

	Numbers			Shape, Space and Measures		
Term	Counting	Addition and Subtraction	Multiplication and Division	Shape and Space	Measures	Pattern
YR Autumn	Chant numbers in order 1–10.	Say the number one more than a given number up to 10.		Begin to use mathematical names for 2D shapes: circle, triangle, square, rectangle.	Compare two lengths or heights using direct comparison.	Copy, continue and begin to create repeating patterns of objects, colours, shapes, sounds and actions.
	Chant numbers in order 1–20.	Say the number one less than a given number up to 10.		Say how many sides and corners a simple 2D shape has.	Order three or four items in relation to length or height.	
	Recognise numerals 1–5.	Recognise up to six fingers or dots on a dice/domino without counting.		Select a particular 2D shape and use mathematical terms to describe it.	Understand that the capacity of a container is a measure of how much it holds.	
	Recognise numerals 1–10.	Partition a set of five objects into two sets.		Begin to use the language of position to describe a simple location, e.g. behind or next to.	Compare two capacities using direct comparison and using the language of full, half-full and empty.	
	Recognise numerals 1–20.	Partition a set of six objects into two sets.		Move an object into position following a simple instruction, e.g. under the table.	Begin to use mathematical vocabulary associated with measures, e.g. longer, shorter, taller.	
	Count to find out how many in a set up to 5, matching spoken numbers to objects (including irregular arrangements).	Begin to read and understand number sentences.			Recite the days of the week in order.	
	Count to find out how many in a set up to 10, matching spoken numbers to objects (including irregular arrangements).	Begin to know number pairs to 5 by heart.			Use everyday language related to time, e.g. morning, afternoon, evening, lunchtime, after two sleeps, yesterday, today and tomorrow.	
	Begin to write numerals 1–5.				Talk about their daily routine using key vocabulary; order and sequence familiar events.	
	Begin to write numerals 6–10.				Begin to recognise the seasons.	
	Count actions or images or items which cannot be moved, e.g. claps, dotty cards, bricks in a tower.				Begin to recognise coins and to understand that different coins have different values.	
	Estimate a set of objects or images up to 10.					
	Begin to use the language of more and fewer to compare sets of objects.					
	Begin to compare and order numbers to 10.					

	Personal, social and emotional development; Communication and language Work in small and large groups to solve mathematical problems. Share ideas and respond to others with relevant comments, questions or actions. Explore mathematics through play and begin to invent and solve their own mathematical problems. Begin to use mathematical vocabulary in practical activities and discussion.					
YR Spring	Chant numbers in order 1–20.	Say the number one more than a given number up to 10.	Count in twos from 0 to 20 (whisper counting); begin to recognise the pattern.	Begin to use mathematical names for 3D shapes: cone, sphere, cube, cuboid, pyramid, cylinder.	Compare and order two, three or more lengths or heights.	Copy, continue and create repeating patterns of objects, colours, shapes, sounds and actions.
	Chant numbers in order beyond 20.	Say the number one more than a given number up to 20.	Double numbers to 5 using fingers and objects.	Select a particular 3D shape and use mathematical terms to describe it.	Measure a length or height using uniform non-standard units, e.g. plastic bricks.	
	Recognise numerals 1–10.	Say the number one less than a given number up to 10.	Halve even numbers to 10 using fingers and objects.	Recognise line symmetry in pictures, images and simple shapes.	Use and understand the language of length: longer, shorter, taller, etc..	
	Recognise numerals 1–20.	Say the number one less than a given number up to 20.	Recognise and use the terms double and half and halve	Begin to know left and right.	Compare two weights using balances.	
	Count to find out how many in a set up to 10, matching spoken numbers to objects (including irregular arrangements).	Recognise up to six fingers or dots on a dice/domino without counting.	Begin to halve 1 and 3 by cutting cakes in half.	Follow and give directions using left, right, forward and back.	Use and understand the language of weight: heavier, lighter, etc..	
	Count to find out how many in a set up to 20, matching spoken numbers to objects (including irregular arrangements).	Partition a set of up to 10 objects into two sets.		Use the language of position and direction, e.g. forward, back, over, under, above, below, in front of, behind.	Begin to weigh items using uniform non-standard units, e.g. counting bears.	
	Write numerals 1–10.	Recognise and write number sentences using addition and equals signs; begin to recognise subtraction signs in number sentences.			Recite the days of the week in order.	
	Count actions or images or items which cannot be moved, e.g. claps, dotty cards, bricks in a tower.	Know number pairs to 5 by heart.			Say which day it is today, was yesterday and will be tomorrow.	
	Estimate a set of objects or images up to 20, saying whether there are more or less than a given number; check by counting.	Know number pairs to 6 by heart.			Use everyday language related to time, e.g. morning, afternoon, evening, lunchtime, after two sleeps, yesterday, today and tomorrow.	
	Recognise zero as the empty set.	Begin to know number pairs to 10 by heart.			Match key times of the day to o'clock times, e.g. school starts at 9 o'clock.	
	Order numbers to 20.				Recognise that we use digital and analogue clocks to tell the time.	
	Compare two numbers, classifying the largest and the smallest.				Begin to recognise units of time: minutes, hours, days, months and years.	
	Recognise that teen numbers are ten and some more.				Begin to recognise the months of the year and recite in order.	

	Begin to identify even and odd numbers.				Recognise and name coins 1p–£2.	
					Begin to compare and order coins according to value.	
					Begin to make small amounts using two or three coins.	
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YR Summer	Count to find out how many in a set of moveable items up to 20, matching spoken numbers to objects (including irregular arrangements).	Recognise and write number sentences using addition and equals signs.	Share up to 20 objects (multiples of 4) between four people.	Use mathematical names for 2D shapes: circle, triangle, square, rectangle.	Recite the days of the week in order and say which day was yesterday and will be tomorrow.	
	Estimate a set of objects or images up to 20, saying whether there are more or less than a given number; check by counting.	Recognise and write number sentences using subtraction and equals signs.	Double numbers to 5 using fingers and objects.	Say how many sides and corners a simple 2D shape has.	Use everyday language related to time, e.g. morning, afternoon, evening, lunchtime, after two sleeps, yesterday, today and tomorrow.	
	Order numbers to 20.	Say the number one less than a given number up to 20 and count back from any given number up to 20.	Double numbers to 10 using fingers and objects.	Select a particular 2D shape and use mathematical terms to describe it.	Match key times of the day to o'clock times, e.g. school starts at 9 o'clock.	
	Compare two numbers, classifying the largest and the smallest.	Say the number one more than a given number up to 20 and count on from any number up to 20.	Halve even numbers to 10 using fingers and objects.	Use mathematical names for 3D shapes: cone, sphere, cube, cuboid, pyramid, cylinder.	Recognise that we use digital and analogue clocks to tell the time.	
	Count up to 100, including marking actions or images or items which cannot be moved, e.g. claps, steps, dotty cards, bricks in a tower.	Add 2, 3 or 4 to any number up to 20.	Halve even numbers to 20 using fingers and objects.	Select a particular 3D shape and use mathematical terms to describe it.	Begin to recognise units of time: minutes, hours, days, weeks, months and years and the relationship between them, e.g. seven days in a week, four weeks in a month.	
	Recognise zero as the empty set.	Subtract 2, 3 or 4 from any number up to 20.	Recognise and use the terms double and half and halve.		Recognise and name coins 1p–£2 and begin to compare and order coins according to value.	
	Recognise that teen numbers are ten and some more.	Solve practical problems involving addition.	Begin to count in fives from 5 and recognise the pattern.		Begin to make small amounts using two or three coins.	
	Write numerals 1-20.	Solve practical problems involving subtraction.	Count in twos from 0 to 20 and recognise the pattern.		Use and understand the language of length: longer, shorter, taller; compare/order two, three or more lengths or heights.	
	Identify even and odd numbers.	Know number pairs to 5 by heart.	Begin to count in tens from 10 to 100 and begin to recognise the pattern.		Measure a length or height using uniform non-standard units, e.g. plastic bricks.	

	Count back from 20 to zero.	Know number pairs to 6 by heart.			Use and understand the language of weight: heavier, lighter; compare two weights using balances.	
		Know number pairs to 10 by heart.			Begin to weigh items using uniform non-standard units, e.g. blocks.	
		Partition a set of up to 10 objects into two sets.			Understand that the capacity of a container is a measure of how much it holds.	
					Compare two capacities using direct comparison and using the language of full, half-full and empty.	
					Begin to measure capacity using uniform non-standard units, e.g. spoonfuls, cupfuls.	
	Personal, social and emotional development; Communication and language Work in small and large groups to solve mathematical problems. Share ideas and respond to others with relevant comments, questions or actions. Explore mathematics through play and begin to invent and solve their own mathematical problems. Begin to use mathematical vocabulary in practical activities and discussion.					

Term	Number and Place Value (NPV)	Addition and Subtraction (AS)	Multiplication and Division (MD)	Fractions, Decimals, Ratio and Percentages (FDRP)	Measures (MEA)	Geometry (GEO)	Statistics (STA)
Y1 Autumn	Recite the numbers in order counting to 100, forwards and backwards, beginning with 0 or 1, or from any given number. Example: 1, 2, 3, 4, 5, ... 100, 99, 98, 97, 96, ... 47, 48, 49, 50, 51, ...	Subitise numbers to 6.	Find doubles to double 5 using fingers to help. Example: Double 2 is 4. Double 3 is 6. Double 5 is 10.		Compare, measure and begin to record lengths and heights using uniform non-standard units. Example: The toy snake is 10 cubes long. The pencil is 6 cubes long. The snake is longer than the pencil. The bear is 8 blocks high.	Recognise, name and sort common 2D shapes. For example, rectangles (including squares), circles and triangles. Example: It has three sides, it is a triangle. It is symmetrical, it is a square.	
	Estimate a set of objects and count to check how many (up to 50).	Given a number, identify one more and one less, any number up to 20. Example: 1 more than 10 is 11, 1 less than 10 is 9. 1 more than 13 is 14, 1 less than 13 is 12. 1 more than 19 is 20, 1 less than 19 is 18.			Measure and begin to record lengths and heights, beginning to use standard units, e.g. cm, m. Example: The bear is 23 cm high. My hand is 11 cm long. The school hall is 16 metres long.	Describe position, direction and movement, including whole, half, quarter and three- quarter turns. Example: Make a half turn to the right. Raise your left hand up in the air. The teddy is under the table.	
	Identify and represent numbers using objects and pictorial representations including the number line, images, sounds and actions up to 20, matching the number to the object or image (one-to-one correspondence).	Begin to know number bonds to 5, 6 and 7. Example: 5 = 5 + 0, 4 + 1, 3 + 2 6 = 6 + 0, 5 + 1, 4 + 2, 3 + 3 7 = 7 + 0, 6 + 1, 5 + 2, 3 + 4			Recognise and know the value of different denominations of coins. Example: 1p, 2p, 5p, 10p, 20p, 50p and £1		
	Read and write numbers from 1 to 20 in numerals and words. Example: 1 one, 2 two, 3 three, 4 four	Know bonds to 10 and use known addition facts for 10 to solve subtractions. Example: 7 + 3 = 10, 10 – 3 = 7 8 + 2 = 10, 10 – 8 = 2 9 + 1 = 10, 10 – 1 = 9			Find different combinations of small amounts up to 20p.		
	Understand and use 0 to represent the empty set.	Find the missing number in number sentences. Example: 4 + □ = 5 6 + □ = 10 4 + □ = 10					

	Compare and order numbers up to 20 and say a number between two numbers up to 20; begin to understand ordinal numbers. Example: 14, 15, 16 5, 6, 7 11, 12, 13	Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Example: $2 + 3 = 5$ $9 + 1 = 10$ $6 - 2 = 4$					
	Recognise and understand that teen numbers are 10 and some 1s and begin to use this knowledge to compare numbers. Example: $13 = 10 + 3$, one 10 and three 1s. $16 = 10 + 6$, one 10 and six 1s. $17 = 10 + 7$, one 10 and seven 1s.	Use number facts and concrete objects to solve simple word problems. Example: 10 hedgehogs are going to sleep for the winter. 8 are asleep. How many are still awake? There are 4 boys and 3 girls. How many children altogether?					
		Understand that you do not need to count the first number when adding. Example: Work out $8 + 3$ by counting on from 8 without having to count the 8 itself.					
		Add 1-digit and 2-digit numbers to 20, including adding 1, 2 and 3 by counting on. Example: $9 + 1$ $13 + 2$ $8 + 3$					
		Subtract 1-digit and 2-digit numbers to 20, including subtracting 1, 2 and 3 by counting back. Example: $10 - 1$ $15 - 2$ $17 - 3$					

Y1 Spring	Locate 2-digit numbers on a bead string.	Represent and use number bonds and related subtraction facts within 20. Example: $19 + 1 = 20$, $20 - 1 = 19$ $12 + 4 = 16$, $16 - 12 = 4$ $16 + 5 = 21$, $21 - 5 = 16$	Find doubles to double 10. Example: Double 4 is 8. Double 7 is 14. Double 10 is 20.	Divide shapes into halves and quarters and recognise that a half is one of two equal pieces and that a quarter is one of four equal pieces.	Measure and record lengths and heights using uniform non-standard units and begin to use standard units.	Recognise, name and sort common 3D shapes. For example, cuboids (including cubes), pyramids and spheres. Example: It has flat faces, it is a cuboid. It rolls, it is a cylinder. It has eight corners, it is a cube.	Sort objects in a variety of ways, including using Carroll and Venn diagrams. Example: Carroll: Sort children in the class – like cheese / don't like cheese. Venn: Sort shapes – is red / is a triangle / is both / is neither.
	Use the language of equal to, more than, less than (fewer), most, least to compare numbers. Example: 21 is more than 9. 68 is less than 73 because 60 is less than 70. 28, 15, 37, 41: 15 is the least, 41 is the most.	Solve missing number problems and understand a symbol being used for an unknown. Example: $10 - 4 = c$ $10 = c + 2$ $c + 7 = 10$		Read $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$.	Consolidate knowledge of days of the week and the seasons and begin to know months of the year.		
	Count, read and write numbers to 100 in numerals. Example: 1, 2, 3, 4, ...	Use number facts to solve problems in number stories. Example: There are five frogs sitting on a log. Two more frogs jump on. How many are sitting on the log now? There are ten cubes in two tubs. If one tub has six cubes in it, how many must the other tub have? There are six aliens in a spaceship, then two aliens leave. How many aliens in the spaceship now?			Compare, describe and solve practical problems for time.		
	Estimate a quantity by choosing an appropriate range; count a quantity by grouping in 10s and 5s. Example: How many leaves are there? 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 or more? Count: 10, 20, 30, 8 there are 38 leaves.	Know number bonds to 5, 6 and 7 and derive related subtraction facts. Example: $5 - 1 = 4$ $6 - 3 = 3$ $7 - 5 = 2$			Measure and begin to record time. Example: What will we be doing at 6 o'clock? How many hours in a day? How many times can you write your name in 1 minute?		

	Begin to see 2-digit numbers as some 10s and some 1s. Example: $52 = 50 + 2$, five 10s and two 1s. $64 = 60 + 4$, six 10s and four 1s. $23 = 20 + 3$, two 10s and three 1s.	Add 1-digit and 2-digit numbers to 20, including adding a 1-digit number to a 2-digit number by counting on. Example: $44 + 4$ $74 + 3$ $83 + 6$			Sequence events in chronological order using language. For example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. Example: What day comes after Friday? When do you go to sleep? What did you do yesterday morning?		
	Given a number, identify one more and one less, any number up to 100. Example: 1 more than 56 is 57, 1 less than 56 is 55. 1 more than 24 is 25, 1 less than 24 is 23. 1 more than 41 is 42, 1 less than 41 is 40.	Subtract 1-digit and 2-digit numbers to 20, including subtracting a 1-digit number from a 2-digit number by counting back. Example: $28 - 3$ $68 - 4$ $37 - 6$			Begin to tell the time to the hour and half past the hour on digital and analogue clocks and draw the hands on a clock face to show these times. Example: Three o'clock 12 o'clock 7:00		
	Count in multiples of 2s to 20. Example: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20	Begin to know number bonds to 8 and 9. Example: $8 = 8 + 0$, $7 + 1$, $6 + 2$, $5 + 3$, $4 + 4$ $9 = 9 + 0$, $8 + 1$, $7 + 2$, $6 + 3$, $5 + 4$					
	Count in multiples of 5s to 50. Example: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50	Add by putting the larger number first. Example: Work out $3 + 16$ by putting 16 first and counting on 3.					
	Count in multiples of 10s from 10 to 100, and back again, recognising that the multiples end in 0. Example: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 100, 90, 80, 70, 60, 50, 40, 30, 20, 10						

	Count on and back in multiples of 10s, to and from any number up to 100. Example: 14, 24, 34, 44, 54, ... 75, 65, 55, 45, 35, ... 9, 19, 29, 39, 49, ...						
Y1 Summer	Compare and order 2-digit numbers and say a number between two numbers. Example: 29, 68, 73, 82, 91 69, 70, 71 and 72 all come between 68 and 73. 89 is bigger than 78 because it has more 10s.	Solve 1-step problems that involve addition or subtraction using concrete objects and pictorial representations.	Know doubles to double 10 and find related halves. Example: Double 6 is 12, half of 12 is 6. Double 8 is 16, half of 16 is 8. Double 9 is 18, half of 18 is 9.	Recognise, find and name a quarter as one of four equal parts of an object or shape.	Compare, describe and solve practical problems, e.g. by direct comparisons, for lengths and heights, weight and capacity. Example: Which holds more, the jug or the bottle? Which snake is the shortest?	Identify and continue a repeating pattern of shapes.	Begin to create, read and interpret a block graph. Example: Weigh pieces of fruit using wooden bricks. Draw a block graph showing the weight of each piece of fruit, where each block represents one wooden brick. How many bricks does the apple weigh?
	Say the number 1 or 10 more or 1 or 10 less than any number up to 100. Example: 1 more than 33 is 34, 1 less is 32. 10 more than 33 is 43, 10 less than 33 is 23. 10 more than 58 is 68, 10 less than 58 is 48. 10 more than 21 is 31, 10 less than 21 is 11.	Find 10 more than any number to 90 by counting on in 10s rather than counting on in 1s. Example: $28 + 10 = 38$ $41 + 10 = 51$ $50 + 10 = 60$	Begin to multiply by 2, 5 and 10 by counting in 2s, 5s and 10s, using repeated addition and spotting patterns. Example: 2, 4, 6, 8, 10: $2 + 2 + 2 + 2 + 2 = 10$ 10, 20, 30, 40, 50: $10 + 10 + 10 = 30$ 5, 10, 15, 20, 25, 30, 35, 40, 45, 50: $5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 50$	Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Example: $\frac{1}{2}$ of 6 $\frac{1}{2}$ of 8 $\frac{1}{2}$ of 12 $\frac{1}{2}$ of 3 is $1\frac{1}{2}$	Recognise and know the value of different denominations of coins and notes. Example: 1p, 2p, 5p, 10p, 20p, 50p, £1 £2, £5, £10, £20, £50	Identify and describe with reference to their properties common 2D and 3D shapes.	Read and interpret a simple pictogram. Example: Display a pictogram showing the different pets in the class. <i>How many children have a rabbit? Which pet is the least popular? Which pet is the most common? How many more children have a dog than have a cat?</i>
	Identify patterns on a 100-square. Example: The numbers down each column go up in 10s. In the numbers along the diagonal (bottom left to top right), the 1s digits go up in 1s and the 10s digits go down in 1s.	Find 10 less than any number to 100 by counting back in 10s rather than counting back in 1s. Example: $27 - 10 = 17$ $32 - 10 = 22$ $93 - 10 = 83$	Count in 2s, 5s and 10s to solve grouping problems. Example: Show three towers of five cubes. 5, 10, 15. There are 15 cubes. Show five towers of two cubes. 2, 4, 6, 8, 10. There are 10 cubes. Show six towers of ten cubes. 10, 20, 30, 40, 50, 60. There are 60 cubes.	Begin to halve odd numbers to 10. Example: Half of 3 is $1\frac{1}{2}$. Half of 7 is $3\frac{1}{2}$. Half of 9 is $4\frac{1}{2}$.	Recognise and use language relating to dates, including days of the week, weeks, months and years. Example: List the months from January to December. When is your birthday? What month comes after July?		

	Locate 2-digit numbers on a 1-100 grid and beaded line. Example: $9 - 5 = 4$ $9 - 4 = 5$ $9 - 8 = 1$	Know pairs of numbers which make the numbers to 9 and derive related subtraction facts. Example: $9 - 5 = 4$ $9 - 4 = 5$ $9 - 8 = 1$	Solve 1-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. Example: There are three sticks of five cubes. How many cubes? $3 \times 5 = 15$. Use 1p coins. Double 3p is 6p. Share seven apples between two children. $3 \frac{1}{2}$ apples each.	Tell the time to the hour and half past the hour on digital and analogue clocks and draw the hands on a clock face to show these times. Example: Half past three Half past four 6:30		
	Count in multiples of 2s to 20 and beyond, spotting patterns. Example: ..., 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, ... The numbers always end in 0, 2, 4, 6, 8	Bridge 10 when adding pairs of 1-digit numbers. Example: $8 + 7$ as $8 + 2 + 5$ $9 + 2$ as $9 + 1 + 1$ $6 + 7$ as $6 + 4 + 3$			Measure and begin to record mass/weight. Example: An apple weighs the same as three blocks. An orange weighs the same as four blocks. The orange weighs more than the apple.	
	Count in multiples of 5s to 50 and beyond and know that multiples of 5 end in 0 or 5. Example: ..., 30, 35, 40, 45, 50, 55, 60, 65, 70, ...	Sort additions into those you 'just know' and those you work out. Example: Just know: $4 + 2$, $10 + 10$ Work out: $19 + 7$, $13 - 7$			Measure and begin to record capacity. Example: The saucepan holds more water than the mug. It takes four yoghurt pots to fill the bottle with sand. The watering can holds the most water.	
	Identify 10s and 1s in 2-digit numbers, and say how many 10s and 1s in a given 2-digit number. Example: $58 = 50 + 8$, five 10s and eight 1s. $95 = 90 + 5$, nine 10s and five 1s. $26 = 20 + 6$, two 10s and six 1s.	Add 1-digit and 2-digit numbers to 20, including using number facts to add 1-digit numbers to 2-digit numbers. Example: Use $5 + 2$ to work out $45 + 2$ or $85 + 2$.			Find change from 10p and 20p using counting up and number facts. Example: $10p - 3p$ $10p - 8p$ $20p - 17p$	

		Subtract 1-digit and 2-digit numbers to 20, including using number facts to subtract 1-digit numbers from 2-digit numbers. Example: Use $5 - 2$ to work out $45 - 2$ or $85 - 2$.					
		Add 1-digit and 2-digit numbers to 20, including adding three small numbers using pairs to 10 and doubles. Example: $5 + 5 + 8$ $7 + 9 + 3$ $6 + 4 + 6$					

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Y2 Autumn	Count in steps of 2 and 5 from 0, and in tens from any number, forward and backward. Example: Jack jumps in 10s along the beaded number line. Jack makes three jumps. Where does he land? Jemma jumps in 5s. Where will she land if she makes five jumps? 47, 57, 67; 91, 81, 71, 61; 23, 33, 43	Know all the pairs of numbers which make the numbers up to 10. Example: 5 = 5 + 0, 4 + 1, 3 + 2 8 = 8 + 0, 7 + 1, 6 + 2, 5 + 3, 4 + 4 9 = 9 + 0, 8 + 1, 7 + 2, 6 + 3, 5 + 4	Begin to find doubles and near doubles of numbers to 15.		Understand the need for a standard unit. Example: We could measure with crayons, but as the crayons are all different lengths, we do not know if the item is 10 long crayons long or 10 short crayons long. We need all the crayons to be the same length.	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. Example: Triangle: three straight sides, no right angles, has line symmetry Pentagon: five straight sides, no right angles, has line symmetry.	Sort objects using Venn diagrams and two-way Carroll diagrams and understand the overlap in a Venn diagram. Example: Sort 2D shapes in a Venn diagram: Symmetrical / Triangles / Both / Neither
	Begin to compare and order numbers from 0 to 100 using <, > and = signs, and work systematically to find all possible inequalities. Example: 85 > 44 27 < 51 Children write the numbers 23, 57, 84 and 75 in order from smallest to largest. They then write as many inequalities as they can using these four numbers.	Begin to understand the inverse relationship between addition and subtraction. Example: 5 + 4 = 9, so 9 – 5 = 4 2 + 6 = 8, so 8 – 2 = 6 2 + 5 = 7, so 7 – 2 = 5	Count in 2s, 5s and 10s from 0 to learn multiples of 2, 5 and 10.		Begin to know whether to measure in cm or m. Example: Do you think it would be good to measure the length of your finger in metres? Why not? What would be better?	Compare and sort common 2D shapes and everyday objects.	
	Locate and place 1- and 2-digit numbers on a beaded and landmarked line and a 1-100 square.	Solve problems with addition and subtraction applying their increasing knowledge of mental and written methods.			Begin to estimate and measure in cm. Example: What might be smaller than 1 cm long? Between 1 cm and 5 cm long?	Use mathematical vocabulary to describe position, direction and movement including movement in a straight line. Example: Turn a half turn clockwise. Take a step to the left. Move three steps backwards.	

	Begin to recognise the place value of each digit in a 2-digit number and find and record all possible amounts using a given number of 10p and 1p coins. Example: 45 = 40 + 5, four 10s and five 1s 36 = 30 + 6, three 10s and six 1s	Say all bonds to 10 and know them by heart. Example: 10 = 10 + 0, 9 + 1, 8 + 2, 7 + 3, 6 + 4, 5 + 5			Begin to estimate and measure in m. Example: How long do you think the classroom might be? Is the length less than 5 m, between 5 and 10 m or more than 10 m? Is a car more than 1 m long or less than 1 m long?	Distinguish between rotation as a turn and in terms of right angles for quarter, half and three quarter turns (clockwise and anticlockwise).	
		Use number facts to solve related subtractions. Example: Use 9 – 4 to work out 39 – 4 and 99 – 4 Use 7 – 5 to work out 27 – 5 and 47 – 5 Use 6 – 3 to work out 36 – 3 and 27 – 3			Combine amounts to make a particular value up to £1·00. Example: 10p + 2p + 2p = 14p 10p + 10p + 5p = 25p		
		Begin to write word problems and relate known number bonds to context-based problems. Example: A bird lays 10 eggs. A snake sneaks up to the nest and steals three eggs. How many are left? A superhero has been trapped by her enemy who plans to take all her super powers. The enemy knows six of the superhero's super powers. The hero has ten powers in total. How many more powers does she have?			Find different combinations of coins that equal the same amounts of money up to £1·00.		
		Recognise and work out multiple of 10 bonds to 100, using bonds to 10. Example: 10 = 10 + 0, 9 + 1, 8 + 2, 7 + 3, 6 + 4, 5 + 5 100 = 100 + 0, 90 + 10, 80 + 20, 70 + 30, 60 + 40, 50 + 50					

		Show that addition of two numbers can be done in any order (commutative). Example: $5 + 2 = 2 + 5$ $18 + 2 = 2 + 18$ $45 + 21 = 21 + 45$					
		Recall and use addition and subtraction facts to 20 fluently. Example: $20 = 20 + 0$, $19 + 1$, $18 + 2$, $17 + 3$, $16 + 4$, $15 + 5$, $14 + 6$, $13 + 7$, $12 + 8$, $11 + 9$, $10 + 10$					
		Use number facts to solve related additions and begin to think and record systematically. Example: Use $5 + 3$ to work out $25 + 3$ and $85 + 3$ Use $4 + 7$ to work out $14 + 7$ and $34 + 7$ Use $6 + 4$ to work out $16 + 4$ and $16 + 5$					
		Add and subtract mentally a 2-digit number and tens, including adding or subtracting 10 to and from any number up to 100 (positive answers only). Example: $43 + 10$ $51 + 30$ $62 - 10$ $47 - 20$					
		Solve problems with addition and subtraction using concrete objects and pictorial representations. Example: Work out $44p + 21p$ by using and counting coins.					
		Begin to add and subtract two 2-digit numbers by counting on or back in 10s and 1s.					

Y2 Spring	Estimate a quantity, less than 100, within given ranges. Example: Are there 0–10, 11–20, 21–50 or 51–100? Are there 0–10, 11–25, 26–50, 51–75 or 76–100?	Use bonds to 10 and 20 to subtract from 10 and 20. Example: $10 - 6 = 4$ $20 - 9 = 11$ $20 - 14 = 6$	Double numbers to double 15 and find related halves. Example: $6 + 6 = 12$ Half of 14 is 7. Double 11 is 22.	Understand mixed numbers and place halves on a number line. Example: One whole and one half = $1\frac{1}{2}$ Four wholes and one quarter = $4\frac{1}{4}$ Three wholes and one half = $3\frac{1}{2}$	Find change from 10p and 20p, £10 and £20, by counting up in ones and knowing bonds to 10 and 20. Example: $7p + 3p = 10p$ $12p + 8p = 20p$ $£17 + £13 = £20$	Identify and describe the properties of 3D shapes including the number of edges, vertices and faces. Example: Cube: twelve edges, eight vertices, six faces Cylinder: two edges, no vertices, three faces	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Example: Construct a block graph showing how many times each child in the class can write their name in one minute.
	Locate and place 2-digit numbers on a landmark line and a 1-100 square and use this knowledge to compare and order numbers.	Solve missing number problems involving the inverse relationship between addition and subtraction. Example: Use $10 - 4 = 6$ to work out $\square + 4 = 10$ $5 + 2 = 7$ so $7 - 5 = 2$, so $27 - 5 = 22$ $5 + 3 = 8$ so $8 - 5 = 3$ so $38 - 5 = 33$	Recognise odd and even numbers. Example: Even numbers end in 0, 2, 4, 6 or 8 Odd numbers end in 1, 3, 5, 7 or 9	Recognise, find, name and write fractions $\frac{1}{3}$ and $\frac{2}{3}$ of a shape.	Tell and write the time quarter past/to the hour on analogue and digital clocks and draw the hands on a clock face to show these analogue times. Example: Quarter to 5 8:15	Identify 2D shapes on the surface of 3D shapes; for example, a circle on a cylinder and a triangle on a pyramid. Example: A square and a rectangle on a cuboid. A circle on a cone.	
	Recognise the place value of each digit in a 2-digit number. Example: $21 = 20 + 1$, two 10s and one 1 $55 = 50 + 5$, five 10s and five 1s $82 = 80 + 2$, eight 10s and two 1s	Add numbers using concrete objects and pictorial representations, e.g. number lines, to add 1- and 2-digit numbers. Example: Work out $52 + 16$ on a bead string by counting on one 10 (to 62) and then six 1s (63, 64, 65, 66, 67, 68). So $52 + 16 = 68$	Begin to know the 2, 5 and 10 times tables and investigate multiplications with the same answer. Example: $1 \times 2 = 2$, $2 \times 2 = 4$, $3 \times 2 = 6$, $4 \times 2 = 8$... $1 \times 5 = 5$, $2 \times 5 = 10$, $3 \times 5 = 15$, $4 \times 5 = 20$... $1 \times 10 = 10$, $2 \times 10 = 20$, $3 \times 10 = 30$, $4 \times 10 = 40$ $2 \times 10 = 20$; $4 \times 5 = 20$; $10 \times 2 = 20$	Recognise, find, name and write fractions $\frac{1}{4}$ and $\frac{2}{4}$ ($\frac{1}{2}$) of a shape.	Know units of time: minutes, hours, days, weeks, months and years.	Compare and sort common 3D shapes and everyday objects.	
	Round 2-digit numbers to the nearest 10. Example: 42 rounds to 40 25 rounds to 30 67 rounds to 70	Add mentally two 2-digit numbers by counting on in 10s and 1s. Example: To work out $65 + 23$, start with 65 and count on 20 in 10s, then add 3. To work out $71 + 16$, start with 71 and count on 10 in 10s, then add 6. To work out $34 + 33$, start with 34 and count on 30 in 10s, then add 4.	Calculate mathematical statements for multiplication within the multiplication tables, to go with hops on number lines and with arrays, and write them using the multiplication ($\times$), division ($\div$) and equals ($=$) signs. Example: A two by five array shows $2 \times 5 = 10$ Three hops of 5 show $3 \times 5 = 15$ Seven hops of 10 show $7 \times 10 = 70$	Recognise, find, name and write fractions $\frac{2}{4}$ ($\frac{1}{2}$) of a set of objects or quantity, including finding half of odd numbers. Example: Half of 16 is 8. Half of 15 is $7\frac{1}{2}$. Half of 68 is 34.	Know the relationship between seconds and minutes and minutes and hours, including the number of minutes in an hour and the number of hours in a day.	Order and arrange combinations of mathematical objects, including 2D and 3D shapes, in repeating patterns and sequences.	

		Add and subtract 10 in order to add or subtract 9 or 11 to and from a 2-digit number. Example: Use $45 + 10$ to work out $45 + 9$ or $45 + 11$ Use $74 + 10$ to work out $74 + 9$ or $74 + 11$ Use $28 - 10$ to work out $28 - 9$ or $28 - 11$	Arrange objects into arrays, write the corresponding multiplication and investigate all possible arrays for a given number of cubes. Example: Children use 12 interlocking cubes to make as many different arrays as they can. Repeat for 18 cubes and then for 24 cubes.	Count in steps of $\frac{1}{2}$ and a $\frac{1}{4}$.	Recognise and use symbols for pounds (£) and pence (p) with no zeros in the 10p place and use coins to solve simple problems involving addition. Example: $65p + 32p$ $25p + 59p$ $27p + 67p$		
		Use place value and number facts to solve problems, for example using bonds to 10 to find complements to the next multiple of 10. Example: $36 + \square = 40$ $45 + \square = 50$ $78 + \square = 80$	Begin to write divisions as multiplications with a missing number. Example: $12 \div 4 = \square$, $\square \times 4 = 12$ $15 \div 3 = \square$, $3 \times \square = 15$ $14 \div 2 = \square$, $\square \times 2 = 14$		Recognise and know the values of all coins and notes up to £20. Example: 1p, 2p, 5p, 10p, 20p, 50p, £1, £2, £5, £10, £20		
			Understand division as grouping. Example: $\square \times 2 = 10$: ten socks divided into pairs will make five pairs. $\square \times 6 = 30$: thirty pencils divided into pots of six pencils will fill five pots. $\square \times 4 = 24$: twenty-four buns divided into packs of four will make six full packs.		Find all possible amounts using three coins (1p–£2). Example: Children find all the possible amounts with three coins of different colours; gold, silver and copper (not including 5p).		

			Solve problems involving multiples of 2, 5 and 10 in a practical context, using coins and objects. Example: There are two baby birds sitting in each nest. There are three nests in the tree. How many baby birds? There are 10 petals on each flower. There are four flowers. How many petals? An apple costs 12p. If you only had two pence coins, how many would you need to pay for the apple?			
Y2 Summer	Identify, represent and estimate numbers using different representations, including the number line; beginning to move beyond 100.	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Example: 45 + 21 is the same as 21 + 45, but 45 – 21 is not the same as 21 – 45 12 + 47 is the same as 47 + 12, but 12 – 47 is not the same as 47 – 12	Recall and use multiplication and division facts for the 2, 5, and 10 times-tables. Example: 20 ÷ 2 = □ Sam has four 5p coins. How much money does he have? Scarlet has saved 10p a week for six weeks. How much has she saved?	Recognise, find, name and write fractions $\frac{1}{4}$ and $\frac{2}{4}$ ($\frac{1}{2}$), and begin to recognise, find, name and write $\frac{1}{3}$ and $\frac{3}{4}$, of a set of objects or quantity. Example: $\frac{3}{4}$ of 16 = 12 $\frac{1}{3}$ of 12 = 4	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass/weight (kg/g); temperature (°C); capacity (l/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels. Example: A bag of flour weighs 1 kg. How long is your hand in cm?	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity, and ask and answer questions about totalling and comparing categorical data. Example: Create a pictogram showing how children in our class like to come to school and use it to answer questions such as: How many children prefer to walk?
	Compare and order numbers from 0 up to 100; use <, > and = signs.	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Example: 32 + 54 = 86, so 86 – 32 = 54 22 + 75 = 97, so 97 – 75 = 22 53 + 33 = 86, so 87 – 53 = 33	Calculate mathematical statements for multiplication and division within the multiplication tables, to go with hops on number lines and with arrays, and write them using the multiplication (×), division (÷) and equals (=) signs. Example: A four by three array shows 4 × 3 = 12 A five by four array shows 5 × 4 = 20	Write simple fractions. Example: $\frac{1}{2}$ of 6 = 3 $\frac{1}{4}$ of 12 = 3 $\frac{1}{3}$ of 12 = 4	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. Example: I buy something for £6 and I pay with a £10 note. How much change do I get?	

	Use place value and number facts to solve problems. Example: $47 - 39 = \square$ $50\text{p} - 37\text{p} = \square$ There are 17 cars in a car park and 3 more cars arrive. How many cars?	Subtract mentally two 2-digit numbers, including working out small differences between two 2-digit numbers using knowledge of complements to 10 and place value. Example: $60 - 52$ by adding 8 $52 - 46$ by counting up from 46 to 50, to 52 $66 - 32$ by counting back 30, and then 2	Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Example: $3 \times 6 = 18$ is the same as $6 \times 3 = 18$ but $18 \div 3$ is not the same as $3 \div 18$ $3 \times 9 = 27$ is the same as $9 \times 3 = 27$ but $27 \div 9$ is not the same as $9 \div 27$	Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. Example: $1 \frac{2}{4} = 1 \frac{1}{2}$	Recognise and use symbols for pounds (£) and pence (p) and find more than one way to solve a money problem (£1, 10p and 1p coins). Example: Children investigate what amounts of money they can make using five coins from piles of £1, 10p and 1p coins. <i>What is the largest amount of money you can make? And the smallest?</i>		
	Count in steps of 3 from 0, forward and backward. Example: Jamal jumps in 3s. Where will Jamal be after five jumps? Where will he be after seven jumps? How many jumps will Jamal need to reach 12?	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving quantities and measures. Example: $50 - 46$ $43 - 38$ $54\text{p} + 73\text{p}$	Solve problems involving multiplication and division using materials, arrays, repeated addition, 'clever counting', mental methods and multiplication and division facts, including problems in contexts. Example: The monsters have five legs each. There are 35 shoes. How many monsters? $\square \times 2\text{p} = 16\text{p}$, $16\text{p} \div 2 = \square$	Find a quarter of numbers, up to 40, by halving twice. Example: $\frac{1}{4}$ of 20 = 5 $\frac{1}{4}$ of 24 = 6 $\frac{1}{4}$ of 40 = 10	Compare and order lengths, mass and capacities and record the results using >, < and =. Example: Pencil 12 cm > crayon 8 cm Apple 100 g < potato 200 g $1000\text{ g} = 1\text{ kg}$		
	Begin to see that when counting from 100–200, the numbers replicate the pattern from 0–100.	Subtract numbers using concrete objects and pictorial representations, e.g. number lines, to subtract 1- and 2-digit numbers (positive answers only). Example: Work out $76 - 35$ using Fly on the 100-square to count back three 10s first (to 46) and then five 1s (45, 44, 43, 42, 41). So $76 - 35 = 41$.	Solve missing number multiplications by counting up in steps. Example: $\square \times 2 = 14$ $\square \times 5 = 20$ $\square \times 3 = 12$		Tell and write the time to 5 minutes past the hour on analogue and digital clocks and draw the hands on a clock face to show these analogue times. Example: Five minutes past 8 2:30 Six forty-five		

	Begin to recognise the place value of each digit in a 3-digit number. Example: $457 = 400 + 50 + 7$, four 100s, five 10s and seven 1s $214 = 200 + 10 + 4$, two 100s, one 10 and four 1s $739 = 700 + 30 + 9$, seven 100s, three 10s and nine 1s	Add mentally a 2-digit number and ones, including adding any 1-digit number to a 2-digit number using number facts or bridging 10. Example: $34 + 3$ $34 + 7$ $38 + 6$	Double and halve multiples of 10 and 5 and 2-digit numbers ending in 1, 2, 3 or 4, answers less than 100. Example: Double 15 is 30. Double 40 is 80. Double 23 is 46.		Tell and write the time to 5 minutes to the hour on analogue and digital clocks and draw the hands on a clock face to show these analogue times. Example: Twenty minutes to 3 Ten to 4 1:35		
	Read and write numbers to at least 100 in numerals and in words.	Subtract mentally a 2-digit number and ones, including subtracting any 1-digit number from a 2-digit number using number facts or bridging 10. Example: $45 - 8$ $65 - 6$ $72 - 3$	Count in 3s, multiply and divide by 3 using arrays, representations and concrete objects, and begin to know the 3 times table. Example: $1 \times 3 = 3$, $2 \times 3 = 6$, $3 \times 3 = 9$, $4 \times 3 = 12 \dots$		Find the time 10 minutes later; use 10 minutes as an interval of time; begin to compare and sequence intervals of time. Example: 5:45, 5:55 9:30, 9:40 6:10, 6:20		
		Add mentally two 2-digit numbers, using partitioning and number facts. Example: $31 + 26 = 50 + 7 = 57$ $38 + 47 = 70 + 15 = 85$ $76 + 16 = 80 + 12 = 92$	Use mathematical reasoning to identify and explain patterns and use these to predict answers. Example: 3×2, 3×3, 3×4, 3×5, 3×10 4×2, 4×3, 4×4, 4×5, 4×10 5×2, 5×3, 5×4, 5×5, 5×10				
		Subtract mentally two 2-digit numbers, including subtracting one 2-digit number from another by counting back in 10s and 1s, not crossing 10s.	Understand that division and multiplication are inverse operations. Example: $9 \div 3 = 3$ and $3 \times 3 = 9$ $5 \times 3 = 15$ and $15 \div 3 = 5$ $7 \times 5 = 35$ and $35 \div 5 = 7$				
		Add mentally three 1-digit numbers, using known number facts and doubles. Example: $7 + 5 + 3$ $8 + 4 + 8$ $7 + 9 + 1$					

		Understand subtraction as difference and find this by adding to the next multiple of 10, using bonds to 10. Example: 40 – 36 (36 + 4 = 40) 30 – 27 (27 + 3 = 30) 90 – 84 (84 + 6 = 90)					
		Use addition and subtraction and number bonds to 10 and 20 to solve problems in number stories. Example: Six baby elephants follow four adult elephants. How many elephants? 6 + 4 = 10 Oscar bakes 8 cakes and Lukas bakes 12 cakes. How many cakes? 8 + 12 = 20					
		Derive and use related facts up to 100. Example: 70 + 30 65 + 35 The temperature is 83°C. How much does the temperature need to rise by to reach 100°C?					

Term	Number and Place Value (NPV)	Addition and Subtraction (AS)	Multiplication and Division (MD)	Fractions, Decimals, Ratio and Percentages (FDRP)	Measures (MEA)	Geometry (GEO)	Statistics (STA)
Y3 Autumn	Read and write numbers up to 1000 in numerals and in words. Example: Three hundred and ninety-four = 394 Seven hundred and six = 706	Recall or quickly find multiples of 5 bonds to 100. Example: $25 + 75 = 100$ $100 - 35 = 65$	Recall doubles of numbers 1 to 20, derive the related halves and apply reasoning skills to choose numbers that will give the longest halving chains. Example: Halve even numbers / add 1 to odd numbers to make the longest halving chain, starting < 40. (10→5→6→3→4→2→1)	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators, e.g. $\frac{1}{2}$, $\frac{1}{3}$s and $\frac{1}{4}$s of multiples of 2, 3 and 4, using visual representations. Example: $\frac{3}{4}$ of 12 is 9 $\frac{1}{3}$ of 21 = 7	Tell and write the time to the nearest 5 minutes from an analogue or digital clock, including using Roman numerals from I to XII. Example: 8:40 = twenty minutes to nine 13:05 = five minutes past on in the afternoon	Draw and make 3D shapes using modelling materials.	
	Recognise the place value of each digit in a 3-digit number (100s, 10s, 1s). Example: $300 + 60 + 7 = \square$ $700 + \square + 4 = 754$	Use number bonds and number patterns to add and subtract 1-digit numbers from 2-digit numbers. Example: $7 + 5$, $37 + 5$, $87 + 5$ $15 - 7$, $45 - 7$, $75 - 7$	Double 2-digit numbers to 50 and halve 2-digit numbers up to 100. Example: Double $24 = 48$ $56 \div 2 = 27$	Understand fractions as parts of a whole and compare unit fractions.	Know the number of days in each month, year and leap year and use this to try different approaches and find ways of overcoming difficulties. Example: Referring to a calendar: How many Thursdays in January?	Recognise 3D shapes in different orientations and describe them. Example: Cube: 6 faces, 12 edges, 8 vertices Cone: 2 faces, 1 edge, 0 vertices	
		Add several numbers, spotting doubles and bonds. Example: $11 + 6 + 9$ $9 + 7 + 7$	Recall and use multiplication and division facts for the 2, 3, 4, 5 and 10 multiplication tables. Example: $\square \times 3 = 36$ $50 \div 5 = \square$	Understand that a fraction is an equal part of a whole and that a unit fraction is one part and a non-unit fraction is several parts.	Solve number and practical problems using place value to add and subtract amounts of money. Example: $\pounds 5.00 + \pounds 3.16$ $78\text{p} - 40\text{p}$		
		Add and subtract multiples and near multiples of 10 by counting on and back or by using number facts and place value. Example: $26 + 61$ $93 - 30$	Understand that division is the inverse of multiplication. Example: $6 \times 3 = 18$; $18 \div 3 = 6$ $7 \times 4 = 28$; $28 \div 4 = 7$	Look for patterns, make predictions and begin to see the relationship between finding fractions of amounts and division. Example: Which numbers can be split into thirds/quarters/both: 12, 13, 18, 21, 18, 23, 24, 28, 31, 36, 48, 56	Measure and compare lengths; (m/cm/mm) and capacity (ml/L). Example: $15\text{ cm} < 30\text{ cm}$ $1\text{ L} > 500\text{ ml}$		

		Work systematically, using logical reasoning and deduction, to find number pairs that total a 2-digit number. Example: Find all pairs that make 55, 66, 77, 88 or 99	Understand that a remainder is the amount left over after a division and begin to understand the patterns of remainders. Example: $76 \div 10 = 7, r6$ Explore which numbers, 3 to 30, give remainder 1 when divided by 3.				
		Spot patterns to add any pair of 2-digit numbers, choosing an appropriate strategy, for example using bonds. Example: $74 + 58$ $53 + 58$	Use commutativity to find multiplication facts using known facts. Example: Use 3×7 to work out 7×3 Use 4×9 to work out 9×4				
		Spot patterns to subtract any pair of 2-digit numbers, choosing an appropriate strategy, for example using bonds. Example: $85 - 21$ $85 - 78$					
		Use knowledge of bonds to add to the next multiple of 10 and then on to 100. Example: $57 + \square = 100$; $7 + 3 = 10$ $57 + 3 = 60$; $60 + 40 = 100$ so $57 + 43 = 100$					
		Begin to derive pairs of numbers that total 100. Example: $57 + 43$					
Y3 Spring	Understand 2- and 3-digit numbers; find 1, 10 or 100 more or less than a given number without difficulty.	Find pairs with a total of 100 or a maximum total of £1.00. Example: $53 + 47 = 100$ $81 + 19 = 100$	Understand the relationship between doubling and halving. Example: Half of 36 is 18. What is double 18?	Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators, e.g. identify $\frac{1}{2}$s, $\frac{1}{3}$s, $\frac{1}{4}$s, $\frac{1}{5}$s, $\frac{1}{6}$s and $\frac{1}{8}$s, and say how many are needed to make a whole.	Tell and write the time to the nearest minute from an analogue clock, including using Roman Numerals from I to XII, or a digital clock. Example: 4:07 = seven minutes past four 11:34 = twenty-six minutes to twelve	Identify and draw 2D shapes, and describe their properties. Example: Square: 4 equal sides; 4 right angles Triangle: 3 straight sides; 3 angles	

	Round numbers to the nearest 10 and 100, using a number line. Example: 425 rounds to 430, 400 662 rounds to 660, 700	Add numbers mentally, including 2-digit and 3-digit numbers. Example: $351 + 46$ $368 + 102$	Recall and use multiplication and division facts for the 2, 3, 4, 5 and 10 multiplication tables. Example: $\square \times 4 = 48$ $11 \times 10 = \square$	Mark and identify simple fractions on 0 to 1 lines.	Calculate time intervals and compare durations of events. Example: It was 10 past 6. We played for 15 minutes. What time is it now?	Identify right angles, recognise that 2 right angles make a half turn, 3 make $\frac{3}{4}$ of a turn and 4 complete a turn; identify whether angles are greater than or less than a right angle.	
	Identify, represent and estimate numbers using different representations including a number line.	Subtract 2-digit numbers from 3-digit numbers, and begin to subtract 3-digit numbers from 3-digit numbers, using counting up and by looking for patterns in the digits. Example: $141 - 76$ $123 - 87$	Multiply 2-digit numbers by 4 by doubling twice, and divide 2-digit numbers by 4 by halving twice (whole-number answers). Example: $4 \times 16: 16 \times 2 = 32; 32 \times 2 = 64$ $32 \div 4: 32 \div 2 = 16; 16 \div 2 = 8$	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators, for example $\frac{1}{2}$s, $\frac{1}{3}$s, $\frac{1}{4}$s, and $\frac{1}{5}$s of amounts (whole number answers only).	Begin to measure the perimeter of simple 2D shapes.		
	Multiply and divide by 10 (whole-number answers). Example: $850 \div 10$ $\square \times 10 = 460$	Count up to find change from £5 and £10 (multiples of 5p). Example: £5.00 – £2.80 £10 – £4.65	Solve problems, including missing number problems, involving multiplication and division. Example: $200 \div 5 = \square$ $8 \times \square = 240$	Recognise and show, using diagrams, equivalent fractions with small denominators. Example: $\frac{1}{2} = \frac{2}{4}$ $\frac{4}{5} = \frac{8}{10}$	Know the number of seconds in a minute. Example: Ask children to estimate when 1 minute has gone by.		
	Count from 0, in steps of 10, 50 and 100, and find 10 or 100 more or less than a given number; spot patterns in both systems to solve problems. Example: Count in 10s from 4 to 1004, in 50s from 4 to 1004 and in 100s from 4 to 1004. Write the numbers that would be in 2 and in all 3 counts.	Solve simple word problems using addition or subtraction.	Double numbers, and halve even numbers, up to 100 by partitioning. Example: 2×68 $94 \div 2$ For a sports day, 42 oranges are cut into half. How many halves are there?				
	Begin to compare and order numbers up to 1000, using < and > signs. Example: $375 < 526$ $420 > 201$	Begin to add numbers with up to 3 digits, using formal written methods of columnar addition (1s greater than 10s or 10s greater than 100s). Example: $659 + 225$ $447 + 526$ $466 + 268$	Multiply numbers between 10 and 25 by 3, 4 and 5. Example: 3×24 21×4 5×16				

	Work systematically and make generalisations. Example: Investigate how many 3-digit numbers there are where the 10s number is a 3. How many will there be in all the three-digit numbers? How do you know?	Investigate patterns when adding numbers, estimate the answer to a calculation and begin to use a systematic approach, including using inverse operations, to check answers. Example: Add palindromic number pairs, make predictions and test them. Spot a pattern in the relationship between the 100s and 1s.	Multiply and divide multiples of 10 by 3, 4 and 5 (with no remainders). Example: 3×40 $120 \div 4$ 5×20				
			Begin to use the grid method to multiply 2-digit numbers from 10 to 25 by 1-digit numbers.				
Y3 Summer	Count from 0 in multiples of 4, 8, 10, 50 and 100; find 10 or 100 more or less than a give number. Example: Cows have four legs. How many legs are there on 12 cows?	Subtract a 2-digit or 3-digit number using place value. Example: $363 - 99$ $350 - 110$	Recall and use multiplication and division facts for the 2, 3, 4, 5, 8 and 10 multiplication tables. Example: $9 \times 4 = \square$ $\square \times 8 = 72$	Add and subtract fractions with the same denominator within one whole. Example: $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ $\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$	Add and subtract amounts of money to give change, using both £ and p in practical contexts. Example: $\text{£}10 - \text{£}3.99$ $\text{£}20 - \text{£}15.42$	Recognise angles as a property of shape or a description of a turn.	Interpret and present data using bar charts, pictograms and tables. Example: Using a pictogram showing favourite games: What does each picture represent? How many children prefer board games? Present the information on a bar chart.
	Compare and order numbers up to 1000, using < and > signs. Example: $375 < 526$ $420 > 201$	Find change from £10 and begin to find change from £20. Example: $\text{£}10 - \text{£}4.69$ $\text{£}10 - \text{£}5.32$ $\text{£}20 - \text{£}12.55$	Understand the relationship between multiplication and division. Example: $90 \div 3 = \square$; $\square \times 3 = 90$ $160 \div 4 = \square$; $\square \times 4 = 160$	Compare and order unit fractions, and fractions with the same denominators. Example: $\frac{3}{6} < \frac{5}{6}$ $\frac{3}{6} > \frac{1}{5}$	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (L/ml). Example: $12 \text{ cm} + 10 \text{ cm}$ $100 \text{ g} < 250 \text{ g} < 1 \text{ kg}$	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	Solve 1-step and 2-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables. Example: Draw a bar chart showing the weights of toys. How much heavier is the toy elephant than the mouse? Was the tallest toy the heaviest?

	Solve number problems and practical problems involving these ideas. Example: $214 - 4 = 210$ $£2.36 + 20p = £2.56$	Subtract numbers with up to 3 digits by counting up (difference less than 100); work systematically to find possibilities and begin to explain mathematical patterns. Example: Use pairs of consecutive digits to make two palindromic numbers and subtract them ($767 - 676$); repeat for all possible subtractions and explain patterns.	Write and calculate mathematical statements for multiplication using multiplication tables, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods, for example using grid methods to multiply 2-digit numbers by 3, 4, 5, and 8. Example: $26 \times 3 \ 4 \times 16$	Solve problems with fractions that involve all of the above. Example: One pizza is divided into $\frac{1}{6}$s and another into $\frac{1}{4}$s. One child has 3 slices from the first pizza and another has 2 slices from the second pizza. Is this fair, or does one child get more pizza? Which child?	Measure the perimeter of simple 2D shapes. Example: $9 \text{ cm} + 1 \text{ cm} + 2 \text{ cm} + 2 \text{ cm} + 5 \text{ cm} + 2 \text{ cm} + 2 \text{ cm} + 1 \text{ cm} = 24 \text{ cm}$ $2 \text{ cm} + 7 \text{ cm} + 2 \text{ cm} + 3 \text{ cm} + 1 \text{ cm} + 2 \text{ cm} + 1 \text{ cm} + 2 \text{ cm} = 20 \text{ cm}$		
		Estimate the answer to a calculation and use inverse operations to check answers (use addition to check subtraction). Example: $£10 - £6.75 = £3.25$; $£6.75 + £3.25 = £10$ $£10 - £4.69 = £5.31$; $£4.69 + £5.31 = £10$	Begin to make generalisations and solve problems, including missing number problems and word problems, involving 2-digit by 1-digit multiplication or division. Example: Children use the digits 2, 5 and 8 to create all the possible combinations of $\square \times \square$. They estimate the answers, use the grid method to work them out, note which combination gave the largest and smallest answers, and order all the combinations from smallest to largest product.	Recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10. Example: $\frac{1}{10}$ of 240 = 24 $30 \div 10 = 3$	Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight. Example: 7:27 am = twenty-seven minutes past seven in the morning How many times do you think you could write your name in a minute?		
		Use number facts to add and subtract numbers mentally, including a 3-digit number and 1s, a 3-digit number and 10s, and a 3-digit number and 100s, and explain their methods. Example: $532 - 5$ $356 + 60$ $785 - 300$	Solve positive integer scaling problems and correspondence problems in which n objects are connected to m objects. Example: Find the height of a giant 8 times taller than me.		Tell and write the time from 12-hour and 24-hour clocks. Example: $12:00 = \text{noon}$ $15:00 = 3 \text{ pm}$		

		Choose an appropriate strategy (mental or written) to solve addition of 3-digit numbers. Example: $351 + 100 + 204$ $356 + 278$	Write and calculate mathematical statements for division using the multiplication tables that they know, using mental and progressing to formal written methods, for example divide by 3, 4, 5, 8 with and without remainders (answers less than 20). Example: $26 \div 4$ $21 \div 5$				
		Add numbers with up to 3 digits using column addition and using reasoning and trial and improvement. Example: $426 + 173$ $127 + 842$ Children aim to find pairs of 3-digit numbers that add to 581.	Divide numbers just beyond the range of known table facts by subtracting 10 times the divisor. Example: $65 \div 5$ $42 \div 3$				
		Use reasoning skills to invent appropriate addition questions. Example: Write at least 5 pairs of additions where the difference between the first addition (of multiples of 10) and the second addition is 15.					

Term	Number and Place Value (NPV)	Addition and Subtraction (AS)	Multiplication and Division (MD)	Fractions, Decimals, Ratio and Percentages (FDRP)	Measures (MEA)	Geometry (GEO)	Statistics (STA)
Y4 Autumn	Recognise the place value of each digit in a 4-digit number (1000s, 100s, 10s, and 1s); order and compare numbers with up to 4 digits.	Know bonds to the next 100. Example: 54 + 46 653 + 47	Use the distributive law to multiply 2-digit numbers by a 1-digit number using formal written layout or mental methods. Example: 4×65 94×7	Find unit fractions of amounts. Example: $\frac{1}{4}$ of 24 $\frac{1}{8}$ of 32	Read, write and convert time between analogue and digital 12-hour clocks. Example: 6:05 = five minutes past six		Use mathematical reasoning to answer a question by collecting, displaying and interpreting data in a frequency table and bar chart, choosing an appropriate scale.
	Begin to place 4-digit numbers on number lines and round these to the nearest 10, 100 or 1000. Example: 4782 rounds to 4780, 4800, 5000	Use place value and number facts to add numbers with up to 4 digits, including fluency in adding any pair of 2-digit numbers. Example: $147 + 36$ $4286 + 199$	Use table facts and commutativity to perform multiplications involving multiples of 10. Example: 40×6 300×8	Begin to recognise and show families of common equivalent fractions.	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. Example: 1 minute 23 seconds = 83 seconds 231 minutes = 3 hours 51 minutes		
		Use counting up to subtract numbers with up to 3 digits crossing one multiple of 100. Example: $134 - 88$ $809 - 742$	Recall multiplication and division facts for multiplication tables, for 2, 5, 10, 3, 4, 8, 6 and 9 times tables.	Count in fractions, expressing each fraction in its simplest form.	Read scales to the nearest 100 g and draw a bar chart where one step represents 100.		
		Choose a method to subtract that is appropriate to the numbers in the calculation. Example: $456 - 199$ $134 - 88$ $134 - 6$	Use the distributive law to multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout (grid). Example: 3×34 7×145	Recognise and write decimal and fraction equivalents of tenths and a $\frac{1}{2}$.	Solve simple measures problems and convert between different units of measure – mm, cm, m; ml, l; g, kg. Example: $0.7 \text{ L} = \square \text{ ml}$ Write 1250 g in kilograms.		
		Solve addition and subtraction problems for numbers with up to 3-digits, including in contexts of word problems, deciding which written or mental operations and methods to use and why. Example:	Double and halve 3-digit numbers using partitioning and be able to describe, explain and predict patterns. Example: Halve 684. Write a doubles chain past 1000 and write about the pattern in the units digits.	Find the effect of dividing a 1-digit or 2-digit number by 10, and recognise that the first place after the decimal point is a tenth. Example: $5 \div 10 = 5/10 = 0.5$ $36 \div 10 = 36/10 = 3.6$			

		354 + 205 402 – 378					
		Use column addition to add 3-digit numbers; begin to add 4-digit numbers.	Begin to use place value and known and derived facts to divide numbers above tables facts. Example: 56 ÷ 4 176 ÷ 8				
		Use expanded column subtraction to subtract 3-digit numbers. Example: 376 – 263 838 – 556	Work systematically and predict patterns.				
		Use logical thinking to look for patterns in numbers.					
Y4 Spring	Count on and back in multiples of 6, 7, 9, 25 and 1000 and work systematically, predicting and explaining patterns.	Add and subtract 1s, 10s or 100s from numbers with up to 4 digits crossing multiples of 10, 100, or 1000. Example: 8417 + 66 3460 – 403	Recognise and use factor pairs and commutativity in mental calculations, to solve multiplications and divisions involving 2-digit and 3-digit multiples of 10. Example: 4 × 60 240 ÷ 6	Recognise and show families of common equivalent fractions and begin to compare fractions with non-like denominators.	Begin to convert between metric units of length, e.g. kilometres to metres, and solve problems involving different measures. Example: Fred has run 645 m of a 2 km race when he slips. How far does he have to go?	Identify acute and obtuse angles and compare and order angles up to 2 right angles by size.	
	Place 4-digit numbers on number lines, recognise the place value of each digit and round these to the nearest 10, 100 or 1000. Example: 7236 rounds to 7240, 7200, 7000	Use counting up subtraction to subtract 3-digit numbers and 4-digit numbers from multiples of 1000 and describe and explain patterns in digit sums. Example: 1000 – 347 4000 – 2693	Recall multiplication and division facts for multiplication tables, for 2, 3, 4, 5, 6, 7, 8, 9 and 10 times tables.	Begin to multiply and divide numbers by 10 and 100, understanding that this involves a shift of the digits on a place-value grid and identify the value of the digits in the answer as ones, tenths and hundredths.	Estimate, compare and calculate different measures, including solving simple money problems involving decimals to 2 decimal places. Example: The Smiths have £30 to buy games. They buy 6 jigsaws, each costing £4.39. Roughly how much would that be?	Draw shapes with given properties and explain reasoning. Example: Acute/obtuse angles Parallel sides	

	Explain and justify reasoning about what happens when numbers are multiplied and divided by 10. Example: Explain rules and patterns when dividing 2-digit numbers and 3-digit multiples of 10×10.	Use compact column subtraction to subtract 3-digit numbers. Example: $642 - 326$ $951 - 647$	Use doubling and halving to multiply and divide by 4, and to multiply by 5 and 20. Example: $636 \div 4$ 246×20	Solve simple problems involving fractions and find non-unit fractions of amounts where the answer is a whole number. Example: 3 of 48 4 of 30	Solve simple problems involving finding the perimeter of rectilinear shapes. Example: $8 + 4 + 8 + 4 = 24$ cm or double 12 = 24 cm $9 + 11 + 9 + 11 = 40$ cm or 18 cm + 22 cm = 40 cm	Identify lines of symmetry in 2D shapes presented in different orientations.	
	Add amounts of money mentally using place value and number facts.	Read and interpret addition word problems.	Multiply 2-digit and 3-digit numbers by a 1-digit number using a formal written layout (vertical algorithm – ladder). Example: 3×154 6×257	Compare two 1-place decimals, place on a line and round decimals with 1 decimal place to the nearest whole number. Example: $3.05 < 3.45 < 3.54 < 3.7$ 5.9 rounds to 6	Read, write and convert time between analogue and digital 12- and 24-hour clocks. Example: 1 o'clock = 13:00 3:45 pm = 15:45 = quarter to 4 in the afternoon	Complete a simple symmetric figure with respect to a specific line of symmetry.	
		Add 2 numbers with up to 4 digits using the formal written method of columnar addition, including answers that are greater than 10 000. Example: $3416 + 756$ $2370 + 7630$	Notice patterns; make and test predictions. Example: 234×9 456×9 Predict and explain the patterns.				
		Use column addition to add several 2-digit numbers. Example: $24 + 76 + 58$	Use place value and known and derived facts to divide numbers above table facts.				
		Investigate and reason methodically and systematically.					
		Add and subtract numbers with up to 4 digits using formal columnar addition and subtraction methods. Example: $603 + 526$ $4001 - 3675$					
		Identify the calculation(s) needed to solve a word problem. Example: Amy wins 4214 points in a game. She finds 6 trophies worth 250 points each. What is her new score?					

		Solve addition and subtraction 2-step problems in context. Example: 345 people were on a ride. If 128 get off and 143 get on, how many are on the ride now?					
Y4 Summer	Find 1, 10, 100 and 1000 more or less than a given number. Example: 5720 – 1000 8065 + 10	Confidently add numbers with up to 4 digits using place value and number facts, including fluency in adding any pairs of 2-digit numbers. Example: 38 + 45 2649 + 741	Use place value and known and derived facts to multiply 2-digit and 3-digit numbers by a 1-digit number (including multiplying by 0 and 1) and to multiply three 1-digit numbers. Example: 199 × 3 2 × 3 × 5	Use equivalent fractions to simplify and compare fractions with non-like denominators. Example: $\frac{4}{6} = \frac{2}{3}$ $\frac{8}{10} = \frac{4}{5}$	Convert between different metric units of measure, e.g. km to m; solve problems involving different measures. Example: True or false? Five 200 g weights are the same as 1 kg.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
	Count backwards through zero to include negative numbers; use knowledge of factors and reasoning to solve problems. Example: You have £30 in your bank and then spend £50 on your bank card. How much money is left in your bank?	When appropriate, use counting up to subtract numbers with up to 4 digits. Example: 2001 – 1865 4010 – 2968	Use a written method to multiply amounts of money by 1-digit numbers. Example: 4 × £4.67 7 × £3.27	Find non-unit fractions of amounts and solve problems involving harder fractions to calculate quantities. Example: $\frac{4}{5}$ of 85 $\frac{7}{9}$ of 18	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Example: 6 + 6 + 6 + 6 = 24 cm / 4 × 6 = 24 cm	Describe positions on a 2D grid as coordinates in the first quadrant.	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.
	Order and compare numbers beyond 1000. Example: 3421 > 2167 4892 < 9173	Use counting up and subtraction to find change or solve money problems. Example: £10 – £4.25 £38.54 – £15.75	Estimate and use inverse operations to check answer to a multiplication or division calculation. Example: 76 ÷ 4 = □, □ × 4 = 76 78 ÷ 3 = □, □ × 3 = 78	Recognise that tenths and hundredths arise when dividing by 10 and 100; multiply decimal numbers by 10 and 100, understanding that this involves a shift of the digits on a place-value grid. Example: 213 ÷ 100 = 2.13 12.3 ÷ 10 = 2.13	Solve problems involving money. Example: $\frac{4}{5}$ of £30 6 × £6.05	Describe movements between positions as translations of a unit left/right and up/down.	
	Identify, represent and estimate numbers using different representations.	Add numbers with up to 4 digits using the formal written method of columnar addition. Example: 3861 + 4513	Multiply 2- and 3-digit numbers by a 1-digit number using formal written layout where appropriate. Example: 294 × 6 648 × 7	Count up and down in tenths and hundredths.	Find the area of rectilinear shapes.	Plot specified points and draw sides to complete a given polygon.	

	Solve number and practical problems with increasingly large positive numbers. Example: It is approximately 4591 km from Istanbul to Delhi, and 1770 km from Delhi to Chennai. Abdul travels from Istanbul to Chennai, via Delhi. How far does he travel altogether?	Subtract numbers with up to 4 digits using the formal written method of expanded or compact columnar subtraction. Example: 7842 – 3498 6347 – 5192	Multiply 2-digit numbers by 2-digit numbers using the distributive law (grid method).	Compare numbers with up to 2 decimal places, identify the value of the digits as ones, tenths and hundredths, and round decimal numbers to the nearest whole.			
	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.	Use inverse operations to check answers to a calculation.	Use place value and known and derived facts to divide larger numbers (answers up to 50) including dividing by 1. Example: 83 ÷ 3 432 ÷ 8	Solve simple measure and money problems using fractions and decimals to 2 decimal places. Example: One shampoo bottle contains 400 ml and another contains 0.3 L. Which holds more? By how much?			
		Use logical reasoning to create additions of 4-digit numbers to a given total. Example: Write 4-digit + 4-digit column additions that equal 10 000.	Use doubling and halving to multiply and divide mentally. Example: 45 × 6 432 ÷ 8	Add and subtract 0.1 and 0.01. Example: 6.9 + 0.1 9.17 – 0.01			
			Recall multiplication and division facts for multiplication tables up to 12 × 12 and describe patterns in the tables.	Recognise and write decimal and fraction equivalents of tenths, hundredths, $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$. Example: $\frac{3}{4} = 0.75$ $1.3 = 1 \frac{3}{10}$			
			Solve problems involving multiplying and adding, including integer scaling and correspondence. Example: The area is of a rectangle is 24 cm². Enlarge the rectangle by a factor of 2 and find its new area.	Write additions of fractions with different denominators with a total of 1. Example: $\frac{1}{2} + \frac{3}{6}$ $\frac{1}{4} + \frac{4}{8} + \frac{2}{8}$			

			Sustain a line of enquiry; make and test a hypothesis. Example: Multiply 356 by 3 (1068); find the digital root of 1068 (6). The digital root of 356 is 5. Multiply 5 by 3 (15); find the digital root of 15 (6). Notice a pattern in the digital roots.	Add and subtract fractions with the same denominator, including totals greater than 1. Example: $\frac{3}{8} + \frac{2}{8}$ $\frac{3}{5} + \frac{4}{5}$			
			Look for patterns and write rules. Example: $11 \times 34 = 374$, $37 = 34 + 3$ $11 \times 47 = 517$, $51 = 47 + 4$ (The original 2-digit number plus the 10s digit of that number.)				

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Y5 Autumn	Read and write numbers to at least 100 000.	Sustain a line of enquiry; make and test a hypothesis.	Use mental strategies to multiply and divide by 4, 9, 20 and 25. Example: $450 \div 9$ 66×25	Add and subtract 0.1 to/from a number with 1 or 2 decimal places. Example: $0.4 + 0.1$ $34.5 - 0.1$	Convert between different units of metric measure (length: mm/cm/m/km). Example: $113 \text{ mm} = 11.3 \text{ cm}$ $127 \text{ cm} = 1.27 \text{ m}$	Use a ruler to measure lines in centimetres and millimetres.	Complete, read and interpret information in timetables using 24-hour times. Example: Looking at a train timetable: It is 07:53 at St Pancras. How soon can you get to Paris?
	Determine the value of each digit in numbers to at least 100 000 and use to solve place-value additions and subtractions. Example: $43\,715 + 10$ $19\,473 - 6000$	Add whole numbers with 4 digits, including using the formal written method of columnar addition (answers > 10 000). Example: $8316 + 5477$	Solve problems involving multiplication and division using knowledge of factors , doubles and halves, and times-tables.	Compare and order fractions with the same denominator. Example: $\frac{7}{8} > \frac{5}{8}$ $\frac{3}{10} < \frac{7}{10}$	Understand the 24-hour clock, convert times, calculate time intervals and use timetables. Example: $13:00 = 1 \text{ pm}$ How long between 06:17 and 08:28?	Know angles are measured in degrees.	
	Order and compare numbers to at least 100 000. Example: $24\,987 < 25\,199 < 25\,857 < 26\,008$	Use place value and number facts to add and subtract 2-, 3- and 4-digit numbers. Example: $147 + 68$ $3942 - 801$	Choose a mental or a written method to solve problems, including word problems, involving multiplication (including 2-/3-digit $\times$ 1-digit; 2-digit $\times$ 2-digit). Example: 150×5 34×28	Identify, name and write equivalent fractions, including simplest forms, of a given fraction, represented visually, including tenths and hundredths. Example: $\frac{4}{10} = \frac{2}{5}$ $\frac{10}{100} = \frac{1}{100}$	Begin to calculate the perimeter of rectilinear shapes in cm.	Estimate and compare acute, obtuse and reflex angles. Example: $0^\circ < \text{Acute} < 90^\circ$, $90^\circ < \text{Obtuse} < 180^\circ$, $180^\circ < \text{Reflex} < 360^\circ$	
	Count forward or backwards in steps of powers of 10 for any number up to 100 000. Example: 1205, 1305, 1405, ... 7745, 7645, 7545, ...	Use inverse operations to create new calculations or check answers.	Choose a mental or written method to solve problems, including word problems, involving division (including 2-/3-digit $\div$ 1-digit), and spot and explain patterns and relationships. Example: Divide multiples of 100 (100 to 900) by numbers 3 to 9. Explain the pattern. 10 people fit in a bus. How many buses do 740 people need?	Recognise and use tenths and hundredths and relate them to decimal equivalents. Example: $\frac{3}{5} = \frac{6}{10} = 0.6$ $\frac{15}{100} = 0.15$		Draw given angles, and measure them in degrees (°) using a protractor.	

	Round any number up to 100 000 to the nearest 10, 100 and 1000. Example: 34 782 rounds to 34 780, 34 800 and 35 000	Subtract whole numbers with 4 digits, including using the formal written method of columnar subtraction. Example: 4265 – 2931	Recognise which numbers are divisible by 2, 3, 4, 5, 9 and 10.	Read, write, order and compare numbers with up to 2 decimal places. Example: 3.3 < 3.81 8.76 > 6.78		Identify angles at a point on a straight line and half a turn (total 180°); use mathematical reasoning to explain findings.	
		Begin to add and subtract numbers mentally with increasingly large numbers. Example: 3568 + 4300 5482 – 402	Use mathematical reasoning to work out a function; use the inverse operation to find answers. Example: 2370 □□ = 237 □ × 5 = 45 or 45 ÷ 5 = □			Identify 90° and other multiples of 90°.	
		Use mathematical reasoning to work out a function (single operation +/–). Example: 3839 □□ = 3889 23.5 □□ = 3.5	Use multiplication facts and place value to multiply and divide multiples of 10 and 100, including answers with 1 and 2 decimal places. Example: 280 ÷ 70 0.12 × 10				
Y5 Spring	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	Add whole numbers and 1-place decimals using appropriate mental strategies. Example: 3568 + 4300 5.6 + 3.9	Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers. Example: 12 = 2 × 6; 3 × 4; 12 × 1 36 = 6 × 6; 3 × 12; 9 × 4; 18 × 2; 36 × 1 = 1, 2, 3, 4, 6 and 12	Add and subtract 0.1 or 0.01 to/from numbers with up to 2 decimal places. Example: 13.85 + 0.1 15.39 – 0.01	Convert between different units of metric measure (km / m; cm / m; cm / mm; g / kg; L / ml). Example: 100 g = 0.1 kg 1050 ml = 1.05 litres	Know that the angles in a triangle add up to 180° and devise and test rules to find a missing angle. Example: 180° – 20° – 65° = □	Sort using a Venn diagram or a table.
	Read and write numbers to at least 1 000 000.	Add 1- and 2-place decimal numbers (including money) choosing and using an appropriate method (including columnar addition and mental methods). Example: 58.76 + 32.84 45.62 + 7.82	Multiply and divide numbers mentally drawing upon known facts. Example: 816 ÷ 9 70 × 8	Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place. Example: 8.47 rounds to 8.5, 8 6.78 rounds to 6.8, 7	Add 2-digit numbers with 2-place decimals, including money, using column addition. Example: £51.72 £43.66 +	Describe the properties of triangles (including scalene, right-angled, isosceles and equilateral). Example: Equilateral: All sides and all angles are equal (60°).	Begin to read and interpret line graphs, including reading intermediate values.

	Order and compare numbers to at least 1 000 000. Example: 357886, 771352, 836412 Say a number between 650 000 and 675 000.	Count up to solve 4-digit minus 4-digit subtractions from near multiples of 1000, where column subtraction is awkward; use column subtraction where appropriate. Example: 8010 – 3788 9013 – 4867	Use a written method to multiply pairs of 2-digit numbers. Example: 24×67 78×96	Solve problems involving numbers with up to 3 decimal places, including in the context of measures. Example: Record your heights in m. Standing on top of each other, how tall would you be?	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Example: 12 inches is about 30 cm.	Use mathematical reasoning to identify properties of different polygons, including equal sides and angles and explain findings. Example: Draw polygons using dots and marked radii around circles and calculating angles between 2 radii.	
	Determine the value of each digit in numbers to at least 1 000 000 and use to solve place value additions and subtractions. Example: $940\,652 - 20\,020$ $732\,546 + 199\,999$	Add and subtract numbers mentally with increasingly large numbers. Example: $3465 + 299$ $6000 - 3867$	Multiply and divide numbers by 10 and 100, including decimal numbers and those leading to decimal answers.	Find unit and non-unit fractions of 2 and 3 digit numbers.		Identify and define a polygon; distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Example: Regular pentagon: 5 equal sides; $5\,72^\circ$ angles	
	Order and compare 6-digit numbers and place on a number line.	Solve addition 1- step and multi-step problems using mental addition. Example: An adult's ticket costs £3.80 more than a child's, which costs £14.60. How much is the adult's ticket?	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers; establish whether a number up to 100 is prime and recall prime numbers up to 19.	Compare and order fractions, including mixed numbers, whose denominators are all multiples of the same number. Example: $4\frac{1}{4}$, $4\frac{3}{8}$, $4\frac{7}{8}$ $3\frac{7}{10} > 3\frac{1}{2}$		Identify and define a polygon; distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Example: Regular pentagon: 5 equal sides; $5\,72^\circ$ angles	
	Find square numbers and square roots; find a pattern; write and test a rule. Example: Describe the difference between consecutive square numbers.	Use counting on and bonds to 100 to add to any 2-place decimal to find the next whole number. Example: $5.71 + \square = 6$ $7.56 + \square = \square$	Recognise and use square numbers and their notation (2).	Place fractions on a number line and count in steps of a given fraction, using equivalence. Example: $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, ... $= \frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, ...			
		Subtract amounts of money and other 1- and 2-place decimal numbers in the context of measures.	Choose an appropriate method to divide one number by another, including for larger numbers requiring a written procedure.	Recognise mixed numbers and improper fractions and convert from one form to the other; look for patterns and write rules. Example: $\frac{20}{7} = 2\frac{6}{7}$ Compare numerators. Are they both odd, both even or one of each?			

		Investigate patterns in addition using knowledge of bonds and a systematic approach. Example: $\square \cdot \square \square + \square \cdot \square \square = 5 \cdot 55$ (knowing: the digits in the hundredths column add to >10; there is a 3 in the tenths column)	Choose an appropriate method to multiply numbers, including for those larger numbers requiring written procedure.	Multiply proper fractions by whole numbers in a practical or real-life context.			
		Use columnar addition to add more than 2 numbers with up to 4 digits. Example: $4921 + 373 + 582$ $8364 + 918 + 1008$	Use short division to divide 3-digit numbers by 1-digit numbers (including those that leave a remainder). Example: $645 \div 3$ $379 \div 4$				
		Identify patterns and make predictions. Example: Reverse 1919 and subtract the smaller $(9191 - 1919 = 7272)$. Reverse 7272 and subtract the smaller (= 4545). Repeat until a 3-digit number (909). Choose a different starting number; identify the same pattern.	Use short multiplication to multiply 3-digit numbers by 1-digit numbers, rounding to estimate answers. Example: 4×261 427×3				
Y5 Summer	Interpret negative numbers in context; count forwards and backwards with positive and negative whole numbers, including through 0; solve problems in the context of temperature. Example: $-7 + 22$ What is the decrease in temperature between -8° and -19°?	Use rounding to check answers to calculations and determine, in the context of a problem, level of accuracy; use addition to check subtraction.	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Example: $25 \cdot 842 \times 1000$ $3872 \div 100$	Add and subtract 0.1, 0.01 or 0.001 to/from numbers with up to three decimal places.	Measure and calculate the perimeter of composite rectilinear shapes in cm and m. Example: Divide 'L' and 'T' shapes into rectangles to find their area and perimeter.	Draw given angles and straight lines to given lengths to create a triangle.	Draw line graphs; solve comparison, sum and difference problems using information presented in a line graph. Example: Using a graph of temperature at different altitudes: What is the temperature at 11 km if it is 26° at sea level?

	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. Example: 385 922: 385 920, 385 900, 386 000, 390 000 and 400 000	Subtract 2-place decimal numbers (including money) using counting up or mental methods. Example: £14.75 – £3.49 £26.80 – £13.20	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. Example: A rectangle has a 24-square area and 2 6-square sides. How long are the other sides?	Write equivalent fractions and use equivalence to reduce fractions to their simplest form, including writing improper fractions as mixed numbers.	Solve problems involving time, telling the time using 12- and 24-hour clocks, and converting between units of time. Example: A train leaves London at 06:34 and arrives in Paris at 09:23. How long did the journey take?	Identify 3D shapes, including cubes and other cuboids, from 2D representations.	Estimate intermediate values on line graphs. Example: Using a graph of temperature: Give intermediate temperatures to the nearest degree.
	Solve number problems and practical problems that involve all of the above.	Solve addition and subtraction problems, including multi-step and word problems; decide which operations and methods to use and why. Example: Parveen spent £4.25 on a ticket, £2.50 on popcorn and £1.20 on cola. How much change did she get from £10?	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. Example: A rectangle has 2 11m sides and a 30m perimeter. What is its area?	Compare and order fractions whose denominators are all multiples of the same number. Example: $\frac{5}{8} > \frac{1}{2}$ $\frac{5}{6} > \frac{2}{3}$	Calculate and compare the area of rectangles (including squares), including using standard units, cm² and m², and pursue a line of enquiry. Example: Find as many squares and rectangles as possible where the area (cm²) equals the perimeter (cm).	Recognise and use the properties of rectangles to deduce related facts and find missing lengths and angles. Example: Draw a rectangle 6 cm × 12 cm and its diagonals. What are the angles where they cross?	
	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Example: CMXCIX = 999 MMXII = 2012	Add whole numbers with more than 4 digits, including using formal written methods such as columnar addition. Example: 34 261 + 23 585 12 843 + 36 512	Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context. Example: 5296 ÷ 4 3256 ÷ 3	Read, write, order and compare numbers with up to 3 decimal places. Example: 3.218 < 4.339 0.065 < 0.173	Estimate the area of irregular shapes. Example: Find the area of leaves by drawing round them on squared paper, calculating the area of the contained rectangle and counting the squares around the edges.	Identify, describe and represent the position of a shape following a reflection or translation using the appropriate language; know that the shape has not changed; describe the relationship between the shapes' co-ordinates. Example: A rectangle with corner points (1, 2), (3, 2), (1, 5) and (3, 5) is moved five spaces along the x axis and three spaces up the y axis. What are the new corner points?	
		Subtract whole numbers with more than 4 digits, including using formal written methods such as columnar subtraction. Example: 73 008 – 61 325 45 306 – 27 123	Use short multiplication to multiply 4-digit numbers by 1-digit numbers, rounding to estimate answers. Example: 3 × 5243 6 × 4054	Read and write decimal numbers as fractions. Example: 0.71 = $\frac{71}{100}$	Estimate and begin to find volume and capacity. Example: Build a cube/cuboid with cubes, noting its base area and number of layers; then estimate its volume by the number of cubes before drawing and labelling it.	Read and mark coordinates in the first two quadrants and plot and join coordinates to create a polygon.	

			Multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers. Example: 17×348 18×426	Solve problems involving numbers with up to 3 decimal places. Example: Guess the possible weights of the mystery parcel: it is a 3-place decimal between 0 kg and 1kg with at least one 5.	Use all 4 operations to solve problems involving measure using decimal notation, including scaling. Example: Children make a scale model of a room (4.2 m $\times$ 3.3 m $\times$ 2.4 m) and choose furniture to scale, dividing measurements by 10.		
			Identify factors of 2-digit numbers, pursue a line of enquiry and solve problems involving multiplication using their knowledge of factors. Example: 20×85: double 85, then multiply by 10 (2 and 10 are factors of 20).	Multiply proper fractions by whole numbers, supported by materials and diagrams, spot patterns and make generalisations. Example: $1 \times \frac{2}{3}$, $2 \times \frac{3}{4}$, $3 \times \frac{4}{5}$, $4 \times \frac{5}{6}$, ...			
			Recognise and use cube numbers and their notation (3). Example: $4^3 = 4 \times 4 \times 4 = 64$ $5^3 = 5 \times 5 \times 5 = 125$	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Example: 0.865 = 8 tenths, 6 hundredths and 5 thousandths			
			Solve problems (including word problems and problems about measure) involving multiplication and division, including scaling by simple fractions and problems involving simple rates. Example: My socks shrank to $\frac{1}{3}$ of their normal size. They used to be 18 cm long. How long are they now? A roofer can lay 40 tiles an hour. How many can he lay in 36 hours?	Add and subtract fractions with the same denominator and denominators that are multiples of the same whole number, including answers > 1. Example: $\frac{7}{8} + \frac{5}{8}$ $\frac{7}{10} - \frac{2}{5}$			

			Multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.	Recognise the per cent symbol (%) and understand that it relates to ‘number of parts per hundred’; write percentages as a fraction with denominator 100 and as a decimal. Example: $15\% = \frac{15}{100} = 0.15$ $30\% = \frac{30}{100} = 0.3$			
			Use multiplication to check division.	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 fractions with a denominator of a multiple of 10 or 25. Example: $0.5 = \frac{1}{2} = 50\%$ $\frac{1}{4}$ of 28 children like swimming. What is this as a percentage? How many children is this?			

Term	Number and Place Value (NPV)	Addition and Subtraction (AS)	Multiplication and Division (MD)	Fractions, Decimals, Ratio and Percentages (FDRP)	Measures (MEA)	Geometry (GEO)	Statistics (STA)	Algebra (ALG)
Y6 Autumn	Read, write, order and compare numbers up to 1 000 000 and determine the value of each digit. Example: 405 297 > 450 279 570 523 > 507 203 909 250 < 990 250	Choose and use an appropriate method to add whole numbers with up to 5 digits. Example: 86 342 + 75 218 34 608 + 2021 23 509 + 48 253	Multiply multi-digit numbers up to 4 digits by numbers between 10 and 40 using the formal written method of long multiplication. Example: 6537×12 18×2035 1748×39	Convert decimals (up to 3 places) to fractions and vice versa using thousandths, hundredths and tenths. Example: $12.87 = 1 \frac{87}{100}$ $0.078 = 7 \frac{8}{1000}$ $\frac{54}{100} = 0.54$	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate. Example: 4000 ml = 4 L 0.36 m = 36 cm 450 g = 0.45 kg	Recognise, describe and build simple 3D shapes, including making nets. Example: Cube: 6 faces, 12 edges, 8 vertices, faces are squares Cylinder: 3 faces, 2 edges, 0 vertices, faces are two circles and a rectangle		Use letters to represent missing numbers in number sentences. Example: $14 - b = 9$. What is the value of b? $c + c = 8$. What is the value of c?
	Use negative numbers in context, and calculate intervals across zero and give generalisations to describe what happens when adding and subtracting with positive and negative numbers. Example: What is the difference between -3 and 2? Which is higher, -16 or -23?	Choose and use an appropriate mental or written method, including column addition and subtraction, to add and subtract decimal numbers with 1, 2 or 3 decimal places, including in the context of measures and money. Example: $63.25 + 3.75$ $54.2 + 6.9$ $7.92 + 16.35$	Use short multiplication to multiply numbers with up to 4 digits, including amounts of money, by 1-digit numbers and solve word problems involving multiplication including two-step problems and finding change. Example: $6 \times \pounds 23.45$ 2042×4 5×1317	Identify the value of each digit in numbers with up to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers to up to 3 decimal places; use this knowledge to compare and order numbers, and round numbers, with up to 3 decimal places. Example: 3.924 has nine tenths, two hundredths, four thousandths $4.325 \text{ kg} = 4325 \text{ g}$ $4.584 < 4.587$	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places. Example: 1991 m = 1991 km 650 ml = 0.65 L 0.073 kg = 73 g			Find pairs of numbers that satisfy an equation with two unknowns. Example: $a + b + 32 = 39$. Work out the possible pairs of numbers that a and b could be. $c \times d = c + d + 5$. Work out the possible pairs of numbers that c and d could be. $j \times k \div 2 = j + k$. Work out the possible pairs of numbers that j and k could be.
		Use knowledge of the order of operations to carry out calculations involving the four operations. Example: $3 \times (117 - 95)$ $45 - d = 21$. What is d?	Use knowledge of the order of operations to carry out calculations involving the four operations. Example: $3 \times (117 - 95)$ $12 \times k = 96$. What is k?	Compare and order fractions, including fractions > 1. Example: Order from smallest to largest: $\frac{7}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ Which is greater, $\frac{4}{9}$ or $\frac{2}{3}$? $\frac{4}{7} < \frac{9}{14}$	Begin to convert between miles and kilometres. Example: 5 miles = 8 km 45 miles = 72 km 180 miles = 288 km			Enumerate possibilities of combinations of two variables. Example: $a + b + 19 = 28$ and $a \times b = 14$. Work out the possible pairs of numbers that a and b could be. $16 - m - n = 10$. Work out the possible pairs of numbers that m and n could be. $24 \div c = d + 1$. Work out the possible pairs of numbers that c and d could be.

		Use knowledge of the order of operations and brackets to carry out multi-step calculations involving addition, subtraction, multiplication and division. Example: $45 - 16 \div 4$ $24 \times 3 - 2$ $\pounds 100 - 3 \times \pounds 26$	Use knowledge of the order of operations and brackets to carry out multi-step calculations involving addition, subtraction, multiplication and division. Example: $45 - 16 \div 4$ $24 \times 3 - 2$ $\pounds 100 - 3 \times \pounds 26$	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Example: $\frac{14}{4} = 3\frac{1}{2}$ $\frac{16}{6} = 2\frac{2}{3}$ $\frac{2}{4}, \frac{8}{16}, \frac{4}{8} = \frac{1}{2}$	Recognise that shapes with the same areas can have different perimeters and vice versa; begin to measure area and perimeter. Example: Perimeter = 7 cm + 5 cm + 7 cm + 5 cm = 24 cm Area = 7 cm $\times$ 5 cm = 35 cm² Perimeter = 6 cm + 6 cm + 6 cm + 6 cm = 24 cm Area = 6 cm $\times$ 6 cm = 36 cm² Perimeter = 9 cm + 4 cm + 9 cm + 4 cm = 26 cm Area = 9 cm $\times$ 4 cm = 36 cm²			
		Choose and use an appropriate method to subtract whole numbers with up to 5 digits. Example: 45 000 – 2695 36 628 – 1455 54 839 – 28 405	Divide numbers up to 4 digits by numbers up to 12 using the formal written method of short division, where appropriate interpret remainders according to the context and use reasoning to find a solution. Example: 5278 $\div$ 3 4887 $\div$ 6 9246 $\div$ 8	Use equivalence to add and subtract proper fractions and mixed numbers with related or unrelated denominators, and spot and test a rule. Example: $\frac{1}{2} + \frac{1}{3}$ $\frac{1}{6} + \frac{1}{5}$ $\frac{1}{2} - \frac{1}{4}$	Recognise when it is possible to use formulae for area and volume of shapes. Example: The formula for the area of a triangle is $A = \frac{1}{2} b \times h$ The formula for the area of a parallelogram is $A = b \times h$ The formula for the volume of a cuboid is $V = L \times W \times H$			
				Convert improper fractions to mixed numbers; convert mixed numbers to improper fractions. Example: $\frac{9}{2} = 4\frac{1}{2}$ $\frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$ $\frac{29}{12} = 2\frac{5}{12}$	Calculate the area of parallelograms and triangles. Example: Parallelogram: base = 15 cm, height = 8 cm. $A = 120 \text{ cm}^2$			
				Find non-unit fractions of amounts. Example: $\frac{2}{7}$ of 42 $\frac{2}{5}$ of 60 $\frac{5}{9}$ of 54	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 (for example, mm³ and km³). Example: 5 cm $\times$ 4 cm $\times$ 6 cm = 120			

					cm^3 $3 \text{ m} \times 10 \text{ m} \times 3 \text{ m} = 90 \text{ m}^3$			
				Express a remainder after division as a fraction, simplifying where possible. Example: $3523 \div 6 = 587 \text{ r } 1 = 587\frac{1}{6}$ $3525 \div 6 = 587 \text{ r } 3 = 587\frac{3}{6} \text{ or } 587\frac{1}{2}$				
				Use knowledge of equivalence between fractions and percentages and mental strategies to solve problems involving the calculation of percentages, including amounts of money and other measures. Example: $\frac{1}{4} \text{ m} = 0.75 \text{ m} = 75\% \text{ of a metre}$ $10\% \text{ of } £12 = \frac{1}{10} \text{ of } £12 = £1.20$				
				Solve problems involving the calculation of percentages and the use of percentages for comparison. Example: Davinder has been asked to reduce the price of CDs by 10%. How much will a CD costing £12 be reduced by?				

				Multiply fractions less than 1 by whole numbers. Example: $2 \times \frac{2}{3}$ $2 \times \frac{5}{6}$ $4 \times \frac{2}{5}$				
				Divide proper fractions by whole numbers. Example: $\frac{1}{3} \div 2$ $\frac{3}{5} \div 2$ $\frac{2}{3} \div 4$				
Y6 Spring	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. Example: 7 233 563 3 811 642 6 582 684	Choose and use an appropriate method, including column addition, to add whole numbers with up to 7 digits, and identify patterns in the number of steps required to generate palindromic numbers. Example: 2 347 256 + 1 238 584 462 308 + 5090 48 673 + 49 999	Use appropriate strategies to multiply and divide mentally, including by multiples of 10, 100 and 1000.	Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. Example: $1 \div 4 = \frac{1}{4} = 0.25$ $7 \div 10 = \frac{7}{10} = 0.7$ $3 \div 8 = \frac{3}{8} = 0.375$	Solve problems involving the calculation and conversion of units of measure. Example: 1 m 52 cm = 1520 mm 1000 kg = 1 tonne A reel holds 250 m of cable. How many reels are needed to make 1 km of cable?	Draw 2D shapes using given dimensions and angles. Example: Use a ruler and a protractor to draw a square with 7 cm sides. Draw a right-angled triangle with base 8 cm and height 6 cm and work out what the two missing angles are.	Interpret and construct pie charts and use these to solve problems. Example: Show the data where 50 people were asked their favourite classic children's book. Construct a pie chart and use it to find out which is the most popular book.	Use simple formulae. Example: $V = L \times W \times H$ What does $3n - 1$ mean?
	Round any whole number to a required degree of accuracy. Example: 3 497 992 rounded to the nearest million is 3 000 000. 9 646 101 rounded to the nearest million is 10 000 000.	Choose and use an appropriate method, including counting up, to add and subtract numbers with up to 2 decimal places, including in the context of measures and money and finding change, and use mathematical reasoning to investigate and solve problems. Example: 0.92 + 0.3 16.53 – 9.87 47.48 – 10.16	Perform mental calculations, including with mixed operations and large numbers. Example: $3 \times 26 - 15$ $c + 6 = 22$. What is c? $64 \div (4 + 4)$	Compare and order numbers with 1, 2 or 3 decimal places. Example: Write in order: 2.874, 2.78 and 2.87. Write numbers between 8.24 and 8.25. Which is further, 4.056 km or 4.506 km?	Convert between miles and kilometres. Example: 50 miles = 80 km 30 km = 18.75 miles 54 miles = 86.4 km	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	Interpret and construct line graphs and use these to solve problems. Example: Show a distance/time line graph showing a cyclist's journey from London to Brighton (54 miles). How long did it take this rider to cycle from London to Brighton? How long did it take to do the first 10 miles?	Continue, generate and describe linear number sequences. Example: $2 \times n + 1 = 3, 5, 7, 9, \dots$, 17, 19, 21 $3 \times n = 3, 6, 9, 12, \dots$, 24, 27, 30 $5 \times n + 1 = 6, 11, 16, 21, \dots$, 41, 46, 51

	Solve number and practical problems involving place value, comparison and rounding of integers. Example: $3500 + 6040$ $57\,905 - 4999$ $5\,583\,532$ rounded to the nearest million is 6 000 000.	Choose and use an appropriate method to subtract whole numbers with up to 7 digits. Example: $6\,728\,243 - 4\,372\,178$ $23\,000 - 5$ $1\,234\,000 - 1999$	Multiply multi-digit numbers up to 4 digits by a 1- or 2-digit whole number using the formal written method of long multiplication. Example: 6742×23 13×5278 22×4327	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts, and use mental strategies to solve problems involving simple percentages of amounts. Example: $\frac{1}{4} \text{ m} = 0.75 \text{ m} = 75\% \text{ of a metre}$ $10\% \text{ of } \pounds 12 = \frac{1}{10} \text{ of } \pounds 12 = \pounds 1.20$ $\frac{90}{250} = 90 \div 250 = 0.36$		Compare and classify geometric shapes based on their properties and sizes and use mathematical reasoning to find unknown angles in any triangles, quadrilaterals, and regular polygons. Example: Angles in a regular pentagon add up to 540° Angles in a regular hexagon add up to 720° Angles in a regular octagon add up to 1080°	Read and interpret a range of tables, graphs, pictograms and bar charts and answer questions relating to data displayed in these. Example: Show a bar chart of the heights of children in a class. How many children are between one point two metres and one point two nine metres?	
		Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Example: $472 \div 13$ ($30 \times 13 = 390$ and $40 \times 13 = 520$, so the answer will be between 30 and 40.) How many days might there be in 4936 hours? ($200 \times 24 = 4800$, so just over 200 days.)	Multiply pairs of unit fractions by reading the $\times$ sign as 'of'. Example: $\frac{1}{2} \times \frac{1}{5}$ $\frac{1}{4} \times \frac{1}{3}$ $\frac{1}{3} \times \frac{1}{7}$		Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Example: Angles on a straight line add up to 180°. The given angles are $70^\circ + 45^\circ = 115^\circ$. The missing angle is $180^\circ - 115^\circ = 65^\circ$.	Calculate and interpret the mean as an average. Example: Number of goals scored: 4, 7, 9, 5, 7, 8, 6, 2 Mean number of goals = $(4 + 7 + 9 + 5 + 7 + 8 + 6 + 2) \div 8 = 48 \div 8 = 6$	
	Solve problems involving addition, subtraction, multiplication and division. Example: $3 \times 26 - 15$ $(28 - 15) + 9$ $(6.4 - 4.2) \div 2$	Solve problems involving addition, subtraction, multiplication and division. Example: $3 \times 26 - 15$ $(28 - 15) + 9$ $(6.4 - 4.2) \div 2$	Multiply unit fractions by non-unit fractions, writing the answer in its simplest form. Example: $\frac{1}{2} \times \frac{2}{3}$ $\frac{1}{4} \times \frac{2}{3}$ $\frac{1}{3} \times \frac{3}{10}$		Describe positions on the full coordinate grid (all four quadrants). Example: Draw and join these points: A (1, -1), B (5, -1), C (1, -5). Reflect this triangle in the y-axis and write the new coordinates. What do you notice?			

			Use short multiplication to multiply 4-digit amounts of money by 1-digit numbers, and use estimation to check answers. Example: $£12.78 \times 4$ $£28.39 \times 6$ $£42.91 \times 9$	Use mental strategies to multiply 2-digit numbers with one decimal place by 1-digit whole numbers. Example: 4.2×6 4×6.8 5×3.7		Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. Example: Plot the points $(-6, 5)$, $(-4, 3)$, $(-2, 5)$, $(-2, -1)$, $(-4, -3)$, $(-6, -1)$, and join them. Add the same number to the x-coordinates to slide the hexagon across, or to the y-coordinates slide the shape up.		
			Use short division to divide 4-digit numbers by 1-digit numbers, including those which leave a remainder; spot patterns, make and test general rules, and check when an answer does not fit the predicted pattern. Example: $4532 \div 4$, $6382 \div 7$, $5247 \div 3$, $4783 \div 5$ Which will have an answer of less than 1000? Can you tell just by looking which one will definitely have remainder?	Multiply 1- and 2-digit numbers with up to 2 decimal places by whole numbers. Example: 0.07×6 4.26×3 $£48.76 \times 3$				
			Identify common factors, common multiples and prime numbers. Example: What are the common factors of 24 and 30? What is the smallest prime number?	Use written division methods in cases where the answer has up to 2 decimal places. Example: $1266 \div 8 = 158 \text{ r } 2 = 158\frac{8}{8}$ or $158\frac{1}{4} = 158.25$				

			Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, making an estimate using multiples of 10 or 100 of the divisor, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. Example: $4936 \div 24$ $1392 \div 32$ $4560 \div 23$	Solve problems which require answers to be rounded to specified degrees of accuracy. Example: $5242 \text{ eggs} = 218^5/_{12} \text{ boxes of } 24$. Make up 218 full boxes.				
				Solve problems involving simple ratios, i.e. unequal sharing and grouping using knowledge of fractions and multiples. Example: The ratio of blue tiles to orange tiles is 3:5. There are 16 tiles altogether. How many are orange?				
Y6 Summer	Solve number and practical problems that involve place value in large numbers, rounding, comparison and negative numbers. Example: $57\,905 - 4999$ 682 421 rounded to the nearest ten thousand is 680 000.	Consolidate adding and subtracting whole numbers with more than 4 digits, including using column addition and subtraction. Example: $53\,407 - 21\,999$ $39\,264 + 51\,703 + 9810$ $13\,872 - 11\,219$	Use appropriate strategies to multiply and divide mentally, including by multiples of 10, 100 and 1000, and solve scaling problems and problems involving rate. Example: 3.45×10 $243 \div 1000$ 86×5	Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places; round decimal numbers to the nearest tenth and whole number. Example: Which is greater, 7.845 or 7.425? $0.73 > 0.694$	Solve problems using standard units; read scales with accuracy. Example: A jug contains 450 ml of water. If 150 ml is added, how much water is in the jug now? $24 \text{ mm} + 29 \text{ mm} + 30 \text{ mm}$ $550 \text{ g} - 200 \text{ g}$	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons; find missing angles at a point, vertically opposite, or on a straight line. Example: Rectangles are quadrilaterals with two sets of equal sides and four right angles.	Calculate and interpret the mean as an average. Example: Lengths of caterpillars: 3.1 cm, 3.6 cm, 3.4 cm, 3.7 cm, 2.8 cm, 3.2 cm Mean length: $(3.1 + 3.6 + 3.4 + 3.7 + 2.8 + 3.2) \div 6 = 19.8 \div 6 = 3.3 \text{ cm}$	Express missing number problems algebraically and identify appropriate methods in order to solve them. Example: $34 + a = 79$. What is the value of a?

Use negative numbers in context, and calculate intervals across zero. Example: What is the difference in temperature between 6°C and -3°C?	Consolidate adding and subtracting numbers mentally with increasingly larger numbers. Example: 8429 + 34 966 982 384 – 600 10	Multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication and solve problems involving multiplication of money and measures. Example: 23 × 4238 3452 × 24	Add several decimal numbers using mental or written addition. Example: 6.39 + 2.14 + 8.7 + 23.4 38.65 + 7.89 + 3.25 7.5 + 3.9 + 2.8	Consolidate using 12 and 24-hour clocks; use counting up to calculate time intervals and count on and back in hours and minutes, bridging the hour, to find start and finish times; use timetables. Example: How many days and weeks are in two and a half months?	Consolidate classifying angles as acute, right, obtuse or reflex. Example: 23° = acute 90° = right angle 151° = obtuse 252° = reflex	Read, interpret and construct tables, bar charts, pictograms, pie charts and line graphs and use these to solve problems. Example: Show a bar chart of the heights of children in a class. How many children are between one point two metres and one point two nine metres?	Solve mathematical puzzles and justify their reasoning; spot patterns and make and test predictions. Example: Make as many different squares of four dominoes as you can where all four sides add up to the same total.
Round any whole number to a required degree of accuracy. Example: 38 905 rounded to the nearest thousand is 39 000.	Solve addition and subtraction multi-step problems in contexts, including money, deciding which operations and methods to use and why. Example: 23.47 – 20.3 6.39 + 2.14 + 8.7 + 23.4 £16.88 + £3.47	Multiply 2-, 3-, and 4-digit numbers by numbers up to 12 using short multiplication or another appropriate formal written method and solve word problems involving multiplication of money and measures. Example: 3 × £15.48 8365 × 8 34.8 × 6	Subtract decimal numbers using mental or written counting up or other mental strategies. Example: 23.47 – 20.3 43.81 – 17.9 35.25 – 18.63	Measure areas and perimeters; understand that area is a measurement of covering and is measured in square units and that perimeter is a length measured in mm, cm, m or km, for example; recognise that shapes with the same areas can have different perimeters and vice versa. Example: Length = 12 cm, width = 7 cm Perimeter = 2l + 2w. Double 12 is 24, double 7 is 14, 14 + 24 = 38 cm Area = l × w. 7 cm × 12 cm = 84 cm²	Find pairs of numbers that satisfy an equation with two unknowns and list in order the possibilities of combinations of two variables. Example: $a \times b = 24$. Work out the possible pairs of numbers that a and b could be.		
Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. Example: 4 372 195 < 7 816 039 7 652 771 < 7 653 672	Solve problems involving addition, subtraction, multiplication and division. Example: 3 × 26 – 15 (28 – 15) + 9 (6.4 – 4.2) ÷ 2	Solve problems involving addition, subtraction, multiplication and division. Example: 3 × 26 – 15 (6.4 – 4.2) ÷ 2	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Example: $\frac{14}{4} = 3\frac{1}{2}$ $\frac{16}{6} = 2\frac{2}{3}$ $\frac{2}{4}, \frac{8}{16}, \frac{4}{8} = \frac{1}{2}$	Calculate the area of rectangles, parallelograms and triangles. Example: Rectangle: Length = 6 cm, width = 7 cm. Area = 6 cm × 7 cm = 42 cm²	Identify, illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.		

		Use knowledge of the order of operations, including using brackets, to carry out calculations involving the four operations. Example: $3 \times (117 - 95)$ $(3 \times 4) + 16$ $45 - d = 21$. What is d?	Use knowledge of the order of operations, including using brackets, to carry out calculations involving the four operations. Example: $3 \times (117 - 95)$ $(3 \times 4) + 16$	Use knowledge of equivalence to compare and order fractions. Example: $\frac{2}{3} < \frac{5}{6}$ $\frac{7}{10} < \frac{4}{5}$ $\frac{3}{4}, \frac{9}{12}, \frac{30}{40} = \frac{3}{4}$	Calculate, estimate and compare volumes of cubes and cuboids. Example: $6 \text{ cm} \times 7 \text{ cm} \times 11 \text{ cm} = 462 \text{ cm}^3$ $12 \text{ cm} \times 8 \text{ cm} \times 3 \text{ cm} = 288 \text{ cm}^3$	Identify coordinates on the full coordinate grid; find missing coordinates for a vertex on a polygon or line. Example: A parallelogram has given points A: $(-5,3)$, B: $(2,3)$, C: $(-8,5)$. What are the coordinates of point D?		
		Perform mental calculations, including with mixed operations and large numbers, and use inverse operations to solve missing number problems. Example: $3 \times 26 - 15$ $c + 6 = 22$. What is c?	Perform mental calculations, including with mixed operations and large numbers, and use inverse operations to solve missing number problems. Example: $3 \times 26 - 15$ $c + 6 = 22$. What is c? $64 \div (4 + 4)$	Add and subtract fractions, with different denominators and mixed numbers, using the concept of equivalent fractions. Example: $\frac{1}{6} + \frac{1}{9}$ $\frac{5}{6} - \frac{3}{8}$ $\frac{2}{3} + \frac{3}{5}$				
			Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, making approximations, and interpret remainders as whole number remainders, fractions (simplifying where possible or writing the fractional part of the answer as a decimal where the equivalent is known) or by rounding as appropriate for the context. Example: $5242 \div 24$ $3759 \div 28$ $764 \div 16$	Solve problems involving the calculation of percentages and the use of percentages for comparison. Example: 20% of 360 A laptop costs £500. In a sale there is 30% off that price. How much will the laptop cost?				
			Know all multiplication and division facts up to 12×12; identify common factors, common multiples and prime numbers. Example: What are the common factors of 54, 72 and 48? What is the lowest	Divide proper fractions by whole numbers. Example: $34 \div 2$ $\frac{1}{4} \div 4$ $\frac{1}{6} \div 3$				

			common multiple of 2, 4 and 5?					
			Use a systematic approach to solve problems involving multiplication and division. Example: A playground is to be 1728 m². It needs to be rectangular in shape and one side must measure between 20 and 30 m. Each side must be a whole number of metres to make efficient use of the 1 m fence panels. Find the possible dimensions of the playground and then compare these to find the most costefficient size in terms of how many fence panels are needed.	Multiply simple pairs of proper fractions writing the answer in its simplest form; understand that if two numbers less than 1 are multiplied, the answer is smaller than either. Example: $\frac{3}{4} \times \frac{1}{2}$ $\frac{2}{3} \times \frac{1}{2}$ $\frac{2}{3} \times \frac{1}{4}$				
			Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division where appropriate, estimating answers and interpreting remainders according to the context, including money problems that require answers to be rounded. Example: $744 \div 6$ $8838 \div 6$ $\frac{1}{8}$ of £86.40	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Example: 8 apples cost £1. 16 apples cost £2. How many apples cost £1.50?				
				Associate a fraction with division to find an unknown number using inverse operations. Example: $\frac{88}{m} = 4$. What is m? $\frac{w}{3} = 12$. What is w?				

			Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Example: 360 cats are tested. 90 of the cats prefer wet cat food to dry cat food. 90 out of 360 = 90 360 = 1 4 = 25% of cats				
			Multiply decimals by whole numbers by multiplying by $\frac{10}{100}$ to make whole number calculations then dividing by $\frac{10}{100}$ to find the answer. Example: 23 $\times$ 46.2 16 $\times$ 39.2 24 $\times$ 5.26				
			Solve problems involving similar shapes where the scale factor is known or can be found. Example: A model car is $\frac{1}{5}$ the size of a real car. If the length of the model car is 86 cm, what is the length of the real car?				

Post SATs investigation

Use mathematical reasoning to investigate and solve problems involving doubling numbers into the millions.

Example:
 A wise man told an Emperor that he would like some rice. He asked the Emperor if he could have a grain of rice for the first square of a chessboard, then two grains of rice for the second square, then four grains of rice on the third square and to keep doubling for each square of the chessboard. How much rice is on the 9th square? How much is on the tenth square? How many grains of rice does the wise man get?

Understand Pythagoras’ theorem about the lengths of sides in a right-angled triangle and test the rule.

Example:
 Pythagoras’ theorem states that for any right-angled triangle, the square of the length of the longest side, c , is equal to the sum of the squares of the two shorter sides, a and b . ($a^2 + b^2 = c^2$). Draw a right-angled triangle and measure the lengths of the three sides. Then draw and cut out three squares, one of each length, to show that the area of the largest square equals the total area of the smaller two squares.