$ $14 = \square \times \triangle$</p> <p>Understand the operation of multiplication as repeated addition e.g. $2 \times 5 =$ $..... 2 \times 5$ or $5 + 5$ or $2+2+2+2+2=$</p>  <p>0 1 2 3 4 5 6 7 8</p> <p><u>Doubling multiples of 5 up to 50</u> $15 \times 2 = 30$</p> <p><u>Partition</u> $10 + 5$ </p>

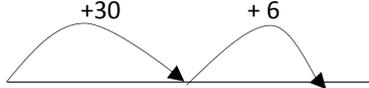
					$20 + 10 = 30$ OR $\begin{array}{r c c} x & 10 & 5 \\ \hline 2 & 20 & 10 \end{array} = 30$ Know and use halving as the inverse of doubling.
	Unit 4 - Money		<ul style="list-style-type: none"> Recognise and use symbols (£) and pence (p); combine to make a particular value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 	<ul style="list-style-type: none"> recognise & know value of coins 1p-£2 & notes £5-£20 add several coins adding by counting on in £, 10ps and 1ps begin to write using £.p notation. work out the coins that are needed to pay an amount up to £1. Give change up to £1. 	
	Unit 5 – Number and Place Value		<ul style="list-style-type: none"> Recognise the place value of each digit in a two-digit number Identify, represent and estimate numbers using different representations, including the number line Use place value and number facts to solve problems 	<ul style="list-style-type: none"> order three 2-digit numbers. know what each digit represents in 2-digit numbers and numbers up to 100. show using various practical apparatus how different numbers can be made up. E.g. 26= 2 10's and 6 1's/ 1 x 10 and 12. compare two numbers showing their position on a number line. solve problems using partitioning. 	
Summer 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Compare and order numbers from 0 up to 100; use < and > and = signs Use place value and number facts to solve problems 	<ul style="list-style-type: none"> Recognise the = sign as a balance. And creating balancing calculations x3 compare 2-digit numbers using the < and > signs. Solve missing number problems using the balance sign. 	
	Unit 2 – Fractions		<ul style="list-style-type: none"> Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects and quantity Write simple fractions and recognise the equivalence of 2/4 and ½ 	<ul style="list-style-type: none"> find half and a quarter of lengths. find a third of a length by sharing between three. Recognise the equivalence of fractions of shapes. 	
	Unit 3 – Division		<ul style="list-style-type: none"> Calculate mathematical statements for division within the tables and write them using the multiplication (÷) and equals sign (=) 		<u>Understand division as grouping and sharing</u> Grouping- There are 10 sweets. How many people can have 5 each? (How

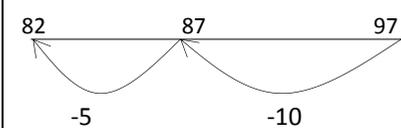
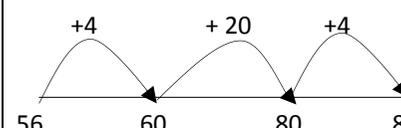
		<ul style="list-style-type: none"> Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods and multiplication facts including problems in context 		<p>many 5's make 10?)</p>  <p>0 5 10</p> <p>15 sweets are shared between 3 people. How many sweets do they have each?</p>  <p>.....</p> <p><u>÷ = sign and missing numbers</u></p> <p> $6 \div 2 = \square$ $\square = 6 \div 2$ $6 \div \square = 3$ $3 = 6 \div \square$ $\square \div 2 = 3$ $3 = \square \div 2$ $\square \div \triangle = 3$ $3 = \square \div \triangle$ </p>
Unit 4 – Measurement		<ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure capacity to the nearest appropriate unit, using measuring vessels Compare and order capacity and record the results using < and > and = signs 	<ul style="list-style-type: none"> begin to know standard units of capacity (ml and l) begin to read a scale marked in intervals of 10ml. compare 2 capacity measures and record using the < and > signs. 	
Unit 5 – Time		<ul style="list-style-type: none"> Compare and sequence intervals of time Tell and write the time to five minutes, including quarter past / to the hour and draw the hands on a clock face to show these times 	<ul style="list-style-type: none"> recognise and identify units of time: minutes, hours, days, weeks, months and years begin to know how to express each unit of time in terms of another, smaller unit, e.g. 4 weeks in a month, 24 hours in a day, etc. understand how long an hour, a minute and a second is and recognise and use these units of time. tell the time on analogue and digital clocks to the nearest quarter of an hour (quarter past, half past, quarter to and o'clock). Tell the time on an analogue clock to the nearest 5 minutes (twenty to etc.) 	
Unit 6 – Money		<ul style="list-style-type: none"> Recognise and use symbols (£) and pence (p); combine to make a particular value Find different combinations of coins that 	<ul style="list-style-type: none"> recognise & know value of coins 1p-£2 & notes £5-£20 add several coins adding by counting 	

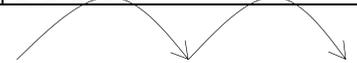
			<p>equal the same amounts of money</p> <ul style="list-style-type: none"> Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 	<p>on in £, 10ps and 1ps</p> <ul style="list-style-type: none"> begin to write using £.p notation. work out the coins that are needed to pay an amount up to £1. Give change up to £1. 	
	Unit 7 – Shape		<ul style="list-style-type: none"> Identify and describe the properties of 3D shapes including the number of edges, vertices and faces Identify 2D shapes on the surface of 3D shapes Compare and sort common 3D shapes and everyday objects 	<ul style="list-style-type: none"> name and describe properties of 3D shapes; sphere, cube, cuboid, cylinder, cone and pyramid, with particular reference to the number and shape of their faces. name the 2D shape that makes the various faces of 3D shapes compare 3D shapes to everyday objects and sort them accordingly 	
	Unit 8 – Addition & Subtraction		<ul style="list-style-type: none"> Recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100 Solve problems with addition and subtraction – using concrete objects and pictorial representations, including those involving numbers, quantities and measures and apply their increasing knowledge of mental and written methods 		<p><u>Partition into tens and ones and recombine</u> $12 + 23 = 10 + 2 + 20 + 3$ $= 30 + 5$ $= 35$</p> <p>Refine to $23 + 12 = 23 + 10 + 2 =$ $= 33 + 2$ $= 35$</p>  <p><u>Add 9 or 11 by adding 10 and adjusting by 1</u> $35 + 9 = 44$</p>  <p>Use known number facts to subtract mentally. Use patterns of similar calculations <input type="checkbox"/> $14 + 5 = 20 -$ <input type="checkbox"/></p> <p><u>Find a small difference by counting up</u> $42 - 39 = 3$</p>  <p><u>Subtract 9 or 11, begin to add/subtract 19</u></p>

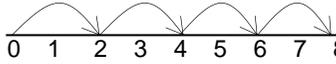
					<p>Or 21</p> <p>$35 - 9 = 26$</p>  <p>Use known number facts and place value to subtract (partition second number only)</p> <p>$37 - 12 = 37 - 10 - 2$</p> <p>$= 27 - 2$</p> <p>$= 25$</p> 

Year 3
Maths Objectives Over view

Term	Mathematical Strand	Time	Focus Objective (2014 National Curriculum)	Teachable 'Chunks' (Stages of Learning)	Calculation Strategies
		No. of lessons	Pupils should be taught to:	WALT:	
Autumn 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count from 0 in multiples of 4,8,50 and 100 more or less than a given number Compare and order numbers up to 1000 Read and write numbers up to 1000 in numerals and words Solve number problems and practical problems involving these ideas 		
	Unit 2 - Addition		<ul style="list-style-type: none"> Add numbers mentally including a three-digit number and ones Add numbers with up to three digits, using formal written methods of columnar addition Solve problems, including missing number problems using number facts, place value and more complex addition 		<p><u>+ = signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with larger numbers e.g. $14 + \square = 30$ $\square = 14 + 16$ $\square + 16 = 30$ $30 = \square + 16$</p> <p><u>Partition into tens and ones and recombine</u> Partition both numbers and recombine. Refine partitioning the second number only e.g. $36 + 53 = 53 + 30 + 6$ $= 83 + 6$ $= 86$</p>  <p>53 83 89</p> <p><u>Add a near multiples of 10 to a two-digit number</u> Use appropriate number e.g. $35+19$ is the same as $35 + 20 -1$.</p> <p><u>Pencil and paper procedures</u> $83 + 42 = 125$ either or</p> $\begin{array}{r} 83 \\ + 42 \\ \hline \end{array}$ refine $\begin{array}{r} 83 \\ + 42 \\ \hline \end{array}$ $\begin{array}{r} 80+3 \\ +40+2 \\ \hline \end{array}$

					$\begin{array}{r} 120 \text{ to } 5 \\ \underline{5} \quad 120 \\ 125 \quad 125 \end{array} \quad 120+5=125$
	Unit 3- Subtraction		<ul style="list-style-type: none"> Subtract numbers mentally including a three-digit number and ones Subtract numbers with up to three digits, using formal written methods of columnar addition Solve problems, including missing number problems using number facts, place value and more complex subtraction 		<p><u>- = signs and missing numbers</u> $34 + 5 = 40 - \square$ <u>Find a small difference by counting up</u> Use appropriate numbers e.g. $102 - 97 = 5$ <u>Subtract mentally a 'near multiple of 10' to or from a two digit number</u> Use appropriate numbers e.g. $78 - 59$ is the same as $78 - 60 + 1$</p> <p><u>Use known number facts and place value to subtract</u> $97 - 15 = 72$</p>  <p><u>Pencil and paper procedures</u> Complementary addition $84 - 56 = 28$</p> 
	Unit 4 – Multiplication		<ul style="list-style-type: none"> Recall and use multiplication facts for the 3, 4 and 8 multiplication tables Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including two-digit numbers times one-digit numbers using mental methods and progressing to formal written methods Solve problems, including missing number problems, involving multiplication, including integer scaling problems in which 'n' objects are connected to 'm' objects 		<p><u>x = signs and missing numbers</u> $16 \times 2 = \square$ $\square = 2 \times 16$ $16 \times \square = 32$ $32 = \square \times 16$ $\square \times 2 = 32$ $32 = 2 \times \square$ $\square \times \triangle = 32$ $32 = \square \times \triangle$</p> <p><u>Arrays and repeated addition</u> Continue to understand multiplication as repeated addition and continue to use arrays</p> <p>..... 2×5 or $5 + 5$ or $2+2+2+2+2=$</p>



					 <p><u>Doubling multiples of 5 up to 50</u> $35 \times 2 = 70$</p> <p>Partition</p> $\begin{array}{r l l} x & 30 & 5 \\ \hline 2 & 60 & 10 \end{array} = 70$ <p><u>Use known facts and place value to carry out simple multiplications</u> Use the same method as above (partitioning), e.g. $32 \times 3 = 96$</p> $\begin{array}{r l l} x & 30 & 2 \\ \hline 3 & 90 & 6 \end{array} = 96$
	Unit 5- Measurement		<ul style="list-style-type: none"> Measure, compare, add and subtract lengths 		
	Unit 6 - Shape		<ul style="list-style-type: none"> Draw 2D shapes using modelling materials Measure the perimeter of simple 2D shapes 		
	Unit 7 – Statistics		<ul style="list-style-type: none"> Interpret and present data using bar chart, pictograms and tables Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables 		
	Unit 8 - Money		<ul style="list-style-type: none"> Add and subtract amounts of money to give change, using both £ and p in practical contexts 		
Autumn 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Recognise the place value of each digit in a three digit number (hundreds, tens, ones) Identify, represent and estimate numbers using different representations Solve number problems and practical problems involving these ideas 		
	Unit 2 - Addition		<ul style="list-style-type: none"> Add numbers mentally including a three-digit number and tens Add numbers with up to three digits, using 		<p><u>+ = signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with larger numbers e.g.</p>

formal written methods of columnar addition

- Solve problems, including missing number problems using number facts, place value and more complex addition

$$14 + \square = 30 \quad \square = 14 + 16$$

$$\square + 16 = 30 \quad 30 = \square + 16$$

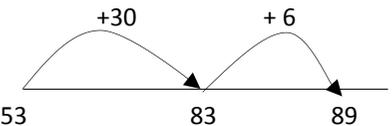
Partition into tens and ones and recombine

Partition both numbers and recombine. Refine partitioning the second number only e.g.

$$36 + 53 = 53 + 30 + 6$$

$$= 83 + 6$$

$$= 89$$



Add a near multiples of 10 to a two-digit number

Use appropriate number e.g. 35+19 is the same as 35 + 20 -1.

Pencil and paper procedures

$$83 + 42 = 125$$

either	or	
83	83	80+3
+ 42	refine +42	+40 + 2
120	to 5	120+5=125
<u>5</u>	<u>120</u>	
125	125	

Unit 3- Subtraction

- Subtract numbers mentally including a three-digit number and tens
- Subtract numbers with up to three digits, using formal written methods of columnar addition
- Solve problems, including missing number problems using number facts, place value and more complex subtraction

$34 + 5 = 40 - \square$
Find a small difference by counting up

Use appropriate numbers e.g.

$$102 - 97 = 5$$

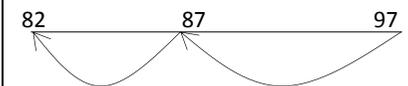
Subtract mentally a 'near multiple of 10' to or from a two digit number

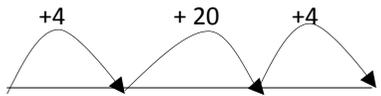
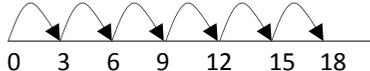
Use appropriate numbers e.g.

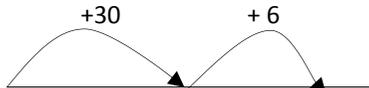
$$78 - 59 \text{ is the same as } 78 - 60 + 1$$

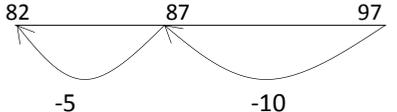
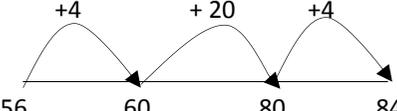
Use known number facts and place value to subtract

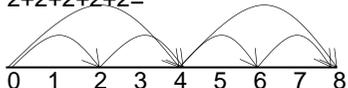
$$97 - 15 = 72$$

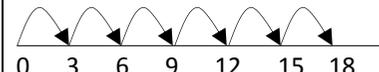
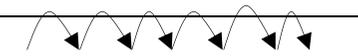


					<p style="text-align: center;">-5 -10</p> <p><u>Pencil and paper procedures</u> Complementary addition $84 - 56 = 28$</p>  <p style="text-align: center;">56 60 80 84</p>
	Unit 4 – Division		<ul style="list-style-type: none"> Recall and use division facts for the 3, 4 and 8 multiplication tables Write and calculate mathematical statements for division using the multiplication tables that they know, including two-digit numbers times one-digit numbers using mental methods and progressing to formal written methods Solve problems, including missing number problems, involving division, including integer scaling problems in which 'n' objects are connected to 'm' objects 		<p><u>÷ = sign and missing numbers</u> $30 \div 2 = \square$ $\square = 30 \div 2$ $30 \div \square = 15$ $15 = 30 \div \square$ $\square \div 2 = 15$ $15 = \square \div 2$ $\square \div \triangle = 15$ $15 = \square \div \triangle$</p> <p><u>Understand division as sharing and grouping</u> $18 \div 3$ can be modelled as: Grouping – How many 3's make 18?</p>  <p style="text-align: center;">0 3 6 9 12 15 18</p> <p>OR</p> <p>Sharing – 18 sweets between 3 18 sweets are shared between 3 people. How many sweets do they have each?</p>  <p><u>Reminders</u> $16 \div 3 = 5 \text{ r}1$ Sharing – 16 shared between 3, how many left over? Grouping – How many 3's make 16, how many left over? e.g.</p> 

					0 3 6 9 12 15 16
	Unit 5 – Measurement		<ul style="list-style-type: none"> Measure, compare, add and subtract mass 		
	Unit 6 – Shape		<ul style="list-style-type: none"> Draw 3D shapes using modelling materials Recognise 3D shapes in different orientations and describe them 		
	Unit 7- Fractions		<ul style="list-style-type: none"> Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominations Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators Recognise and show, using diagrams, equivalent fractions with small denominators 		
Spring 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count from 0 in multiples of 4,8,50 and 100 more or less than a given number Compare and order numbers up to 1000 Read and write numbers up to 1000 in numerals and words Solve number problems and practical problems involving these ideas 		
	Unit 2 – Addition		<ul style="list-style-type: none"> Add numbers mentally including a three-digit number and hundreds Add numbers with up to three digits, using formal written methods of columnar addition Estimate the answer to a calculation and use inverse operations to check answers Solve problems, including missing number problems using number facts, place value and more complex addition 		<p><u>+ = signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with larger numbers e.g. $14 + \square = 30$ $\square = 14 + 16$ $\square + 16 = 30$ $30 = \square + 16$</p> <p><u>Partition into tens and ones and recombine</u> Partition both numbers and recombine. Refine partitioning the second number only e.g. $36 + 53 = 53 + 30 + 6$ $= 83 + 6$ $= 86$</p> 

					<p>53 83 89</p> <p><u>Add a near multiples of 10 to a two-digit number</u></p> <p>Use appropriate number e.g. 35+19 is the same as 35 + 20 -1.</p> <p><u>Pencil and paper procedures</u></p> <p>83 + 42 = 125</p> <p>either or</p> $\begin{array}{r} 83 \\ + 42 \\ \hline 120 \\ \underline{5} \\ 125 \end{array}$ <p>refine to</p> $\begin{array}{r} 83 \\ + 42 \\ \hline 120 \\ \underline{5} \\ 125 \end{array}$ $\begin{array}{r} 80+3 \\ +40+2 \\ \hline 120+5=125 \end{array}$
Unit 3- Subtraction			<ul style="list-style-type: none"> Subtract numbers mentally including a three-digit number and hundreds Subtract numbers with up to three digits, using formal written methods of columnar addition Estimate the answer to a calculation and use inverse operations to check answers Solve problems, including missing number problems using number facts, place value and more complex subtraction 		<p>34 + 5 = 40 - <input type="checkbox"/></p> <p><u>Find a small difference by counting up</u></p> <p>Use appropriate numbers e.g.</p> <p>102 – 97 = 5</p> <p><u>Subtract mentally a ‘near multiple of 10’ to or from a two digit number</u></p> <p>Use appropriate numbers e.g.</p> <p>78 – 59 is the same as 78 – 60 + 1</p> <p><u>Use known number facts and place value to subtract</u></p> <p>97 – 15 = 72</p>  <p><u>Pencil and paper procedures</u></p> <p>Complementary addition</p> <p>84 – 56 = 28</p> 
Unit 4 – Fractions			<ul style="list-style-type: none"> Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominations Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators 		

			<ul style="list-style-type: none"> Recognise and show, using diagrams, equivalent fractions with small denominators Add and subtract fractions with the same denominator Compare and order unit fractions, and fractions with the same denominator 		
	Unit 5- Measurement		<ul style="list-style-type: none"> Measure, compare, add and subtract mass/ volume / capacity 		
	Unit 6 – Shape		<ul style="list-style-type: none"> Recognise that angles, recognise that two-right angles makes a half-turn, three make three quarters of a turn and four a complete turn; Identify whether angles are greater than or less than a right-angle 		
Spring 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Recognise the place value of each digit in a three digit number (hundreds, tens, ones) Identify, represent and estimate numbers using different representations Solve number problems and practical problems involving these ideas 		
	Unit 2 – Multiplication		<ul style="list-style-type: none"> Recall and use multiplication facts for the 3, 4 and 8 multiplication tables Solve problems, including missing number problems, involving multiplication, including integer scaling problems in which ‘n’ objects are connected to ‘m’ objects 		<p><u>x = signs and missing numbers</u> $16 \times 2 = \square$ $\square = 2 \times 16$ $16 \times \square = 32$ $32 = \square \times 16$ $\square \times 2 = 32$ $32 = 2 \times \square$ $\square \times \triangle = 32$ $32 = \square \times \triangle$</p> <p><u>Arrays and repeated addition</u> Continue to understand multiplication as repeated addition and continue to use arrays</p> <p>..... 2 X 5 or 5 + 5 or 2+2+2+2+2=</p>  <p><u>Doubling multiples of 5 up to 50</u> $35 \times 2 = 70$</p>

					<p>Partition</p> $\begin{array}{r l l} x & 30 & 5 \\ \hline 2 & 60 & 10 \end{array} = 70$ <p><u>Use known facts and place value to carry out simple multiplications</u> Use the same method as above (partitioning), e.g. $32 \times 3 = 96$</p> $\begin{array}{r l l} x & 30 & 2 \\ \hline 3 & 90 & 6 \end{array} = 96$
	Unit 3- Division		<ul style="list-style-type: none"> Recall and use division facts for the 3, 4 and 8 multiplication tables Solve problems, including missing number problems, involving division, including integer scaling problems in which 'n' objects are connected to 'm' objects 		<p><u>÷ = sign and missing numbers</u> $30 \div 2 = \square$ $\square = 30 \div 2$ $30 \div \square = 15$ $15 = 30 \div \square$ $\square \div 2 = 15$ $15 = \square \div 2$ $\square \div \triangle = 15$ $15 = \square \div \triangle$</p> <p><u>Understand division as sharing and grouping</u> $18 \div 3$ can be modelled as: Grouping – How many 3's make 18?</p>  <p>OR Sharing – 18 sweets between 3 18 sweets are shared between 3 people. How many sweets do they have each?</p>  <p><u>Reminders</u> $16 \div 3 = 5 \text{ r}1$ Sharing – 16 shared between 3, how many left over? Grouping – How many 3's make 16, how many left over? e.g.</p> 

					0 3 6 9 12 15 16
	Unit 4 – Fractions		<ul style="list-style-type: none"> Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominations Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators Recognise and show, using diagrams, equivalent fractions with small denominators Add and subtract fractions with the same denominator Compare and order unit fractions, and fractions with the same denominator Solve problems involving the above 		
	Unit 5 – Statistics		<ul style="list-style-type: none"> Interpret and present data using tables Solve one-step and two-step questions using information presented in tables 		
	Unit 6 – Time		<ul style="list-style-type: none"> Tell and write the time from an analogue clock, including Roman numerals from I to XII, and 12 hour and 24 hour clocks Estimate and read time with increasing accuracy to the nearest minute; Use vocabulary such as am / pm, morning, afternoon, noon and midnight Know the number of seconds in a minute and the number of days in each month, year and leap year 		
Summer 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count from 0 in multiples of 4,8,50 and 100 more or less than a given number Compare and order numbers up to 1000 Read and write numbers up to 1000 in numerals and words Solve number problems and practical problems involving these ideas 		
	Unit 2 – Multiplication		<ul style="list-style-type: none"> Recall and use multiplication facts for the 3, 4 and 8 multiplication tables Write and calculate mathematical 		<u>x = signs and missing numbers</u> $16 \times 2 = \square$ $\square = 2 \times 16$ $16 \times \square = 32$ $32 = \square \times 16$

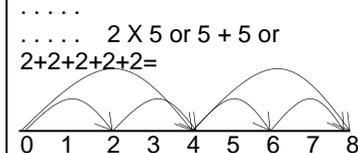
statements for multiplication using the multiplication tables that they know, including two-digit numbers times one-digit numbers using mental methods

- Solve problems, including missing number problems, involving multiplication, including integer scaling problems in which 'n' objects are connected to 'm' objects

$$\begin{array}{l} \square \times 2 = 32 \\ \square \times \triangle = 32 \end{array} \quad \begin{array}{l} 32 = 2 \times \square \\ 32 = \square \times \triangle \end{array}$$

Arrays and repeated addition

Continue to understand multiplication as repeated addition and continue to use arrays



Doubling multiples of 5 up to 50

$$35 \times 2 = 70$$

Partition

$$\begin{array}{r|l|l} x & 30 & 5 \\ \hline 2 & 60 & 10 \end{array} = 70$$

Use known facts and place value to carry out simple multiplications

Use the same method as above (partitioning), e.g. $32 \times 3 = 96$

$$\begin{array}{r|l|l} x & 30 & 2 \\ \hline 3 & 90 & 6 \end{array} = 96$$

Unit 3 – Time

- Tell and write the time from an analogue clock, including Roman numerals from I to XII, and 12 hour and 24 hour clocks
- Record and compare time in terms of seconds, minutes, hours and o'clock
- Use vocabulary such as am / pm, morning, afternoon, noon and midnight
- Compare durations of events, for example to calculate the time taken to complete particular tasks or events

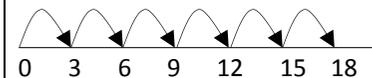
Unit 4 - Fractions

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit

			<ul style="list-style-type: none"> numbers or quantities by 10 Solve Problems involving the above 		
	Unit 5 - Shape		<ul style="list-style-type: none"> Recognise that angles, recognise that two-right angles makes a half-turn, three make three quarters of a turn and four a complete turn; Identify whether angles are greater than or less than a right-angle 		
Summer 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Recognise the place value of each digit in a three digit number (hundreds, tens, ones) Identify, represent and estimate numbers using different representations Solve number problems and practical problems involving these ideas 		
	Unit 2 – Fractions		<ul style="list-style-type: none"> Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominations Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators Recognise and show, using diagrams, equivalent fractions with small denominators Add and subtract fractions with the same denominator Compare and order unit fractions, and fractions with the same denominator Solve problems involving the above 		
	Unit 3 – Division		<ul style="list-style-type: none"> Recall and use division facts for the 3, 4 and 8 multiplication tables Write and calculate mathematical statements for division using the multiplication tables that they know, including two-digit numbers times one-digit numbers using mental methods Solve problems, including missing number problems, involving division, including 		<p><u>÷ = sign and missing numbers</u></p> $30 \div 2 = \square \quad \square = 30 \div 2$ $30 \div \square = 15 \quad 15 = 30 \div \square$ $\square \div 2 = 15 \quad 15 = \square \div 2$ $\square \div \triangle = 15 \quad 15 = \square \div \triangle$ <p><u>Understand division as sharing and grouping</u></p> <p>18 ÷ 3 can be modelled as:</p>

integer scaling problems in which 'n' objects are connected to 'm' objects

Grouping – How many 3's make 18?



OR

Sharing – 18 sweets between 3
18 sweets are shared between 3 people.
How many sweets do they have each?



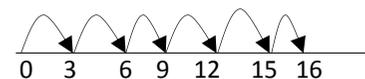
Reminders

$$16 \div 3 = 5 \text{ r}1$$

Sharing – 16 shared between 3, how many left over?

Grouping – How many 3's make 16, how many left over?

e.g.



Unit 4 – Statistics

- Interpret and present data using pictograms
- Solve one-step and two-step questions using information presented in and pictograms

Unit 5 – Time

- Tell and write the time from an analogue clock, including Roman numerals from I to XII, and 12 hour and 24 hour clocks
- Record and compare time in terms of seconds, minutes, hours and o'clock
- Use vocabulary such as am / pm, morning, afternoon, noon and midnight
- Compare durations of events, for example to calculate the time taken to complete

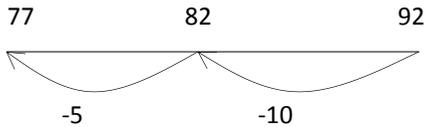
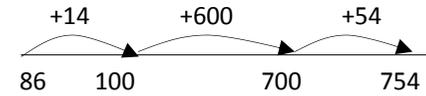
			particular tasks or events		
	Unit 6 – Money		<ul style="list-style-type: none"> • Add and subtract amounts of money to give change, using both £ and p in practical contexts 		
	Unit 7 – Shape		<ul style="list-style-type: none"> • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines 		
	Unit 8 – Addition & Subtraction		<ul style="list-style-type: none"> • Add and Subtract numbers mentally including a three-digit number and ones, tens or hundreds • Add and Subtract numbers with up to three digits, using formal written methods of columnar addition • Estimate the answer to a calculation and use inverse operations to check answers • Solve problems, including missing number problems using number facts, place value and more complex addition and subtraction 		

Year 4

Maths Objectives Over view

Term	Mathematical Strand	Time	Focus Objective (2014 National Curriculum)	Teachable 'Chunks' (Stages of Learning)	Calculation Strategies
		No. of Lessons	Pupils should be taught to:	WALT:	
Autumn 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Count in multiples of 6, 7, 9, 25 and 1000 Count backwards through zero to include negative numbers Order and compare number beyond 1000 Solve Number and practical problems that involve all of the above and with increasingly large positive numbers 	<ul style="list-style-type: none"> recognise what each digit represents in a 4-digit number read and write 4-digit numbers including using zeros as place-holders. recognise what each digit represents in a 4-digit number compare 4-digit numbers writing inequality sentences using < and >. place 4-digit numbers on landmarked lines use their knowledge of place-value to estimate the positions of numbers on number lines order 4-digit numbers using a line. read, use and compare negative numbers in the context of temperatures begin to understand negative numbers are lower/smaller the greater the digits e.g. -21 is less than -12. 	
	Unit 2 - Addition		<ul style="list-style-type: none"> Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Estimate and use inverse operations 	<ul style="list-style-type: none"> add two 3-digit numbers understand and use place-value to solve addition, writing it correctly. 	<p>= signs and missing numbers</p> <p>Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g.</p> $55 + \square = 80 \quad \square = 55 + 25$ $\square + 25 = 80 \quad 80 = \square + 25$

			<p>to check answers to a calculation</p> <ul style="list-style-type: none"> Solve addition two-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> add 3-digit numbers using written column method. 	<p><u>Partition into tens and ones and recombine</u> Either partition both numbers and recombine the second number only e.g. $55 + 37 = 55 + 30 + 7$ $= 85 + 7$ $= 92$</p> <p><u>Add the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $63 + 29$ is the same as $63 + 30 - 1$</p> <p><u>Pencil and paper procedures</u> $358 + 73 = 431$ either $\begin{array}{r} 358 \\ + 73 \\ \hline 11 \\ 120 \\ \hline 300 \\ 431 \end{array}$ or $\begin{array}{r} 300 + 50 + 8 \\ \hline 70 + 3 \\ \hline 300 + 120 + 11 = 431 \end{array}$</p> <p>Leading to $\begin{array}{r} 358 \\ + 73 \\ \hline 431 \end{array}$ Extend to decimals in the context of money</p>
	Unit 3-Subtraction		<ul style="list-style-type: none"> Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate Estimate and use inverse operations to check answers to a calculation Solve subtraction two-step problems in contexts, deciding which operations and methods to use and 	<ul style="list-style-type: none"> subtract 3-digit numbers using written method involving decomposition of the hundreds digit. subtract 3-digit numbers using expanded written column subtraction (decomposing in one column only). subtract a pair of 3-digit 	<p><u>- = signs and missing numbers</u> $77 + 15 = 92 - \square$</p> <p><u>Find a small difference by counting up</u> e.g. $5003 - 4996$ This can be modelled on an empty number line</p> <p><u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g.</p>

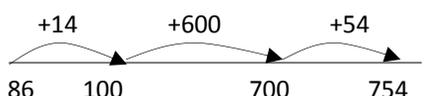
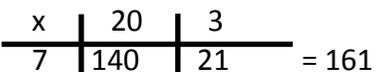
			<p>why.</p>	<p>numbers using an expanded written method involving decomposition in one column.</p>	<p>$93 - 49$ is the same as $93 - 50 + 1$</p> <p><u>Use known number facts and place value to subtract</u> $92 - 15 = 77$</p>  <p><u>Pencil and paper procedures</u> Complementary addition $754 - 86 = 668$</p> 
Unit 4 – Multiplication			<ul style="list-style-type: none"> • Recall multiplication facts for tables up to 12x12 • Use place value, known and derived facts to multiply mentally, including multiplying by 0 and 1; multiplying together 3 numbers • Recognise and use factor pairs and commutatively in mental calculations • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout • Solve problems involving multiplying and adding, including the distributive law to multiply two digit numbers by one digit integer scaling problems and harder correspondence problems such as ‘n’ objects are connected to ‘m’ objects 	<ul style="list-style-type: none"> • begin to recognise \times and \div facts for the 6 times-table. • know the 7 times-table • know other ‘tricky’ facts, e.g. 6×8, 7×8 and 6×7. • multiply 2-digit numbers by single-digit numbers, mentally and using the grid method. • spot and describe patterns • begin to know multiplication and division facts for the 9 times-table. • multiply 3-digit numbers by single-digit numbers using the grid method • use the grid method to multiply 3-digit numbers by single-digit numbers. • begin to estimate answers to 3- 	<p><u>\times = signs and missing numbers</u></p> $23 \times 4 = \square$ $\square = 4 \times 23$ $23 \times \square = 92$ $92 = \square \times 23$ $\square \times 4 = 92$ $92 = 4 \times \square$ $\square \times \triangle = 92$ $92 = \square \times \triangle$ <p><u>Partition</u> $23 \times 4 = 92$</p> $23 \times 4 = (20 \times 4) + (3 \times 4)$ $= 92$ <p>OR</p> <p>Use the grid method of multiplication (as below)</p> <p><u>Pencil and paper procedures</u> Grid method 23×7 is approximately $20 \times 10 =$</p>

				digit numbers multiplied by 1-digit numbers.	200 $\begin{array}{r c c} \times & 20 & 3 \\ \hline 7 & 140 & 21 \end{array} = 161$
	Unit 5- Measurement		<ul style="list-style-type: none"> Convert between different units of measure Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares 	<ul style="list-style-type: none"> convert cm to m and vice versa. convert multiples of 100,g to kilograms and vice versa, e.g. 600,g to 0.6,kg. convert multiples of 100,ml to litres and vice versa, e.g. 600,ml to 0.6 litres. convert between SI units of length find the perimeter of a rectangle by calculation find the perimeter of a rectilinear shape by calculation. Find area by counting squares 	
	Unit 6 - Shape		<ul style="list-style-type: none"> Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes Identify acute and obtuse angles and compare and order angles up to two right angles by size 	<ul style="list-style-type: none"> name and describe common 2D shapes including using the terms: polygon, triangle, quadrilateral, pentagon, hexagon, and octagon identify properties of shapes using terms: angle, right angle; sides; vertices; parallel; regular, irregular, opposite begin to classify and name different types of quadrilateral and triangles. 	
	Unit 7 – Position and Direction		<ul style="list-style-type: none"> Describe positions on a 2D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left / right and up / down 	<ul style="list-style-type: none"> use co-ordinates in the first quadrant use up/down and left/right to describe translational movement Plot specific points using 	

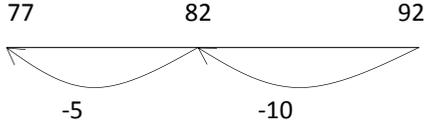
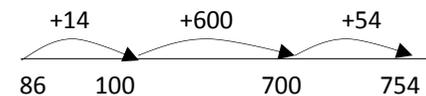
			<ul style="list-style-type: none"> Plot specified points and draw sides to complete a given polygon 	coordinates and complete given polygons.	
	Unit 8 - Money		<ul style="list-style-type: none"> Estimate, compare and calculate different money in pounds and pence 	<ul style="list-style-type: none"> Estimate and solve subtraction and addition of amounts of money mentally. 	
Autumn 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Find 1000 more or less than a given number Recognise the place value of each digit in a four-digit number (Thousand, hundreds, tens and ones) Order and compare numbers beyond 1000 Identify, represent and estimate numbers using different representations Round any number to the nearest 10, 100 or 1000 Solve Number and practical problems that involve all of the above and with increasingly large positive numbers 	<ul style="list-style-type: none"> Find 1000 more or less than a given number Recognise the place value of each digit in a four digit number Order and compare numbers beyond 1000 Identify, represent and estimate numbers using different representations including scales. round 4-digit numbers to the nearest 10, 100 and 1000. read and interpret number word problems with increasingly large numbers. 	
	Unit 2 - Addition		<ul style="list-style-type: none"> Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Estimate and use inverse operations to check answers to a calculation Solve addition two-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> add two 4-digit numbers using column addition (compact or expanded) Use estimation and inverse operation to check answers to a calculation Solve addition two-step real world problems, making choices for appropriate method and operation. 	<p><u>= signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g. $55 + \square = 80$ $\square = 55 + 25$ $\square + 25 = 80$ $80 = \square + 25$</p> <p><u>Partition into tens and ones and recombine</u> Either partition both numbers and recombine the second number only e.g.</p> $55 + 37 = 55 + 30 + 7$ $= 85 + 7$ $= 92$ $\quad +30 \qquad \qquad +7$



					<p style="text-align: center;"> $\begin{array}{r} 55 \qquad \qquad \qquad 85 \qquad 92 \\ \hline \end{array}$ </p> <p>Add the nearest multiple of 10, then adjust Use appropriate numbers e.g. $63 + 29$ is the same as $63 + 30 - 1$</p> <p><u>Pencil and paper procedures</u> $358 + 73 = 431$</p> <p>either or</p> $\begin{array}{r} 358 \\ + 73 \\ \hline 11 \\ 120 \\ \hline 300 \\ 431 \end{array}$ $\begin{array}{r} 300 + 50 + 8 \\ \hline 70 + 3 \\ \hline 300 + 120 + 11 = 431 \end{array}$ <p>Leading to</p> $\begin{array}{r} 358 \\ + 73 \\ \hline 431 \end{array}$ <p>Extend to decimals in the context of money</p>
	Unit 3- Subtraction		<ul style="list-style-type: none"> Subtract numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Estimate and use inverse operations to check answers to a calculation Solve subtraction two-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> use both expanded written column subtraction and counting up to solve subtractions decide when to use which method. Use estimation and inverse operation to check answers to a calculation Solve addition two-step real world problems, making choices for appropriate method and operation. 	<p><u>- = signs and missing numbers</u> $77 + 15 = 92 - \square$</p> <p><u>Find a small difference by counting up</u> e.g. $5003 - 4996$ This can be modelled on an empty number line</p> <p><u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $93 - 49$ is the same as $93 - 50 + 1$</p> <p><u>Use known number facts and place value to subtract</u> $92 - 15 = 77$</p> $\begin{array}{r} 77 \qquad \qquad \qquad 82 \qquad \qquad \qquad 92 \\ \hline \end{array}$ <p style="text-align: center;"> </p>

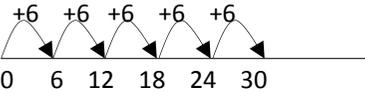
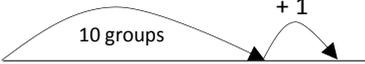
					<p><u>Pencil and paper procedures</u> Complementary addition $754 - 86 = 668$</p> 
Unit 4 – Multiplication			<ul style="list-style-type: none"> Recall multiplication facts for tables up to 12x12 Use place value, known and derived facts to multiply mentally, including multiplying by 0 and 1; multiplying together 3 numbers Recognise and use factor pairs and commutatively in mental calculations Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Solve problems involving multiplying and adding, including the distributive law to multiply two digit numbers by one digit integer scaling problems and harder correspondence problems such as ‘n’ objects are connected to ‘m’ objects 	<ul style="list-style-type: none"> begin to know their 12 time table and recall facts for all tables to 12 x 12. solve multiplications using mental strategies including using factors Mental calculation using factor pairs and commutative properties. multiply two-digit numbers or 3-digit numbers by 1-digit numbers using a formal written method. Solve problems involving multiplying and adding, including the distributive law to multiply two digit numbers by one digit integer scaling problems and harder correspondence problems such as ‘n’ objects are connected to ‘m’ objects 	<p><u>x = signs and missing numbers</u> $23 \times 4 = \square$ $\square = 4 \times 23$ $23 \times \square = 92$ $92 = \square \times 23$ $\square \times 4 = 92$ $92 = 4 \times \square$ $\square \times \triangle = 92$ $92 = \square \times \triangle$</p> <p><u>Partition</u> $23 \times 4 = 92$</p> $23 \times 4 = (20 \times 4) + (3 \times 4)$ $= 92$ <p>OR</p> <p>Use the grid method of multiplication (as below)</p> <p><u>Pencil and paper procedures</u> Grid method 23×7 is approximately $20 \times 10 = 200$</p> 
Unit 5- Fractions			<ul style="list-style-type: none"> Add and subtract fractions with the same denominator Recognise and write decimal equivalent fractions of any number of tenths or hundredths Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ 	<ul style="list-style-type: none"> add fractions with the same denominator including those with an answer greater than 1 begin to understand the relationship between tenths, hundredths and decimals know decimals equivalents for 	

			<ul style="list-style-type: none"> Find the effect of dividing a one or two digit numbers by 10 and 100, identifying the value of digits in the answer as units, tenths and hundredths Round decimals with one decimal place to the nearest whole number Compare numbers with the same number of decimal places up to two decimal places Solve simple measure and money problems involving fractions and decimals to two decimal places 	$\frac{1}{10}$, $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ <ul style="list-style-type: none"> divide 2-digit numbers by ten and 3-digit multiples of ten by a hundred to get decimal answers. Multiply decimals by ten and hundred understand place-value of one place decimals. round 1-place decimals to the nearest whole number. Order and compare numbers with the same number of decimal places up to two decimal places Solve simple measure and money problems involving fractions and decimals to two decimal places 	
	Unit 6 – Shape		<ul style="list-style-type: none"> Identify lines of symmetry in 2D shapes presented in different orientations Complete a simple symmetric figure with respect to a specific line of symmetry 	<ul style="list-style-type: none"> Identify and draw lines of symmetry for 2D shapes in arrange of orientations draw the other half of symmetrical shapes. 	
	Unit 7 – Position and Direction		<ul style="list-style-type: none"> Describe positions on a 2D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left / right and up / down Plot specified points and draw sides to complete a given polygon 	<ul style="list-style-type: none"> use co-ordinates in the first quadrant use up/down and left/right to describe translational movement Plot specific points using coordinates and complete given polygons. 	
Spring 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include 	<ul style="list-style-type: none"> read and write Roman numerals to 100 have an understanding of where 	

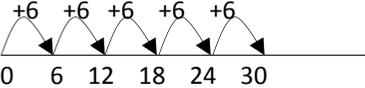
					<p>Extend to decimals in the context of money</p> <p><u>- = signs and missing numbers</u> $77 + 15 = 92 - \square$</p> <p><u>Find a small difference by counting up</u> e.g. $5003 - 4996$ This can be modelled on an empty number line</p> <p><u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $93 - 49$ is the same as $93 - 50 + 1$</p> <p><u>Use known number facts and place value to subtract</u> $92 - 15 = 77$</p> <p>77 82 92</p>  <p><u>Pencil and paper procedures</u> Complementary addition $754 - 86 = 668$</p> <p>+14 +600 +54</p> 
	Unit 3- Subtraction		<ul style="list-style-type: none"> Subtract numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Estimate and use inverse operations to check answers to a calculation Solve subtraction two-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> use both expanded written column subtraction and counting up to solve subtractions decide when to use which method. Use estimation and inverse operation to check answers to a calculation Solve addition two-step real world problems, making choices for appropriate method and operation. 	
	Unit 4 – Fractions		<ul style="list-style-type: none"> Add and subtract fractions with the same denominator Recognise and write decimal equivalent fractions of any number of tenths or hundredths Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ Find the effect of dividing a one or two digit numbers by 10 and 100, 	<ul style="list-style-type: none"> add fractions with the same denominator including those with an answer greater than 1 begin to understand the relationship between tenths, hundredths and decimals know decimals equivalents for $\frac{1}{10}$, $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ divide 2-digit numbers by ten 	

			<p>identifying the value of digits in the answer as units, tenths and hundredths</p> <ul style="list-style-type: none"> • Round decimals with one decimal place to the nearest whole number • Compare numbers with the same number of decimal places up to two decimal places • Solve simple measure and money problems involving fractions and decimals to two decimal places 	<p>and 3-digit multiples of ten by a hundred to get decimal answers. Multiply decimals by ten and hundred</p> <ul style="list-style-type: none"> • understand place-value of one place decimals. • round 1-place decimals to the nearest whole number. • Order and compare numbers with the same number of decimal places up to two decimal places • Solve simple measure and money problems involving fractions and decimals to two decimal places 	
	Unit 5- Measurement		<ul style="list-style-type: none"> • Convert between different units of measure • Estimate, compare and calculate different measures 	<ul style="list-style-type: none"> • Convert between units of measure • Estimate, compare and calculate different measures 	
	Unit 6 – Money		<ul style="list-style-type: none"> • Estimate, compare and calculate different money in pounds and pence 	<ul style="list-style-type: none"> • Estimate, compare and calculate different money in pounds and pence 	
Spring 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> • Count in multiples of 6, 7, 9, 25 and 1000 • Count backwards through zero to include negative numbers • Order and compare number beyond 1000 • Solve Number and practical problems that involve all of the above and with increasingly large positive numbers 	<ul style="list-style-type: none"> • recognise what each digit represents in a 4-digit number • read and write 4-digit numbers including using zeros as place-holders. • recognise what each digit represents in a 4-digit number • compare 4-digit numbers writing inequality sentences using < and >. • place 4-digit numbers on 	

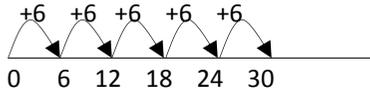
				<p>landmarked lines</p> <ul style="list-style-type: none"> • use their knowledge of place-value to estimate the positions of numbers on number lines • order 4-digit numbers using a line. • read, use and compare negative numbers in the context of temperatures • begin to understand negative numbers are lower/smaller the greater the digits e.g. -21 is less than -12. 	
	Unit 2 – Multiplication		<ul style="list-style-type: none"> • Recall multiplication facts for tables up to 12x12 • Use place value, known and derived facts to multiply mentally, including multiplying by 0 and 1; multiplying together 3 numbers • Recognise and use factor pairs and commutatively in mental calculations • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout • Solve problems involving multiplying and adding, including the distributive law to multiply two digit numbers by one digit integer scaling problems and harder correspondence problems such as ‘n’ objects are connected to ‘m’ objects 	<ul style="list-style-type: none"> • begin to know their 12 time table and recall facts for all tables to 12 x 12. • solve multiplications using mental strategies including using factors • Mental calculation using factor pairs and commutative properties. • multiply two-digit numbers or 3-digit numbers by 1-digit numbers using a formal written method. • Solve problems involving multiplying and adding, including the distributive law to multiply two digit numbers by one digit integer scaling problems and harder correspondence problems such as ‘n’ objects are connected to ‘m’ objects 	<p>x = signs and missing numbers</p> $23 \times 4 = \square \quad \square = 4 \times 23$ $23 \times \square = 92 \quad 92 = \square \times 23$ $\square \times 4 = 92 \quad 92 = 4 \times \square$ $\square \times \triangle = 92 \quad 92 = \square \times \triangle$ <p><u>Partition</u></p> $23 \times 4 = 92$ $23 \times 4 = (20 \times 4) + (3 \times 4)$ $= 92$ <p>OR</p> <p>Use the grid method of multiplication (as below)</p> <p><u>Pencil and paper procedures</u></p> <p>Grid method</p> <p>23 x 7 is approximately 20 x 10 = 200</p> <p>x 20 3</p>

	Unit 3- Division		<ul style="list-style-type: none"> Recall division facts for tables up to 12x12 Use place value, known and derived facts to divide mentally, including dividing by 1 Recognise and use factor pairs and commutatively in mental calculations 	<ul style="list-style-type: none"> divide 2-digit and 3-digit numbers by single-digit numbers using mental strategies and times-tables facts, without remainders Mental calculation using factor pairs and commutative properties. 	$\begin{array}{r} 7 \\ 140 \\ 21 \\ \hline = 161 \end{array}$ <p><u>÷ = sign and missing numbers</u> $30 \div 6 = \square$ $\square = 30 \div 6$ $30 \div \square = 5$ $5 = 30 \div \square$ $\square \div 6 = 5$ $5 = \square \div 6$ $\square \div \triangle = 5$ $5 = \square \div \triangle$</p> <p><u>Sharing and grouping</u> $30 \div 6$ can be modelled as: grouping – groups of 6 placed on no. line and the number of groups counted e.g.</p>  <p>Sharing – sharing among 6, the number given to each person</p> <p><u>Reminders</u> $41 \div 4 = 10 \text{ r } 1$ +40</p>  <p>$41 = (10 \times 4) = 10 \text{ r } 1$</p> <p><u>Pencil and paper procedures</u> $75 \div 5$ lies between $50 \div 5 = 10$ and $100 \div 5 = 20$ *Partition the dividend into multiples of the divisor e.g. $72 = 55 + 22$ $50 \div 5 = 10$ $22 \div 5 = 4 \text{ r } 2 \rightarrow 10 + 4 \text{ r } 2 = 14 \text{ r } 2$</p> <p>OR</p> $\begin{array}{r} 72 \\ - \underline{50} \text{ (10 groups)} \\ 22 \\ - \underline{20} \text{ (4 groups)} \\ 2 \end{array}$ <p style="text-align: right;">Answer: 14 remainder 2</p>
	Unit 4 -		<ul style="list-style-type: none"> Recognise and show, using diagrams, 	<ul style="list-style-type: none"> Using diagrams, families show 	

	Fractions		<p>families or common equivalent fractions</p> <ul style="list-style-type: none"> Count up and down in hundredths; recognise that hundredths arise when dividing objects by a hundred and dividing tenths by ten Solve problems involving increasingly harder fractions to divide quantities, including non-unit fractions where the answer is a whole number 	<p>and recognise equivalent fractions.</p> <ul style="list-style-type: none"> begin to count on and back in 0.01s (hundredths). Solve problems involving increasingly harder fractions to divide quantities, including non-unit fractions where the answer is a whole number 	
	Unit 5 – Statistics		<ul style="list-style-type: none"> Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<ul style="list-style-type: none"> Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	
	Unit 6 – Time		<ul style="list-style-type: none"> Read, write and convert time between analogue and digital 12 and 24 hour clocks Solve problems involving converting from hours to minutes, minutes to seconds; years to months; weeks to days 	<ul style="list-style-type: none"> relate analogue pm times to digital 24 hour clock read and understand 24 hour clock digital times. relate analogue to digital time using the 24 hour clock understand am and pm calculate time intervals using the 24 hour clock. Solve problems involving converting from hours to minutes, minutes to seconds; years to months; weeks to days 	
Summer 1	Unit 1 – Number and		<ul style="list-style-type: none"> Find 1000 more or less than a given number 	<ul style="list-style-type: none"> Find 1000 more or less than a given number 	

	Place Value		<ul style="list-style-type: none"> Recognise the place value of each digit in a four-digit number (Thousand, hundreds, tens and ones) Order and compare numbers beyond 1000 Identify, represent and estimate numbers using different representations Round any number to the nearest 10, 100 or 1000 Solve Number and practical problems that involve all of the above and with increasingly large positive numbers 	<ul style="list-style-type: none"> Recognise the place value of each digit in a four digit number Order and compare numbers beyond 1000 Identify, represent and estimate numbers using different representations including scales. round 4-digit numbers to the nearest 10, 100 and 1000. read and interpret number word problems with increasingly large numbers. 	
	Unit 2 – Position and Direction		<ul style="list-style-type: none"> Describe positions on a 2D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left / right and up / down Plot specified points and draw sides to complete a given polygon 	<ul style="list-style-type: none"> use co-ordinates in the first quadrant use up/down and left/right to describe translational movement Plot specific points using coordinates and complete given polygons. 	
	Unit 3 – Division		<ul style="list-style-type: none"> Recall division facts for tables up to 12x12 Use place value, known and derived facts to divide mentally, including dividing by 1 Recognise and use factor pairs and commutatively in mental calculations 	<ul style="list-style-type: none"> divide 2-digit and 3-digit numbers by single-digit numbers using mental strategies and times-tables facts, without remainders Mental calculation using factor pairs and commutative properties. 	<p><u>÷ = sign and missing numbers</u> $30 \div 6 = \square$ $\square = 30 \div 6$ $30 \div \square = 5$ $5 = 30 \div \square$ $\square \div 6 = 5$ $5 = \square \div 6$ $\square \div \triangle = 5$ $5 = \square \div \triangle$</p> <p><u>Sharing and grouping</u> $30 \div 6$ can be modelled as: grouping – groups of 6 placed on no. line and the number of groups counted e.g.</p>  <p>Sharing – sharing among 6, the number given to each person</p> <p><u>Reminders</u></p>

					$41 \div 4 = 10 \text{ r } 1$ $+40$  $41 = (10 \times 4) = 10 \text{ r } 1$ <p><u>Pencil and paper procedures</u> $75 \div 5$ lies between $50 \div 5 = 10$ and $100 \div 5 = 20$ =20= *Partition the dividend into multiples of the divisor e.g. $72 = 55 + 22$ $50 \div 5 = 10$ $22 \div 5 = 4\text{r}2 \rightarrow 10 + 4\text{r}2 = 14 \text{ r}2$</p> <p>OR</p> $\begin{array}{r} 72 \\ - 50 \text{ (10 groups)} \\ \hline 22 \\ - 20 \text{ (4 groups)} \\ \hline 2 \end{array}$ <p style="text-align: right;">Answer: 14 remainder 2</p>
Unit 4 – Statistics			<ul style="list-style-type: none"> • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<ul style="list-style-type: none"> • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	
Unit 5 - Fractions			<ul style="list-style-type: none"> • Recognise and show, using diagrams, families or common equivalent fractions • Count up and down in hundredths; recognise that hundredths arise when dividing objects by a hundred and dividing tenths by ten • Solve problems involving increasingly 	<ul style="list-style-type: none"> • Using diagrams, families show and recognise equivalent fractions. • begin to count on and back in 0.01s (hundredths). • Solve problems involving increasingly harder fractions to divide quantities, including non- 	

			harder fractions to divide quantities, including non-unit fractions where the answer is a whole number	unit fractions where the answer is a whole number	
Summer 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> • Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value • Solve Number and practical problems that involve all of the above and with increasingly large positive numbers 	<ul style="list-style-type: none"> • read and write Roman numerals to 50? 100? • have an understanding of where our number system came from and that we used Roman Numerals before. • Solve number problems using Roman numerals 	
	Unit 2 – Division		<ul style="list-style-type: none"> • Recall division facts for tables up to 12x12 • Use place value, known and derived facts to divide mentally, including dividing by 1 • Recognise and use factor pairs and commutatively in mental calculations 	<ul style="list-style-type: none"> • divide 2-digit and 3-digit numbers by single-digit numbers using mental strategies and times-tables facts, without remainders • Mental calculation using factor pairs and commutative properties. 	<p><u>÷ = sign and missing numbers</u></p> $30 \div 6 = \square \quad \square = 30 \div 6$ $30 \div \square = 5 \quad 5 = 30 \div \square$ $\square \div 6 = 5 \quad 5 = \square \div 6$ $\square \div \triangle = 5 \quad 5 = \square \div \triangle$ <p><u>Sharing and grouping</u> 30 ÷ 6 can be modelled as: grouping – groups of 6 placed on no. line and the number of groups counted e.g.</p>  <p>Sharing – sharing among 6, the number given to each person</p> <p><u>Reminders</u> 41 ÷ 4 = 10 r 1</p> $\begin{array}{r} +40 \\ 41 \div 4 = 10 \text{ r } 1 \end{array}$  $41 = (10 \times 4) = 10 \text{ r } 1$ <p><u>Pencil and paper procedures</u> 75 ÷ 5 lies between 50 ÷ 5 = 10 and 100 ÷ 5 = 20 =</p> <p>*Partition the dividend into multiples of the divisor</p>

					<p>e.g. $72 = 55 + 22$ $50 \div 5 = 10$ $22 \div 5 = 4r2 \rightarrow 10 + 4r2 = 14 r2$</p> <p>OR</p> $\begin{array}{r} 72 \\ - 50 \text{ (10 groups)} \\ \hline 22 \\ - 20 \text{ (4 groups)} \\ \hline 2 \end{array}$ <p>Answer: 14 remainder 2</p>
Unit 3 – Fractions		<ul style="list-style-type: none"> • Add and subtract fractions with the same denominator • Recognise and write decimal equivalent fractions of any number of tenths or hundredths • Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ • Find the effect of dividing a one or two digit numbers by 10 and 100, identifying the value of digits in the answer as units, tenths and hundredths • Round decimals with one decimal place to the nearest whole number • Compare numbers with the same number of decimal places up to two decimal places • Solve simple measure and money problems involving fractions and decimals to two decimal places 	<ul style="list-style-type: none"> • add fractions with the same denominator including those with an answer greater than 1 • begin to understand the relationship between tenths, hundredths and decimals • know decimal equivalents for $\frac{1}{10}$, $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ • divide 2-digit numbers by ten and 3-digit multiples of ten by a hundred to get decimal answers. Multiply decimals by ten and hundred • understand place-value of one place decimals. • round 1-place decimals to the nearest whole number. • Order and compare numbers with the same number of decimal places up to two decimal places • Solve simple measure and money problems involving fractions and decimals to two decimal places 		
Unit 4 –		<ul style="list-style-type: none"> • Convert between different units of 	<ul style="list-style-type: none"> • Convert between different units 		

	Measurement		<p>measure</p> <ul style="list-style-type: none"> Estimate, compare and calculate different measures 	<p>of measure</p> <ul style="list-style-type: none"> Estimate, compare and calculate different measures 	
	Unit 5 – Time		<ul style="list-style-type: none"> Read, write and convert time between analogue and digital 12 and 24 hour clocks Solve problems involving converting from hours to minutes, minutes to seconds; years to months; weeks to days 	<ul style="list-style-type: none"> relate analogue pm times to digital 24 hour clock read and understand 24 hour clock digital times. relate analogue to digital time using the 24 hour clock understand am and pm calculate time intervals using the 24 hour clock. 	
	Unit 6 – Money		<ul style="list-style-type: none"> Estimate, compare and calculate different money in pounds and pence 	<ul style="list-style-type: none"> Estimate, compare and calculate different money in pounds and pence 	
	Unit 7 – Shape		<ul style="list-style-type: none"> Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes Identify acute and obtuse angles and compare and order angles up to two right angles by size Identify lines of symmetry in 2D shapes presented in different orientations Complete a simple symmetric figure with respect to a specific line of symmetry 	<ul style="list-style-type: none"> identify right angle, acute and obtuse angles. Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes Identify and draw lines of symmetry for 2D shapes in arrange of orientations draw the other half of symmetrical shapes. 	
	Unit 8 – Addition & Subtraction		<ul style="list-style-type: none"> Add and Subtract numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Estimate and use inverse operations 	<ul style="list-style-type: none"> Add and Subtract numbers with up to 4 digits using the formal written methods of columnar addition where appropriate Estimate and use inverse 	<p><u>= signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g. $55 + \square = 80$ $\square = 55 + 25$ $\square + 25 = 80$ $80 = \square + 25$</p> <p><u>Partition into tens and ones and</u></p>

- to check answers to a calculation
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

- operations to check answers to a calculation
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

recombine
Either partition both numbers and recombine the second number only e.g.

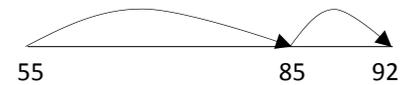
$$55 + 37 = 55 + 30 + 7$$

$$= 85 + 7$$

$$= 92$$

$$+30$$

$$+7$$



Add the nearest multiple of 10, then adjust

Use appropriate numbers e.g. $63 + 29$ is the same as $63 + 30 - 1$

Pencil and paper procedures

$$358 + 73 = 431$$

either

$$358$$

$$+ \underline{73}$$

$$11$$

$$120$$

$$\underline{300}$$

$$431$$

Leading to

$$358$$

$$+ \underline{73}$$

$$431$$

or

$$300 + 50 + 8$$

$$\underline{70 + 3}$$

$$300 + 120 + 11 = 431$$

Extend to decimals in the context of money

- = signs and missing numbers

$$77 + 15 = 92 - \square$$

Find a small difference by counting up

e.g. $5003 - 4996$

This can be modelled on an empty number line

Subtraction the nearest multiple of 10, then adjust

Use appropriate numbers e.g.

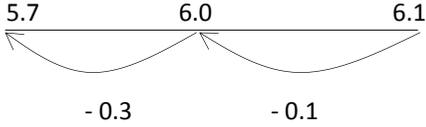
$93 - 49$ is the same as $93 - 50 + 1$

Use known number facts and place value

					<p><u>to subtract</u> $92 - 15 = 77$</p> <p>77 82 92</p> <p>-5 -10</p> <p><u>Pencil and paper procedures</u> Complementary addition $754 - 86 = 668$</p> <p>+14 +600 +54</p> <p>86 100 700 754</p>
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Year 5
Maths Objectives Overview

Term	Mathematical Strand	Time	Focus Objective (2014 National Curriculum)	Teachable 'Chunks' (Stages of Learning)	Calculation Strategies
		No. of lessons	Pupils should be taught to:	WALT:	
Autumn 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit 	<ul style="list-style-type: none"> read, write and recognise value of digits in numbers up to 5 digits. read and write 5-digit numbers knowing what each digit represents read, write and know value of digits in 5-digit numbers compare and order 5-digit numbers. look for patterns and try to explain by asking questions and testing ideas. place 5-digit numbers on a number line 	
	Unit 2 - Addition		<ul style="list-style-type: none"> Add whole numbers with more than 4 digits including formal written methods (columnar addition and subtraction) 	<ul style="list-style-type: none"> add and subtract multiples of 10, 100 and 1000 using place-value. add 4-digit numbers using written addition add 4-digit numbers using written addition where answers are up to 5-digits. add 2-digit numbers mentally begin to add a 3-digit number and a 2-digit number. solve place-value additions and subtractions recognise they have a choice how to solve an addition or subtraction. read and gather information from word problems 	<p><u>= signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g. $254 + \square = 280$ $\square = 255 + 26$ $\square + 26 = 280$ $280 = \square + 26$</p> <p><u>Partition into tens and ones and recombine</u> Either partition both numbers and recombine the second number only e.g. $358 + 73 = 358 + 70 + 3$ $= 428 + 3$ $= 431$</p>

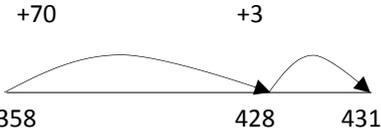
				<ul style="list-style-type: none"> • answer word problems using correct calculation. • add several numbers 2-, 3- & 4-digit using column addition. • add two 5-digit numbers using written column addition. • solve additions using mental strategies and written method. • 	<p><u>Add or subtract the nearest multiple of 10 or 100 then adjust</u> Use appropriate numbers e.g. $458 + 79 =$ is the same as $458 + 80 - 1$</p> <p><u>Pencil and paper procedures</u> Extend to numbers with at least four digits</p> $\begin{array}{r} 3587 \\ + 675 \\ \hline 4262 \end{array}$ <p>Revert to expanded methods if the children experience difficulty.</p> <p>Extend to decimals (same number of decimal places) adding several numbers (with different numbers of digits).</p>
Unit 3- Subtraction			<ul style="list-style-type: none"> • Subtract whole numbers with more than 4 digits including formal written methods (columnar addition and subtraction) 	<ul style="list-style-type: none"> • add and subtract multiples of 10, 100 and 1000 using place-value • subtract 2-digit numbers mentally • solve place-value additions and subtractions • recognise they have a choice how to solve an addition or subtraction. • solve subtractions either by counting up to the next 10 first or by counting up to the nearest 100 • subtract using counting up • begin to recognise when it is more appropriate to use counting up rather than written subtraction. • read and gather information from word problems • answer word problems using correct calculation. 	<p><u>- = signs and missing numbers</u> $177 + 45 = 222 - \square$</p> <p><u>Find a small difference by counting up</u> e.g. $8006 - 5013$ This can be modelled on an empty number line</p> <p><u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $93 - 49$ is the same as $93 - 50 + 1$ $456 - 199$ is the same as $456 - 200 + 1$</p> <p><u>Use known number facts and place value to subtract</u> $6.1 - 0.4 = 5.7$</p> 

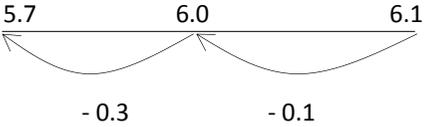
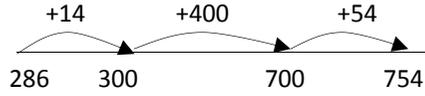
				<ul style="list-style-type: none"> • subtract using a written method. • solve 4-digit – 4-digit subtraction using written column method. • solve 4-digit subtractions using the written column method • solve written column subtractions of 4-digit numbers where you have to move 3 digits. • solve 4-digit subtractions using column subtraction • check 4-digit subtraction using estimating and addition • identify patterns and make predictions. • solve 4-digit subtractions using column subtraction • check 4-digit subtraction using estimating and addition • identify patterns and make predictions. • solve written subtractions of 3-digit numbers where they have to move a ten and a hundred. • solve written subtractions of 4-digit numbers • children can subtract 5-digit numbers using decomposition • children can subtract 5-digit numbers using Frog (counting up). • choose an appropriate mental or written method to subtract numbers (up to four digits) • solve subtractions using mental strategies and written method. 	<p><u>Pencil and paper procedures</u> Complementary addition $754 - 286 = 468$</p> <p>OR $754 - 286 = 468$</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">14 (300) can be refined as</td> <td style="text-align: left;">14 (300)</td> </tr> <tr> <td style="text-align: right;">400 (700)</td> <td style="text-align: left;"><u>454</u> (754)</td> </tr> <tr> <td style="text-align: right;"><u>54</u> (754)</td> <td style="text-align: left;">468</td> </tr> <tr> <td style="text-align: right;">468</td> <td></td> </tr> </table>	14 (300) can be refined as	14 (300)	400 (700)	<u>454</u> (754)	<u>54</u> (754)	468	468	
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<u>54</u> (754)	468												
468													
Unit 4 - Fractions			<ul style="list-style-type: none"> • Compare and order fractions whose denominators are all 	<ul style="list-style-type: none"> • compare pairs of fractions with the same numerator • place fractions on a line. 									

			<p>multiples of the same number</p> <ul style="list-style-type: none"> Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number 	<ul style="list-style-type: none"> recognise equivalent fractions begin to reduce fractions to their simplest form. reduce fractions to their simplest form. begin to compare pairs of fractions with different denominators place mixed numbers, e.g. $3 \frac{5}{6}$, on lines count up in fractions using equivalence write improper fractions as mixed numbers and vice versa. write improper fractions as mixed numbers and vice versa look for patterns and begin to write rules. identify equivalent fractions, decimals and percentages recognise equivalent fractions use equivalence to compare pairs of related fractions. change improper fractions to mixed numbers. change improper fractions to mixed numbers, simplifying where possible. 	
	Unit 5- Measurement		<ul style="list-style-type: none"> Convert between different units of metric measure Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints 	<ul style="list-style-type: none"> measure lengths to the nearest mm convert between mm and cm. convert cm to m. name some commonly used Imperial units and say to which measure these correspond. use Standard International Units to measure lengths, weights and capacities recognise that Imperial units 	

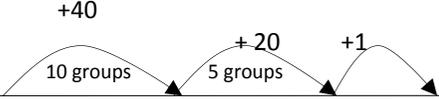
				<p>can be used for this purpose</p> <ul style="list-style-type: none"> • identify the contexts where people are likely to use Imperial units • develop a feel-factor for some commonly used Imperial units. • use a tape measure to measure to the nearest centimetre. 	
	Unit 6 - Geometry		<ul style="list-style-type: none"> • Identify 3D shapes, including cubes and other cuboids, from 2D representations • Know angles are measured in degrees: estimates and compare acute, obtuse and reflex angles • Draw given angles, and measure them in degrees (°) 	<ul style="list-style-type: none"> • measure angles in degrees using a protractor • classify angles as acute, obtuse or reflex. • use a protractor to draw angles of a given size (in degrees) • measure angles using a protractor (in degrees) • classify angles as acute, obtuse and reflex. • identify and define a polygon • recognise different polygons and name these • identify parallel and perpendicular lines. • recognise and identify different types of quadrilateral • identify quadrilaterals by recognising and describing their properties. • identify and describe polygons according to properties • begin to say what the angles at the centre of regular polygons might be. • chn can identify and name 3D shapes • chn can identify 3D shapes from 2D representations • chn can draw 3D shapes to create a 2D representation 	

				<ul style="list-style-type: none"> • chn can create 3-d shapes using 2D nets • 																					
	Unit 7 – Multiplication		<ul style="list-style-type: none"> • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers 	<ul style="list-style-type: none"> • read and gather information from word problems • answer word problems using correct calculation. • recognise multiples of 2, 3, 4, 5, 6, 9 and 25. • find factors of numbers to at least 30. • identify factors of 2-digit numbers 	<p><u>x = signs and missing numbers</u></p> $47 \times 6 = \square \quad \square = 47 \times 6$ $47 \times \square = 282 \quad 282 = \square \times 6$ $\square \times 6 = 282 \quad 282 = 47 \times \square$ $\square \times \triangle = 283 \quad 282 = \square \times \triangle$ <p><u>Partition</u></p> $47 \times 6 = 282$ $47 \times 6 = (40 \times 6) + (7 \times 6)$ $= 282$ <p>OR</p> <p>Use the grid method of multiplication (as below)</p> <p><u>Pencil and paper procedures</u></p> <p>Grid method</p> <p>72 x 38 is approximately 70 x 40 = 2800</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">x</td> <td style="border-right: 1px solid black; padding: 0 5px;">70</td> <td style="padding: 0 5px;">2</td> <td style="padding: 0 10px;">=</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">30</td> <td style="border-right: 1px solid black; padding: 0 5px;">2100</td> <td style="padding: 0 5px;">60</td> <td style="padding: 0 10px;">=</td> <td>161</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">8</td> <td style="border-right: 1px solid black; padding: 0 5px;">560</td> <td style="padding: 0 5px;">16</td> <td style="padding: 0 10px;">=</td> <td><u>576</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>2736</td> </tr> </table> <p>Extend to simple decimals with one decimal place.</p>	x	70	2	=		30	2100	60	=	161	8	560	16	=	<u>576</u>					2736
	x	70	2	=																					
30	2100	60	=	161																					
8	560	16	=	<u>576</u>																					
				2736																					
Unit 8 – Statistics		<ul style="list-style-type: none"> • Solve comparison, sum and difference problems using information presented in a line graph 	<ul style="list-style-type: none"> • 																						
Autumn 2	Unit 1 –		<ul style="list-style-type: none"> • Count forwards or backwards in 	<ul style="list-style-type: none"> • multiply and divide by 10 and 																					

	Number and Place Value		<p>steps of powers of 10 for any given number up to 1 000 000</p> <ul style="list-style-type: none"> Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero 	<p>100, giving answers with no, 1 or 2 decimal places, explaining the effect.</p> <ul style="list-style-type: none"> compare and order negative numbers understand negative numbers are less than zero. 	
	Unit 2 - Addition		<ul style="list-style-type: none"> Add numbers mentally with increasingly large numbers 	<ul style="list-style-type: none"> solve additions and subtractions using appropriate mental strategies choose an appropriate mental or written method to add numbers (up to four digits) 	<p><u>= signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g. $254 + \square = 280$ $\square = 255 + 26$ $\square + 26 = 280$ $280 = \square + 26$</p> <p><u>Partition into tens and ones and recombine</u> Either partition both numbers and recombine the second number only e.g. $358 + 73 = 358 + 70 + 3$ $= 428 + 3$ $= 431$</p>  <p><u>Add or subtract the nearest multiple of 10 or 100 then adjust</u> Use appropriate numbers e.g. $458 + 79 =$ is the same as $458 + 80 - 1$</p> <p><u>Pencil and paper procedures</u> Extend to numbers with at least four digits</p> $\begin{array}{r} 3587 \\ + 675 \\ \hline 4262 \end{array}$ <p>Revert to expanded methods if the children experience difficulty.</p>

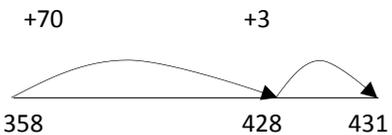
					Extend to decimals (same number of decimal places) adding several numbers (with different numbers of digits).								
	Unit 3- Subtraction		<ul style="list-style-type: none"> Subtract numbers mentally with increasingly large numbers 	<ul style="list-style-type: none"> solve additions and subtractions using appropriate mental strategies choose the appropriate method to solve subtraction of 5-digit numbers children can subtract 5-digit numbers using Frog (counting up) or the written column method (decomposition). choose an appropriate mental or written method to subtract numbers (up to four digits) solve subtractions using mental strategies and written method. 	<p><u>- = signs and missing numbers</u> $177 + 45 = 222 - \square$</p> <p><u>Find a small difference by counting up</u> e.g. $8006 - 5013$ This can be modelled on an empty number line <u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $93 - 49$ is the same as $93 - 50 + 1$ $456 - 199$ is the same as $456 - 200 + 1$</p> <p><u>Use known number facts and place value to subtract</u> $6.1 - 0.4 = 5.7$</p>  <p><u>Pencil and paper procedures</u> Complementary addition $754 - 286 = 468$</p>  <p>OR $754 - 286 = 468$</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">14 (300) can be refined as</td> <td style="text-align: left;">14 (300)</td> </tr> <tr> <td style="text-align: right;">400 (700)</td> <td style="text-align: left;"><u>454</u> (754)</td> </tr> <tr> <td style="text-align: right;"><u>54</u> (754)</td> <td style="text-align: left;">468</td> </tr> <tr> <td style="text-align: right;">468</td> <td></td> </tr> </table>	14 (300) can be refined as	14 (300)	400 (700)	<u>454</u> (754)	<u>54</u> (754)	468	468	
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	Unit 4-		<ul style="list-style-type: none"> Add and subtract fractions with 	<ul style="list-style-type: none"> fractions by whole numbers, 									

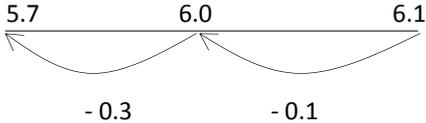
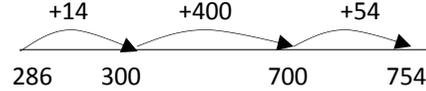
	Fractions		<p>the same denominator and multiples of the same number</p> <ul style="list-style-type: none"> • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 	<p>e.g. $2/5 \times 8$.</p> <ul style="list-style-type: none"> • multiply improper fractions by whole numbers, e.g. $1/4 \times 7$ etc. • multiply fractions less than 1 by whole numbers • write improper fractions as mixed numbers • spot patterns and make generalisations. • add fractions with related denominators • subtract pairs of fractions with related denominators. • multiply non-unit fractions by whole numbers • 	
	Unit 5 – Multiplication		<ul style="list-style-type: none"> • Establish whether a number up to 100 is prime and recall prime numbers up to 19 • Multiply numbers up to 4-digits by one or two-digit number using a formal written method, including long multiplication for two-digit numbers 	<ul style="list-style-type: none"> • multiply 2- and 3-digit numbers by 4 by doubling twice • multiply 3-digit and 4-digit numbers by 1-digit numbers using a written method. • understand the three-stage process in long multiplication • begin to use long multiplication to multiply 2-digit numbers and 3-digit numbers by teens numbers. • use mental and written methods to solve multiplications • decide to use a written or a mental method to solve a multiplication. • use a written method to multiply pairs of 2-digit numbers. 	
	Unit 6 – Division		<ul style="list-style-type: none"> • Divide numbers mentally drawing upon known facts • Divide numbers up to 4 digits by a 	<ul style="list-style-type: none"> • read and gather information from word problems • answer word problems 	<p>\div = sign and missing numbers</p> <p>$300 \div 6 = \square$ $\square = 300 \div 6$</p> <p>$300 \div \square = 50$ $50 = 300 \div \square$</p>

		<p>one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p>	<ul style="list-style-type: none"> • using correct calculation. • divide even 2- and 3-digit numbers by 4 by halving twice. • use the fact that multiplication can be done in any order • use mental strategies and jottings to divide 3-digit numbers by 1-digit numbers, including those leaving a remainder • spot and explain patterns and relationships. • use short division to divide 3-digit numbers by 1-digit numbers • write remainders as fraction of the divisor. • use short division to divide 4-digit numbers by single-digit numbers, including those which leave a remainder. • solve divisions using both written and mental strategies. • choose an appropriate method for solving divisions (written or mental strategies). • begin to use short division to divide 3-digit numbers by 1-digit numbers • 	<ul style="list-style-type: none"> • find perimeters in cm • calculate the perimeter of a square or rectangle • calculate the area of a square or rectangle • understand that perimeter is measured in centimetres and area is measured in square centimetres. 	<p> $\square \div 6 = 50$ $50 = \square \div 6$ $\square \div \triangle = 50$ $50 = \square \div \triangle$ </p> <p><u>Sharing and grouping</u> Continue to understand both division as sharing and grouping (repeated subtraction).</p> <p><u>Remainders</u> Quotients expressed as fractions or decimal fractions</p> <p>$61 \div 4 = 15 \frac{1}{4}$ or 15.25</p>  <p><u>Pencil and paper procedures</u> $256 \div 7$ lies between $210 \div 7 = 30$ and $280 \div 7 = 40$ *Partition the dividend into multiples of the divisor: e.g. $256 = 210 + 46$ $210 \div 7 = 30$ $46 \div 7 = 6r4 \rightarrow 30 + 6r4 = 36r4$</p> <p>OR</p> $\begin{array}{r} 256 \\ - \underline{210} \text{ (30 groups)} \\ 46 \\ - \underline{42} \text{ (6 groups)} \\ 4 \end{array}$ <p>Answer: 36 remainder 4</p>
Unit 7 – Measurement		<ul style="list-style-type: none"> • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • Calculate and compare the area of squares and rectangles including standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes 			

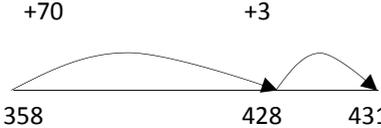
				<ul style="list-style-type: none"> • find the area of an irregular shape • find the area and the perimeter of a composite shape by dividing it into squares and rectangles. • find the area and the perimeter of a rectangle • use the area and one side to find a missing side length • use the perimeter and one side to find a missing side length. 	
Spring 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100, 000 	<ul style="list-style-type: none"> • round 5-digit numbers to the nearest 10, 100 and 1000. 	
	Unit 2 – Addition		<ul style="list-style-type: none"> • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<ul style="list-style-type: none"> • use rounding to estimate the answers. 	<u>Add or subtract the nearest multiple of 10 or 100 then adjust</u> Use appropriate numbers e.g. $458 + 79 =$ is the same as $458 + 80 - 1$
	Unit 3- Subtraction		<ul style="list-style-type: none"> • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<ul style="list-style-type: none"> • use rounding to estimate the answers. 	<u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $93 - 49$ is the same as $93 - 50 + 1$ $456 - 199$ is the same as $456 - 200 + 1$
	Unit 4 – Fractions		<ul style="list-style-type: none"> • Read and write decimal numbers as fractions • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 	<ul style="list-style-type: none"> • know the value of each digit in a number with two decimal places 	
	Unit 5- Measurement		<ul style="list-style-type: none"> • Estimate volume and capacity • Solve problems involving converting between units of time 	<ul style="list-style-type: none"> • convert between 12-hour clock times and 24-hour times • write digital times correctly. • find a time a given number of minutes or hours and minute later, e.g. 1 hour 25 minutes after 13:45. 	

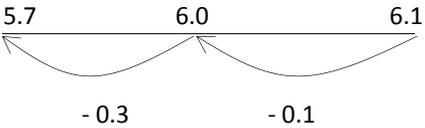
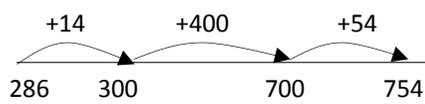
				<ul style="list-style-type: none"> • read a timetable using 24-hour times • calculate time intervals of more than an hour. • understand that volume is measurement in three dimensions • see that to find the volume of a cube or cuboid, we can count the cubes used to build it • understand that to calculate the volume we can multiply the three sides. • understand that volume is a measurement of the amount of space a shape takes up. • understand that capacity is a measurement of the amount of water or lentils something will hold. • read a timetable using 24-hour times • convert 24-hour times to 12-hour times • calculate time intervals of more than several hours. 	
	Unit 6 – Geometry		<ul style="list-style-type: none"> • Identify other multiples of 90° • Use the properties of rectangles to deduce related facts and find missing lengths and angles 	<ul style="list-style-type: none"> • recognise and use the properties of rectangles to derive related facts. 	
Spring 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> • Solve number problems and practical problems that involve all of the above 	<ul style="list-style-type: none"> • write and solve mathematical puzzles using clues. • work out a function (single operation) • use the inverse operation to find answers. 	
	Unit 2 – Addition		<ul style="list-style-type: none"> • Solve addition multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> • use column addition to add lots of 3-digit numbers to solve a problem • check subtraction with 	<u>= signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g. $254 + \square = 280$ $\square = 255 + 26$

				<p>addition.</p>	<p>$\square + 26 = 280$ $280 = \square + 26$</p> <p><u>Partition into tens and ones and recombine</u> Either partition both numbers and recombine the second number only e.g. $358 + 73 = 358 + 70 + 3$ $= 428 + 3$ $= 431$</p>  <p><u>Add or subtract the nearest multiple of 10 or 100 then adjust</u> Use appropriate numbers e.g. $458 + 79 =$ is the same as $458 + 80 - 1$</p> <p><u>Pencil and paper procedures</u> Extend to numbers with at least four digits</p> $\begin{array}{r} 3587 \\ + 675 \\ \hline 4262 \end{array}$ <p>Revert to expanded methods if the children experience difficulty.</p> <p>Extend to decimals (same number of decimal places) adding several numbers (with different numbers of digits).</p>
	Unit 3- Subtraction		<ul style="list-style-type: none"> Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> find change from a multiple of ten pounds using counting up. choose the appropriate method to solve subtraction of 5-digit numbers children can subtract 5-digit numbers using Frog (counting up) or the written column method (decomposition). 	<p><u>- = signs and missing numbers</u> $177 + 45 = 222 - \square$</p> <p><u>Find a small difference by counting up</u> e.g. $8006 - 5013$ This can be modelled on an empty number line</p> <p><u>Subtraction the nearest multiple of 10, then adjust</u> Use appropriate numbers e.g. $93 - 49$ is the same as $93 - 50 + 1$</p>

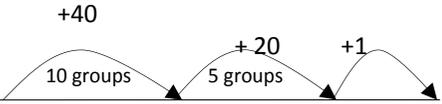
					<p>456 – 199 is the same as 456 – 200 + 1</p> <p><u>Use known number facts and place value to subtract</u> $6.1 - 0.4 = 5.7$</p>  <p><u>Pencil and paper procedures</u> Complementary addition $754 - 286 = 468$</p>  <p>OR $754 - 286 = 468$</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">14 (300)</td> <td style="text-align: center;">can be refined as</td> <td style="text-align: left;">14 (300)</td> </tr> <tr> <td style="text-align: right;">400 (700)</td> <td></td> <td style="text-align: left;"><u>454 (754)</u></td> </tr> <tr> <td style="text-align: right;"><u>54 (754)</u></td> <td></td> <td style="text-align: left;">468</td> </tr> <tr> <td style="text-align: right;">468</td> <td></td> <td></td> </tr> </table>	14 (300)	can be refined as	14 (300)	400 (700)		<u>454 (754)</u>	<u>54 (754)</u>		468	468		
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400 (700)		<u>454 (754)</u>															
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Unit 4 – Fractions			<ul style="list-style-type: none"> • Round decimals with two decimal places to the nearest whole number and to one decimal place • Read, write, order and compare numbers with up to three decimal places 	<ul style="list-style-type: none"> • children can round 2-place decimals to the nearest tenth • children can round decimals to the nearest whole number • children can locate 2-place decimal numbers on a number line. • read, write and compare 3-place decimals • know 0.001 is 1/1000. • place numbers with one and two decimal places on a line • round 1-place and 2-place decimals to the nearest whole. 													

				<ul style="list-style-type: none"> • compare and order numbers with one and two decimal places • write a number with one decimal place between two neighbouring whole numbers and write a number with two decimal places between neighbouring numbers of tenths. 	
	Unit 5 – Measurement		<ul style="list-style-type: none"> • Use all four operations to solve problems involving measure using decimal notation, including scaling 	<ul style="list-style-type: none"> • use a scale factor to find new dimensions and make a scale model • appreciate the real life applications of scale drawings and models. 	
	Unit 6 – Geometry		<ul style="list-style-type: none"> • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles 	<ul style="list-style-type: none"> • identify and define a polygon • recognise different polygons and name these • identify parallel and perpendicular lines. • recognise and identify different types of quadrilateral • identify quadrilaterals by recognising and describing their properties. • identify and describe polygons according to properties • begin to say what the angles at the centre of regular polygons might be. • identify regular and irregular polygons • draw regular and irregular 2D shapes using given dimensions and with given angles • plot co-ordinates on a graph and join these to create a polygon • 	

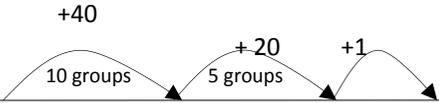
Summer 1	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Read Roman numerals to 1000 (M) and recognise years written in Roman numerals 	<ul style="list-style-type: none"> write the dates of years using Roman numerals. 	
	Unit 2 – Addition and subtraction		<ul style="list-style-type: none"> Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> choose the appropriate method to solve subtraction of 5-digit numbers children can subtract 5-digit numbers using Frog (counting up) or the written column method (decomposition). 	<p><u>= signs and missing numbers</u> Use a range of equations as in Year 1 and 2 but with appropriate numbers e.g. $254 + \square = 280$ $\square = 255 + 26$ $\square + 26 = 280$ $280 = \square + 26$ <u>Partition into tens and ones and recombine</u> Either partition both numbers and recombine the second number only e.g. $358 + 73 = 358 + 70 + 3$ $= 428 + 3$ $= 431$</p>  <p><u>Add or subtract the nearest multiple of 10 or 100 then adjust</u> Use appropriate numbers e.g. $458 + 79 =$ is the same as $458 + 80 - 1$</p> <p><u>Pencil and paper procedures</u> Extend to numbers with at least four digits</p> $\begin{array}{r} 3587 \\ + 675 \\ \hline 4262 \end{array}$ <p>Revert to expanded methods if the children experience difficulty.</p> <p>Extend to decimals (same number of decimal places) adding several numbers (with different numbers of digits).</p> <p><u>- = signs and missing numbers</u> $177 + 45 = 222 - \square$</p>

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	Unit 3 – Multiplication		<ul style="list-style-type: none"> • Multiply numbers mentally drawing upon known facts • Multiply numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context 	<ul style="list-style-type: none"> • use mental and written methods to solve multiplications • decide to use a written or a mental method to solve a multiplication. • 	<p><u>x = signs and missing numbers</u></p> <table style="width: 100%;"> <tr> <td>$47 \times 6 = \square$</td> <td>$\square = 47 \times 6$</td> </tr> <tr> <td>$47 \times \square = 282$</td> <td>$282 = \square \times 6$</td> </tr> <tr> <td>$\square \times 6 = 282$</td> <td>$282 = 47 \times \square$</td> </tr> <tr> <td>$\square \times \triangle = 283$</td> <td>$282 = \square \times \triangle$</td> </tr> </table>	$47 \times 6 = \square$	$\square = 47 \times 6$	$47 \times \square = 282$	$282 = \square \times 6$	$\square \times 6 = 282$	$282 = 47 \times \square$	$\square \times \triangle = 283$	$282 = \square \times \triangle$				
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					<p><u>Partition</u> $47 \times 6 = 282$</p> <p>$47 \times 6 = (40 \times 6) + (7 \times 6)$ $= 282$</p> <p>OR</p> <p>Use the grid method of multiplication (as below)</p> <p><u>Pencil and paper procedures</u> Grid method 72×38 is approximately $70 \times 40 = 2800$</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">x</td> <td style="border-right: 1px solid black; padding: 0 5px;">70</td> <td style="padding: 0 5px;">2</td> <td style="padding: 0 10px;">=</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">30</td> <td style="border-right: 1px solid black; padding: 0 5px;">2100</td> <td style="padding: 0 5px;">60</td> <td></td> <td>= 161</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">8</td> <td style="border-right: 1px solid black; padding: 0 5px;">560</td> <td style="padding: 0 5px;">16</td> <td></td> <td>= 576</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">2736</td> </tr> </table> <p>Extend to simple decimals with one decimal place.</p>	x	70	2	=		30	2100	60		= 161	8	560	16		= 576					2736
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Unit 4 – Division			<ul style="list-style-type: none"> Divide whole numbers and those involving decimals by 10, 100 and 1000 	<ul style="list-style-type: none"> use mental strategies and jottings to divide 3-digit numbers by 1-digit numbers, including those leaving a remainder spot and explain patterns and relationships. solve divisions using both written and mental strategies. choose an appropriate method for solving divisions (written or mental strategies). 	<p><u>÷ sign and missing numbers</u> $300 \div 6 = \square$ $\square \div 6 = 300 \div 6$ $300 \div \square = 50$ $50 = 300 \div \square$ $\square \div 6 = 50$ $50 = \square \div 6$ $\square \div \triangle = 50$ $50 = \square \div \triangle$</p> <p><u>Sharing and grouping</u> Continue to understand both division as sharing and grouping (repeated subtraction).</p> <p><u>Remainders</u> Quotients expressed as fractions or decimal fractions</p>																				

					$61 \div 4 = 15 \frac{1}{4}$ or 15.25 
	Unit 5 - Statistics		<ul style="list-style-type: none"> Complete, read and interpret information in tables, including timetables 	<ul style="list-style-type: none"> draw a line graph and interpret intermediate points. draw and interpret line graphs 	<p><u>Pencil and paper procedures</u> $256 \div 7$ lies between $210 \div 7 = 30$ and $280 \div 7 = 40$ *Partition the dividend into multiples of the divisor: e.g. $256 = 210 + 46$ $210 \div 7 = 30$ $46 \div 7 = 6r4 \rightarrow 30 + 6r4 = 36r4$</p> <p>OR</p> $\begin{array}{r} 256 \\ - 210 \text{ (30 groups)} \\ \hline 46 \\ - 42 \text{ (6 groups)} \\ \hline 4 \end{array}$ <p>Answer: 36 remainder 4</p>
Summer 2	Unit 1 – Number and Place Value		<ul style="list-style-type: none"> Solve number problems and practical problems that involve all of the above 	<ul style="list-style-type: none"> work out a function (single operation) use the inverse operation to find answers. 	
	Unit 2 – Fractions		<ul style="list-style-type: none"> Solve problems involving number up to three decimal places Recognise the percent symbol (%) and understand that percent relates to 'number as parts per hundred', and write percentages as a fraction with denominator hundred, and as a decimal fraction 	<ul style="list-style-type: none"> find 1%, 10%, 50% and 5% of an amount of money, and use these key percentages and knowledge of equivalent fractions to find other percentages of the same amount. identify percentage coloured convert percentages to hundredths, simplifying where possible. 	

			<ul style="list-style-type: none"> use equivalent fractions and percentages to solve problems. add and subtract 0.1 to/from number with one decimal place begin to add and subtract 0.01 to/from number with one or two decimal places. 																	
Unit 3 – Multiplication		<ul style="list-style-type: none"> Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) 	<ul style="list-style-type: none"> find cubes to at least 6^3 	<p><u>Partition</u> $47 \times 6 = 282$</p> $47 \times 6 = (40 \times 6) + (7 \times 6)$ $= 282$ <p>OR</p> <p>Use the grid method of multiplication (as below) <u>Pencil and paper procedures</u> Grid method 72×38 is approximately $70 \times 40 = 2800$</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">x</td> <td style="border-right: 1px solid black; padding: 0 5px;">70</td> <td style="padding: 0 5px;">2</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">30</td> <td style="border-right: 1px solid black; padding: 0 5px;">2100</td> <td style="padding: 0 5px;">60</td> <td style="padding-left: 10px;">= 161</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 5px;">8</td> <td style="border-right: 1px solid black; padding: 0 5px;">560</td> <td style="padding: 0 5px;">16</td> <td style="padding-left: 10px;">= 576</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="padding-left: 20px;">2736</td> </tr> </table> <p>Extend to simple decimals with one decimal place.</p>	x	70	2		30	2100	60	= 161	8	560	16	= 576				2736
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Unit 4 – Multiplication and Division		<ul style="list-style-type: none"> Solve problems involving multiplication and division and a combination of these, including understanding the meaning of the equals sign Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> use short division to divide 4-digit numbers by 1-digit numbers, including those which leave a remainder express a remainder as fraction use multiplication to check. 	<p><u>÷ = sign and missing numbers</u> $300 \div 6 = \square$ $\square \div 6 = 300 \div 6$ $300 \div \square = 50$ $50 = 300 \div \square$</p> <p>$\square \div 6 = 50$ $50 = \square \div 6$ $\square \div \triangle = 50$ $50 = \square \div \triangle$</p> <p><u>Sharing and grouping</u> Continue to understand both division as sharing and grouping (repeated</p>																

					<p>subtraction).</p> <p><u>Remainders</u> Quotients expressed as fractions or decimal fractions</p> <p>$61 \div 4 = 15 \frac{1}{4}$ or 15.25</p>  <p><u>Pencil and paper procedures</u> $256 \div 7$ lies between $210 \div 7 = 30$ and $280 \div 7 = 40$ *Partition the dividend into multiples of the divisor: e.g. $256 = 210 + 46$ $210 \div 7 = 30$ $46 \div 7 = 6r4 \rightarrow 30 + 6r4 = 36r4$</p> <p>OR</p> $\begin{array}{r} 256 \\ - \underline{210} \text{ (30 groups)} \\ 46 \\ - \underline{42} \text{ (6 groups)} \\ 4 \end{array}$ <p>Answer: 36 remainder 4</p>
	Unit 5 – Position and Direction		<ul style="list-style-type: none"> Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language and know that the shape has not changed 	<ul style="list-style-type: none"> add to x and y co-ordinates to translate simple polygons in the first quadrant. draw shapes reflected in the x-axis begin to draw shapes reflected in a line parallel with the x-axis. reflect the polygon in the y axis or in another vertical line on the graph understand what has happened to the co-ordinates after they have 	

				<ul style="list-style-type: none"> reflected the shape in the y axis begin to explain what happens to the x co-ordinates when they reflect a shape in a vertical line on the graph. 	
Unit 6 – Geometry		<ul style="list-style-type: none"> Identify angles at a point and one whole turn (total 360°) Identify angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) 	<ul style="list-style-type: none"> know that angles on a line total 180° know that angles around a point total 360°. use counting up and knowledge that angles on a line total 180° and angles round a point total 360° to work out missing angles. recognise that we measure angles of turn use a protractor to measure and draw angles in degrees 		
Unit 7 – Fractions		<ul style="list-style-type: none"> Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25 	<ul style="list-style-type: none"> find 1%, 10%, 50% and 5% of an amount of money, and use these key percentages and knowledge of equivalent fractions to find other percentages of the same amount. identify percentage coloured convert percentages to hundredths, simplifying where possible. use equivalent fractions and percentages to solve problems. add and subtract 0.1 to/from number with one decimal place begin to add and subtract 0.01 to/from number with 		

				one or two decimal places.	
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Year 6
Maths Objectives Overview

Term	Mathematical Strand	Time	Focus Objective (2014 National Curriculum)	Teachable 'Chunks' (Stages of Learning)	Calculation Strategies
		No. of lessons	Pupils should be taught to:	WALT:	
Autumn	<p>Mrs Gresty Autumn term</p> <ul style="list-style-type: none"> ▪ <u>Number and place value</u> Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. ▪ <i>Identify, represent and estimate numbers using the number line.</i> ▪ <i>Order and compare numbers including integers, decimals and negative numbers.</i> ▪ <i>Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more/less than a given number.</i> ▪ Use negative numbers in context, and calculate intervals across zero ▪ <i>Calculate differences in temperature, including those that involved a positive and negative temperature.</i> ▪ Identify common factors, common multiples and prime numbers, square numbers and cube numbers ▪ Use estimation <i>and inverse</i> to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. <p style="text-align: center;">Recall multiplication facts for tables up to 12x12</p>				
Autumn 1	Unit 1 – addition and subtraction		<ul style="list-style-type: none"> • Add whole numbers and decimals using formal written methods (columnar addition and subtraction) • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). • Select a mental strategy appropriate for the numbers in the calculation. • Recall and use addition and subtraction facts for 1 (with decimals to two decimal places). • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Perform mental calculations, including with mixed operations and large numbers 	•	

	Unit 2- multiplication		<ul style="list-style-type: none"> • <i>Use partitioning to double or halve any number..</i> • Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. • Multiply one-digit numbers with up to two decimal places by whole numbers. 	•	
	Unit 4 - division		<ul style="list-style-type: none"> • Divide numbers up to 4 digits by a two-digit whole number using the formal written methods of short or long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. • Use written division methods in cases where the answer has up to two decimal places. • Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. 	• .	
	Unit 5- Decimals		<ul style="list-style-type: none"> • Identify the value of each digit to three decimal places. • <i>Order and compare numbers including integers, decimals</i> • Round any whole number to a required degree of accuracy. • <i>Round decimals with three decimal places to the nearest whole number or one or two decimal places.</i> • Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. 	•	
	Unit 6 -		<ul style="list-style-type: none"> • Compare and order fractions, 		

	fractions		<p>including fractions > 1 (<i>including on a number line</i>).</p> <ul style="list-style-type: none"> • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • Solve problems involving fractions. • 		
Autumn 2	Unit 1 – fractions		<ul style="list-style-type: none"> • Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375 and $\frac{3}{8}$). • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). <hr/> <ul style="list-style-type: none"> • Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$). • <i>Solve problems involving fractions.</i> • 	• .	
	Unit 2 - percentages		<ul style="list-style-type: none"> • Solve problems involving the calculation of percentages (e.g. of measures and such as 15% of 260) and the use of percentages for comparison. • <i>Find simple percentages of amounts.</i> • Associate a fraction with division and calculate decimal fraction and percentage equivalents (e.g. 0.375 and $\frac{3}{8}$) 	•	
	Unit 3- geometry -2 D shape		<ul style="list-style-type: none"> • Compare/classify geometric shapes based on the properties and sizes. • Draw 2-D shapes using given dimensions and angles. • Identify perpendicular and parallel lines/ sides/ angles. 	•	

			<ul style="list-style-type: none"> • To interpret venn and carol diagrams • 		
	Unit 4- geometry 3 D shape		<ul style="list-style-type: none"> • Recognise, describe and build simple 3-D shapes, including making nets 	<ul style="list-style-type: none"> • 	
Spring 1	<ul style="list-style-type: none"> ▪ Mrs Gresty Spring ▪ <u>Measurement</u> ▪ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units (e.g. mm³ and km³). ▪ Solve problems involving money with up to 2 decimal places ▪ <u>Geometry</u> 				

	<ul style="list-style-type: none"> ▪ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. ▪ Convert between standard units of length, mass, volume and time using decimal notation to three decimal places. <p><u>Number and place value</u></p> <ul style="list-style-type: none"> • Read Roman numerals to 1000(M) and recognise years written in Roman numeral • <u>Statistics</u> • To read time graphs and time tables <p>Revision</p>				
Spring 1	Unit 1 – statistics		<ul style="list-style-type: none"> • Revise all data-bar charts, tables ,pictograms, continuous and discrete data • <i>Continue to complete and interpret information in a variety of sorting diagrams (including sorting properties of numbers and shapes).</i> • Interpret and construct pie charts and line graphs and use these to solve problems. • <i>Solve comparison, sum and difference problems using information presented in all types of graph.</i> • Calculate and interpret the mean as an average. 	• .	
	Unit 2 – measurement Length, mass, capacity volume		<ul style="list-style-type: none"> • Use, read and write standard units of length, mass, and capacity using decimal notation to three decimal places. • Convert between standard units of length, mass, volume using decimal notation to three decimal places. • Convert between miles and kilometres • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. 	• .	
	Unit 3- Geometry position and direction (rotation, reflection symmetry)		<ul style="list-style-type: none"> • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. • Identify lines of symmetry in 2 d shapes presented in different orientations • Complete a simple symmetric figures with respect to a specific line of symmetry 	•	
Spring 2	Unit 1 – geometry angles and triangles		<ul style="list-style-type: none"> • Identify acute, obtuse, right and reflex angles • Draw and measure angles in degrees • Recognise angles where they meet at a 	•	

			<p>point, are on a straight line, or are vertically opposite, and find missing angles.</p> <ul style="list-style-type: none"> • Find unknown angles in any triangles, quadrilaterals, regular polygons. • Plot specific points to complete a given polygon 		
	Unit 2 – measurement area and perimeter		<ul style="list-style-type: none"> • Measure and calculate the area and perimeter of rectilinear shapes and compound shapes. • Recognise that shapes with the same areas can have different perimeters and vice versa. • Calculate the area of parallelograms and triangles 	•	
	Unit 3- statistics probability		•	•	
	Unit 4 – geometry position and direction coordinates		<ul style="list-style-type: none"> • Describe positions on the full coordinate grid (all four quadrants). • 	•	
	Unit 5 – Measurement time		<ul style="list-style-type: none"> • Use, read and write standard units of time • Convert between standard units of time • Tell and write the time from an analogue clock including using Roman numerals. • Solve problems involving converting hours to minutes, minutes to seconds, years to months, weeks to days. • Estimate and read time to the nearest minute (analogue, 12 hour and 24 hour) • Read write and convert time from analogue, digital and 24 hour clocks 	•	
	Unit 6 – ratio and proportion		<ul style="list-style-type: none"> • Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication/division facts. • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. 	•	

			<ul style="list-style-type: none">• Solve problems involving similar shapes where the scale factor is known or can be found.		
Summer 1	Unit 1 – revision		<ul style="list-style-type: none">•	<ul style="list-style-type: none">•	