Maths

Intent

Our Maths curriculum is based around the National curriculum. The intent is that children will progressively develop independence in fluency, reasoning and problem solving. They will be able to demonstrate their understanding through oracy, calculation and diagrammatical representation. The children will have a sense of self as mathematician and how maths is applied in everyday contexts, the wider world and future career opportunities within STEM.

Rationale

Fluency - developing the knowledge to carry out calculation procedures, both mental and written as well as topic specific knowledge such as names or shapes or various statistical presentations

Reasoning - application of knowledge to explain why a problem/procedure/idea is correct or not and what steps are incorrect or missed. In addition, the ability to be able to explain the correct method/answer.

Problem solving - application of knowledge to find the correct calculation in order to answer the question.

Kingsway Community Trust

Math Curriculum

Year 1

Reasoning and place value skills

I can use specific mathematical vocabulary to explain methods, ideas and answers.
I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
I can prove or disprove a mathematical statement.
I can break down complex problems into smaller steps and record them logically.
I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
I can find the calculation within a presented problem (worded, diagram or concept).
I am able to use practical equipment to demonstrate my understanding.
I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
I can use a trial and error method to solve a problem

Mental maths objectives

I can count in ones to 100, fives to 60, twos to 24 and tens to 120 forwards and backwards from any given number.
I can double numbers to at least 10, e.g. 8 + 8
I can partition small numbers, e.g. 8 + 3 = 8 + 2 + 1
I can partition and combine tens and ones.
I can find number pairs with a total of 10, e.g. 3 + 7, or what to add to a single-digit number to make 10, e.g. 3 + □ = 10 (Moving on to 20 when secure)
I can partition: double and adjust, e.g. 5 + 6 = 5 + 5 + 1
I can add or subtract a pair of single-digit numbers, e.g. 4 + 5, 8 – 3
I can count in 2, 5's and 10s
I can recall addition and subtraction facts for all numbers to at least 10
I can count in 5's to 120, 2's to 50 and 10's to 200 forwards and backwards from any given number
I can partition 2 larger numbers eg. 18 + 5 = 18 + 2 + 3
I can find all pairs of numbers with a total of 20 e.g. 13+7
I can find all pairs of multiples of 10 with a total of 100 e.g. 30+70
I know multiplication facts for the 2, 5 and 10 times tables and corresponding division facts
E.g. 10 x 2 = 20 and 20÷10 =2
I can find doubles of all numbers to 20 and know the corresponding halves
E.g. double 5 = 10, half of 10 = 5
I can add and subtract any single digit (0-9) to or from any 2 digit number (e.g. 23) 64+4
I can recognise odd and even numbers to 100
I can count on in tens and ones
I can double any multiple of 5 up to 50 e.g. double 35 = 70
I can add a one digit number to any two-digit number to make the next multiple of 10
I can halve any multiple of 10 up to 100, e.g. halve 50 = 25

Year 1			
	Unit: Place Value	**Weeks: 4**	**Term: Autumn 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to count to ten, forwards and backwards, beginning with 0 or 1, or from any given number. I know the language of equal to, more than, less than, fewer, most and least.	I can read, write and order numbers from 0 to 10 in digits and words. I can find one more or one less of a given number. I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	equal to, more than, less than, fewer, most and least. forward, backward		
	Unit: Addition and Subtraction	**Weeks: 4**	**Term: 2 weeks in Autumn 1** **2 weeks at start of Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know all bonds of numbers 1-10 I know the symbols for addition (+), subtraction (-) and equals (=) signs. I know what addition and subtraction are.	I can show and use number bonds to 10. I can read, write and understand calculations with +, - and = signs I can add and subtract one digit numbers to 10 (including 0). I can solve one step problems using addition and subtraction, including missing number problems.	I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Number bond Addition, add, plus, total, altogether, subtract, minus, take away, equals		
	Unit: Place Value	**Weeks: 2**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know how to count to twenty, forwards and backwards, beginning with 0 or 1, or from any given number. I know the language of equal to, more than, less than, fewer, most and least.	I can read, write and order numbers from 0 to 20 in digits and words. I can find one more or one less of a given number. I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. I can use objects and pictures to show numbers up to 20.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can prove or disprove a mathematical statement. am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	equal to, more than, less than, fewer, most and least. forward, backward		
	Unit: Geometry	**Weeks: 1**	**Term Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the names of common 2-D shapes, including: rectangles (including squares), circles and triangles). I know a square is a special rectangle. I know the names of common 3-D shapes, including: (cuboids (including cubes), pyramids and spheres).	I can recognise 2-D shapes including everyday objects in different orientations and sizes. I can recognise and name 3-D shapes including everyday objects in different orientations and sizes. I can order and arrange shapes into patterns.	I can prove or disprove a mathematical statement. Eg. This is a square because it has 4 sides. I am able to use practical equipment to demonstrate my understanding. I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs). Eg. Draw 3 different squares
	Vocabulary		
	Square, rectangle, circle, triangle, cuboid, cube, pyramid, sphere		
	Unit: Addition and Subtraction	**Weeks: 3**	**Term Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the symbols for addition (+), subtraction (-) and equals (=) signs. I know what addition and subtraction are.	I can read, write and understand calculations with +, - and = signs I can add and subtract one and two digit numbers to 20 (including 0).	I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).

		I can solve one step problems using addition and subtraction, including missing number problems.	I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Number bond Addition, add, plus, total, altogether, subtract, minus, take away, equals		
	Unit: Measure – length and height	**Weeks: 2**	**Term Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know what length is. I know what height is.	I am beginning to measure and record length and height. I can compare, describe and solve problems using measures (teacher to specify for lesson)	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can use a trial and error method to solve a problem
	Vocabulary		
	Length, height, measure, compare		
	Unit: Place Value	**Weeks: 3**	**Term Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to count to fifty, forwards and backwards, beginning with 0 or 1, or from any given number. I know the language of equal to, more than, less than, fewer, most and least.	I can read, write and order numbers from 0 to 50 in digits and words. I can find one more or one less of a given number. I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. I can count in multiples of twos, fives and tens.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
	Vocabulary		
	equal to, more than, less than, fewer, most and least. Base ten, tens frame, number line, bead string Count, forward, backward		
	Unit: Measure – weight and capacity	**Weeks: 2**	**Term Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know what mass / weight is. I know what capacity / volume is.	I am beginning to measure mass/ weight, capacity and volume I can compare, describe and solve problems using measures	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I am able to use practical equipment to demonstrate
	Vocabulary		
	Weight, mass, capacity, volume, measure, compare		
	Unit: Multiplication and Division	**Weeks: 3**	**Term Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to organise shapes into rows and columns I know doubles of numbers to 10. I know halves of numbers up to 20.	I can count in multiples of twos, fives and tens. I can solve simple multiplication problems by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. I can solve simple division problems by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. I can show multiplication using arrays. I can share and group small amounts.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate
	Vocabulary		
	Multiply. Times. Equal groups / unequal groups Divide, share, how many each / in each group Array		
	Unit: Fractions	**Weeks: 3**	**Term Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that a half is one of two equal parts of an object, shape or quantity. I know that a quarter is one of 4 equal parts of an object, shape or quantity.	I can find and half a shape, object or quantity. I can find a quarter of a shape, object of quantity I can solve simple half and quarter problems using measures.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Half, quarter, equal, part		
	Unit: Geometry	**Weeks: 1**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know what position, direction and movement is.	I can describe position, directions and movements.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	left, right, top, middle, bottom, on top of, in front of, above, between, around, near, close, far, up down, forwards, backwards, inside and outside.		
	Unit: Place value	**Weeks: 2**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. I know and understand the language of equal to, more than, less than, fewer, most and least. I know the place value of tens and ones.	I can read, write and order numbers from 0 to 100 in digits and words. I can find one more or one less of a given number. I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	equal to, more than, less than, fewer, most and least. Base ten, tens frame, number line, bead string Count, forward, backward		
	Unit: Measures - Money	**Weeks: 1**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the value of different coins and notes.		I am able to use practical equipment to demonstrate
	Vocabulary		
	Pound, pence / penny All denominations of coins Value		
	Unit: Measures - Time	**Weeks: 2**	**Term Summer 2**
	Knowledge: fluency	Skills: fluency	Skills: reasoning and problem solving

	I know the following vocabulary: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. I know and use words relating to dates, such as days, weeks, months and years. I know how to tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	I can sequence events in time order. I can compare, describe and solve time problems. I am beginning to measure and record time.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate
	Vocabulary		
	before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. Hour, o clock, hand, half past		

Year 2

Reasoning and problem solving

I can use specific mathematical vocabulary to explain methods, ideas and answers.
I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
I can prove or disprove a mathematical statement.
I can break down complex problems into smaller steps and record them logically.
I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
I can find the calculation within a presented problem (worded, diagram or concept).
I am able to use practical equipment to demonstrate my understanding.
I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
I can use a trial and error method to solve a problem

Mental maths objectives

I can recall addition and subtraction facts for all numbers to at least 10
I can count in 5's to 120, 2's to 50 and 10's to 200 forwards and backwards from any given number
I can partition 2 larger numbers eg. 18 + 5 = 18 + 2 + 3
I can find all pairs of numbers with a total of 20 e.g. 13+7
I can find all pairs of multiples of 10 with a total of 100 e.g. 30+70
I know multiplication facts for the 2, 5 and 10 times tables and corresponding division facts
E.g. 10 x 2 = 20 and 20÷10 =2
I can find doubles of all numbers to 20 and know the corresponding halves
E.g. double 5 = 10, half of 10 = 5
I can add and subtract any single digit (0-9) to or from any 2 digit number (e.g. 23) 64+4
I can recognise odd and even numbers to 100
I can count on in tens and ones
I can double any multiple of 5 up to 50 e.g. double 35 = 70
I can add a one digit number to any two-digit number to make the next multiple of 10
I can halve any multiple of 10 up to 100, e.g. halve 50 = 25

Year 2	Unit: Place Value	Weeks: 3	Term Autumn 1
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know all of the names of numbers up to 100. I know the place value of each digit in a two-digit number (tens, ones). I know what these signs mean < > =	I can read and write numbers to at least 100 in digits and words. I can identify, represent and estimate numbers using different representations including the number line. I can compare and order numbers from 0 to 100, using the < > and = signs by identifying the highest value digit. I can count in steps of 2, 3 and 5 from 0, and in tens from any number, forwards and backwards.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Place value / place value grid Digit, numeral Greater than, less than, equal Tens, ones / unit Base ten		
	Unit: Addition and Subtraction	**Weeks: 3**	**Term Autumn 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know addition and subtraction facts to 20 fluently. I know mental strategies to use to add and subtract a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. I know that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	I can use addition and subtraction facts to 20 and use these to find and use number facts to 100. I can add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. *I can add two or three numbers together using apparatus and/or pictures* *I can subtract two or three numbers together using apparatus and/or pictures* I can show that addition can be done in any order and subtraction can't.	I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	add / plus / total / altogether sum		

	subtract / take away / minus / find the difference less than / more than place value digit number bond bridge units / tens / hundreds mental methods		
	Unit: Multiplication and Division	**Weeks: 4**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the 2, 5 and 10 times table. I know what odd and even numbers are. I know what the symbols mean. (x, divide, equals). I know the link between multiplication and division.	I can use multiplication and division facts for the 2, 5 and 10 times table. I can recognise odd and even numbers. I can use the symbols (x, divide, equals). I can use apparatus and arrays to solve multiplication and division statements. I can show that multiplication can be done in any order and division can't.	I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
	Vocabulary		
	Multiply. Times. Equal groups / unequal groups Divide, share, how many each / in each group Odd, even Array Times table		
	Unit: Measure - Money	**Weeks: 2**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the symbols for pounds (£) and pence (p) I know the value of coins and notes.	I can use symbols for pounds and pence. I can choose the correct coins to make a particular value. I can combine amounts to make a particular value. I can find different combinations of coins to make the same value. I can add and subtract money of the same unit, including giving change.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding. I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
	Vocabulary		

	Pound, pence / penny All denominations of coins Value Amount total		
	Unit: Statistics	**Weeks: 2**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that data can be represented in bar charts, pictograms and tables. I know that the term fewer means less an how many more indicates a difference	I can understand and draw simple pictograms, tally charts, block diagrams and simple tables. I can ask and answer simple questions by counting the number in each category. I can ask and answer questions by comparing or totalling categories.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
	Vocabulary		
	How many more Fewer than Find the different Key Bar chart / pictogram / tally/ Scale interval		
	Unit: Fractions	**Weeks: 3**	**Term: Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to recognise and write fractions of a length, shape, set of objects or quantity (1/3, ¼, 2/4, I know that some fractions are equivalent (2/4 = ½)	I can find and write fractions of (teacher to specify whether length, shape, objects of quantity).	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can prove or disprove a mathematical statement.
	Vocabulary		
	Equal parts Share Divide Whole group		
	Unit: Geometry	**Weeks: 2**	**Term Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know the shape vocabulary: side, symmetry, names of shapes, vertices / vertex, edges, faces	I can identify and describe the properties of 2d shapes, including the number of sides and line symmetry in a vertical line. As Y1 plus pentagon, hexagon, octagon, quadrilateral and polygon. I can identify and describe the properties of 3d shapes. Shapes as Y1 plus prisms, cones, cylinders I can identify 2d shapes on the surface of a 3d shape. I can compare and sort common 2d and 3d shapes. I can identify lines of symmetry on 2d shapes.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	side, symmetry, names of shapes, vertices / vertex, edges, faces shape names property sort compare describe		
	Unit: Time	**Weeks: 2**	**Term Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. I know the number of minutes in an hour and the number of hours in a day.	I can compare and order intervals of time.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Hands – long hand and short hand Clock Minutes / hours / seconds Past / to / o'clock / half past / quarter past and to		
	Unit: Measure – mass, capacity, temperature	**Weeks: 2**	**Term Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know that mass is measured in kg and g, temperature in °C and capacity in l/ml.	I can choose and use appropriate standard units to estimate and measure; mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels I can read scales to the nearest numbered units. I can compare and order mass, volume, capacity, temperature using <, > and =	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can use a trial and error method to solve a problem
	Vocabulary		
	Temperature, degrees, thermometer Capacity, litres, millilitres, jug, measuring cylinder Mass, grams, kilogram, scales, heavy, light		
	Unit: Measure – length and height	**Weeks: 1**	**Term Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that length is measured in cm / mm / m using rulers, tape measures and metre sticks.	I can choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit, using rulers. I can compare and order length and height using <, > and =	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
	Vocabulary		
	Length, height, metre, centimetre, millimetre, ruler, metre stick, tape measure		
	Unit: Written Calculations	**Weeks: 1**	**Term Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know written and mental methods for addition and subtraction I know that addition is the opposite of subtraction and subtraction is the opposite of addition.	I can use apparatus, drawings and written methods to solve addition and subtraction problems, including those involving numbers, quantities and measures I can recognise and use the inverse relationship between addition and subtraction. I can solve missing number problems.	I can prove or disprove a mathematical statement. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
	Vocabulary		
	Addition, total, plus, altogether, sum, subtract, minus, take away, equals Number line		

	Tens, ones, place value		
	Unit: Geometry – position and direction	**Weeks: 1**	**Term Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know what these mean: clockwise, anti clockwise, quarter, half, three quarter and full turn	I can use mathematical vocabulary to describe position, direction and movement. *Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).* I can order and arrange objects in patterns.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Rotate , turn Clockwise, anti clockwise, left, right Quarter, half, three quarter, full turn Forward, backwards, left, right, up, down		
	4 weeks revision		
	Unit: Place Value	**Weeks: 1**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
		I can use place value and number facts to solve problems	
	See Autumn Term unit for vocabulary, teaching points and reasoning and problem solving.		
	Unit: Written Calculations	**Weeks: 2**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See previous units on addition, subtraction, multiplication, division and written calculations for further objectives, teaching points, vocabulary and sticky learning	I can use apparatus, drawings and written methods to solve addition and subtraction problems. I can solve one step problems involving multiplication and division.	I can break down complex problems into smaller steps and record them logically. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Unit: Fractions	**Weeks: 1**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See previous unit on fractions for objectives, teaching points, vocabulary and problem solving		
	Unit: Money	**Weeks: 1**	**Term Summer 2**

	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See previous unit on money for objectives, teaching points, vocabulary and problem solving		
	Unit: Geometry - Shape	**Weeks: 1**	**Term Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See previous unit on shape for objectives, teaching points, vocabulary and problem solving		

Year 3

Reasoning and place value skills

I can use specific mathematical vocabulary to explain methods, ideas and answers.
I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
I can prove or disprove a mathematical statement.
I can break down complex problems into smaller steps and record them logically.
I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
I can find the calculation within a presented problem (worded, diagram or concept).
I am able to use practical equipment to demonstrate my understanding.
I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
I can use a trial and error method to solve a problem

Mental maths objectives

I can find all pairs of numbers to 10, 20, 50 and 100
I can count in 10s bridging 100 forwards and backwards
I can partition numbers into H,T,U in order to add/subtract them (without bridging)
I can find doubles of all numbers to 100 and know the corresponding halves for even numbers
I can halve multiples of 10 up to 200
I can find all pairs of multiples of 10 with a total of 1000 eg. 300 + 700
I know the multiplication facts for the 2s, 3s, 5s, 4s, 8s, 10s and related division facts.
I can recognise odd and even numbers to 1000
I can add and subtract 10 and 100 to any 3 digit number
I can add a one digit number to any three digit number to make the next multiple of 10
I can use knowledge of multiplication facts and place value, e.g. 7 x 3 = 21 to find 70 x 3, 7 x 30
I can round numbers to the nearest 10 and use this to estimate answers
I can calculate change from £1, £5

Year 3			
	Unit: Place value	**Weeks: 3 weeks**	**Term: Autumn 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the column names (H,T,U) I know I do not need to use a written calculation to solve 10 or 100 more or less than I know the place value of each digit in a three-digit number (hundreds, tens, ones). I know what these signs mean < > = I know all the names of the numbers up to 1000	I can find, show and estimate numbers using apparatus, drawings or digits I can find 10 or 100 more or less than a given number. I can compare and order numbers from 0 to 100, using the < > and = signs by identifying the highest value digit. I can count from 0 in multiples of 4, 8, 50 and 100. (teacher to specify) I can read and write numbers to at least 1000 in digits and words.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Hundreds, tens, ones place value column grid greater than, less than, equal to		
	Unit: Addition and subtraction	**Weeks: 3 weeks**	**Term: Autumn 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know to use place value when adding or subtracting mentally. I know how to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. I know the nearest 10 or 100	I can add two numbers up to 3 digits, using mental methods – applying my knowledge of place value rather than calculate with a written method. (a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds.) I can add two numbers up to 3 digits, using written methods as per the calculation policy I can estimate the answer to a calculation and use inverse operations to check answers. (i.e. use of rounding)	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Add, plus, total, altogether, sum, more than Subtract, take away, minus, find the difference, less than place value, digit		

	carry, steal, bridge number bond units, tens, hundreds estimate, inverse, rounding mental methods, written methods		
	Unit: Multiplication and division	**Weeks: 3**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know multiples of 4, 8, 50 and 100 from 0 I know what makes an odd and even number I know multiplication and division facts for the 3, 4 and 8 multiplication tables. I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods). I know doubles of multiples of 100 and corresponding halves (including odd multiples of 10 and 100)	I can calculate multiplications and divisions using the tables that I know. I can recognise patterns i.e. odds/evens I can use knowledge of place value and times tables to calculate with multiples for 10 i.e. 4 x 6 = 24, 40 x 6 = 240 I can use the written methods to multiply and divide - see calculation policy. I can use mental strategies to multiply 2 digits by 1 digit. I can use my knowledge of doubles and halves to 20 and apply it to multiples of 10 or 100 i.e. double 8 = 16, double 80 = 160	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	multiply/times/product/repeated addition divide/share/shared by/division factors multiple double halve odd even		
	Unit: Fractions	**Weeks: 2**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know that tenths are found by dividing an object in to 10 equal parts .and in dividing one-digit numbers or quantities by 10 I know fractions as numbers (unit fractions and non-unit fractions with small denominators). I know how to recognise and write fractions of a discrete set of objects (unit fractions and non-unit fractions with small denominators).	I can find a tenth of a quantity or object I can count forwards and backwards in tenths I can write the fraction given the picture. I can find fractions of a discrete set of objects (unit fractions and non-unit fractions with small denominators).	I can prove or disprove a mathematical statement.
	Vocabulary		
	numerator denominator equal parts share/divide multiple parts whole unit non-unit		
	Unit: Statistics	**Weeks: 2 weeks**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that data can be represented in bar charts, pictograms and tables. I know that the term fewer means less and how many more indicates a difference	I can represent and interpret data using (teacher to specify bar charts, pictograms or tables). I can use subtraction methods to solve problems such as 'How many more..? How many fewer…? I can use simple scales using the tables I know.	I can represent and interpret data using (teacher to specify bar charts, pictograms or tables). I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
	Vocabulary		
	how many more fewer than find the difference key bar chart / pictogram / data / tally/ frequency scale interval		
	Unit: Addition and subtraction (focus on problem solving)	**Weeks: 2 weeks**	**Term: Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know how to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. I know the nearest 10 or 100 to a number	I can add two numbers up to 3 digits, using written methods as per the calculation policy I can estimate the answer to a calculation and use inverse operations to check answers. (i.e. use of rounding)	I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps (including missing numbers).
	Vocabulary		
	Add, plus, total, altogether, sum, more than Subtract, take away, minus, find the difference, less than place value, digit carry, steal, bridge number bond units, tens, hundreds estimate, inverse, rounding mental methods, written methods		
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know number bonds to 10 and how they relate to multiples of 10 and 100. I know the value of each coin and note. I know how to use my knowledge of place value to calculate mentally. I know common equivalent measures. (cm, mm and m) I know to use my written and mental methods to help me calculate. I know how to use a ruler accurately. I know that all 4 sides must be added together (or I can add 2 sides and double the answer).	I can add and subtract amounts of money to give change, using pounds and pence. I can measure, compare, add and subtract lengths. (cm, mm and m) I can measure the perimeter of simple 2D shapes.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	cm, mm, m (centimetre, millimetre and metre) perimeter pounds, pence value, cost add, subtract, total, altogether, sum, find the difference, change		

	Unit: Time	**Weeks: 3 weeks**	**Term: Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to read Roman numerals from I to XII. I know how to tell and write the time from analogue and 24 hour clock. I know how to tell the time to the nearest minute. I know there are 60 seconds in a minute, 60 minutes in an hour and 24 hours in a day. I know the number of days in each month, year and leap year.	I can write the roman numerals from I to XII. I can record and compare time using seconds, minutes and hours. I can use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. I can compare how long different events take.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	am, pm, morning, afternoon, evening, noon, midnight month, year, leap year, analogue, digital seconds, minutes, hours o'clock, quarter past, quarter to, half past, ___ to, ___ past,		
	Unit: Fractions	**Weeks: 3 weeks**	**Term: Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know equivalent fractions.	I can draw equivalent fractions. I can compare and order fractions with the same denominator. I can add and subtract fractions with the same denominator.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	numerator denominator equal parts share/divide multiple parts whole unit non-unit		
	Unit: Multiplication and division	**Weeks: 2 weeks**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know multiplication and division facts for the 3, 4 and 8 multiplication tables. I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods).	I can use knowledge of place value and times tables to calculate with multiples for 10 i.e. 4 x 6 = 24, 40 x 6 = 240 I can use the written methods to multiply and divide - see calculation policy. I can use mental strategies to multiply 2 digits by 1 digit.	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	multiply/times/product/repeated addition divide/share/shared by/division factors multiple double halve odd even		
	Unit: Geometry	**Weeks: 2 weeks**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know angles are a property of shapes and that angles are linked to turning. I know that 2 right angles make half a turn, 3 make three quarters of a turn and 4 make a complete turn. I know shapes as previous years plus heptagon, nonagon, decagon.	I can identify right angles. I can identify whether angles are greater than or less than a right angle. I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines. I can draw 2 shapes. I can make 3 shapes. I can recognise 3-D shapes in different orientations and describe them. I can use terms symmetrical and non-symmetrical.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Properties, sides, vertices, edges Circle, triangle, square, rectangle, pentagon, hexagon, heptagon, octagon, nonagon, decagon		

	Cube, cuboid, sphere, triangular based pyramid, cylinder, cone, square based pyramid		
	Unit: Measures – mass and capacity	**Weeks: 3 weeks**	**Term: Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know common equivalent measures. (kg, g and ml, l) I know that mass is measured in g and kg and that capacity is measured in ml and l. I know to use my written and mental methods to help me calculate. I know which equipment I need to use I know how to read scales accurately	I can measure, compare, add and subtract (teacher to specify mass (kg/g); volume/capacity (l/ml)).	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding. I can use a trial and error method to solve a problem
	Vocabulary		
	Capacity, Millilitres (ml), litres (l), scales, Mass, grams (g), kilograms (kg), jug, measuring cyclinder		
	Unit: Multiplication and division	**Weeks: 1 week**	**Term: Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know multiplication and division facts for the 3, 4 and 8 multiplication tables. I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods).	I can use knowledge of place value and times tables to calculate with multiples for 10 i.e. 4 x 6 = 24, 40 x 6 = 240 I can use the written methods to multiply and divide - see calculation policy. I can use mental strategies to multiply 2 digits by 1 digit.	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	multiply/times/product/repeated addition divide/share/shared by/division factors multiple double		

	halve odd even		
	Unit: Four operations and problem solving	**Weeks: 2 weeks**	**Term: Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods).	I can add two numbers up to 3 digits, using written methods as per calculation policy I can use the written methods to multiply and divide - see calculation policy. I can use mental strategies to multiply 2 digits by 1 digit.	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary	**Teaching points**	**Overlearning TBC**
	As previous units		

Year 4

Reasoning and place value skills

I can use specific mathematical vocabulary to explain methods, ideas and answers.
I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
I can prove or disprove a mathematical statement.
I can break down complex problems into smaller steps and record them logically.
I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
I can find the calculation within a presented problem (worded, diagram or concept).
I am able to use practical equipment to demonstrate my understanding.
I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
I can use a trial and error method to solve a problem

Mental maths objectives

I know multiplication facts to 12 x 12 and the corresponding division facts
I can count on or back in hundreds, tens and ones
I can use partitioning to multiply, e.g.13 × 4 = (10 × 4) + (3 × 4) = 40 + 12
I can use knowledge of multiplication facts and place value, e.g. 7 x 8 = 56 to find 70 x 8, 7 x 80
I can use sums and differences of pairs of multiples of 10, 100, 1000
I know what must be added to a 3 digit number to make the next multiple of 100.
I can use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. i.e 600 x 7 would be 6 x 7 x 100
I can multiply and divide numbers to 1000 by 10 and then 100 (whole-number answers), e.g. 325 × 10, 42 × 100, 120 ÷ 10, 600 ÷ 100, 850 ÷ 10
I can use knowledge of place value and related calculations, e.g. work out 140 + 150 = 290 using 14 + 15 = 29
I can halve any even number to 500
I can double any multiple of 10 or 100, e.g. double 340, double 800, and halve the corresponding multiples of 10 and 100
I can double any two-digit number, e.g. double 39
I can add near doubles of two-digit numbers, e.g. 38 + 37
I can add or subtract a near multiple of 10, e.g. 56 + 29, 86 – 38
I can round numbers to the nearest 10 or 100
I can calculate change from £1, £5, £10, £20
I can use the 6 times table to calculate minutes and hours.

Year 4			
	Unit: Place value	**Weeks: 3 weeks**	**Term: Autumn 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the place value of each digit in a four digit number (thousands, hundreds, tens and ones) I know what these signs mean < > = I know the column names (Th, H, T, U) I know that over time, the numeral system changed to include the concept of zero and place value. I know how to read Roman numerals to 100 (I to C) I know I do not need to use a written calculation to solve 1000 more or less than	I can count in multiples of 6, 7, 9, 25 and 1000. (teacher to specify) I can compare and order numbers from 0 to 100, using the < > and = signs by identifying the highest value digit. I can count backwards through zero to include negative numbers. I can find 1000 more or less than a given number. I can find, show and estimate numbers using apparatus, drawings or digits	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Thousands, hundreds, tens, ones place value column grid greater than, less than, equal to		
	Unit: Addition and subtraction	**Weeks: 4 weeks**	**Term: Autumn 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know to use place value when adding or subtracting mentally. I know how to add and subtract numbers with up to four digits, using formal written methods of columnar addition and subtraction. I know the nearest 10, 100 or 1000	I can add two numbers up to 4 digits, using mental methods - apply knowledge of place value rather than calculate with a written method. (a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds.) I can add two numbers up to 3 digits, using written methods as per calculation policy I can estimate the answer to a calculation and use inverse operations to check answers. (i.e. use of rounding)	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Add, plus, total, altogether, sum, more than Subtract, take away, minus, find the difference, less than		

	place value, digit carry, steal, bridge number bond units, tens, hundreds estimate, inverse, rounding mental methods, written methods		
	Unit: Multiplication and division	**Weeks: 3**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know multiplication and division facts all tables up to 12 x 12 I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods). I know doubles of multiples of 100 and corresponding halves (including odd multiples of 10 and 100)	I can count in multiples of 6, 7, 9. 25 and 1000 I can use knowledge of place value and times tables to calculate with multiples for 10 i.e. 4 x 6 = 24, 40 x 6 = 240 I can multiply by 0 and 1 I can multiply 3 numbers together I can use the written methods to multiply and divide - see calculation policy. I can use mental strategies to multiply 2 digits by 1 digits. I can use my knowledge of doubles and halves to 20 and apply it to multiples of 10 or 100 i.e. double 8 = 16, double 80 = 160	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	multiply/times/product/repeated addition divide/share/shared by/division factors multiple double halve odd even		
	Unit: Fractions	**Weeks: 2**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know that hundredths are found by dividing an object in to 100 equal parts .and in dividing one-digit numbers or quantities by 100 I know my knowledge of times tables can help me to identity equivalent fractions.	I can find a hundredth of a quantity or object I can count forwards and backwards in hundredths I can identify, name, write and draw families of equivalent fractions. I can add and subtract fractions with the same denominator.	I can prove or disprove a mathematical statement.
	Vocabulary		
	numerator denominator equal parts share/divide multiple parts whole unit non-unit		
	Unit: Measures	**Weeks: 2 weeks**	**Term: Autumn 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I can read, write and convert time between analogue and digital 12- and 24-hour clocks.	I can convert between different units of measure. (km to m; hours to minute)	I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. I can use specific mathematical vocabulary to explain methods, ideas and answers. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	am, pm, morning, afternoon, evening, noon, midnight month, year, leap year, analogue, digital seconds, minutes, hours o'clock, quarter past, quarter to, half past, ___ to, ___ past,		
	Unit: Place value	**Weeks: 1 week**	**Term: Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know the nearest 10, 100 and 1000 to a given number	I can round any number to the nearest 10, 100 or 1000	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Rounding **Estimating** **Thousand, Hundred, ten**		
	Unit: Multiplication and division	**Weeks: 3 weeks**	**Term: Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know multiplication and division facts all tables up to 12 x 12 I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods).	I can use knowledge of place value and times tables to calculate with multiples for 10 i.e. 4 x 6 = 24, 40 x 6 = 240 I can multiply by 0 and 1 I can multiply 3 numbers together I can use the written methods to multiply and divide - see calculation policy. I can use mental strategies to multiply 2 digits by 1 digit. I can recognise and use factor pairs	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
	Vocabulary		
	multiply/times/product/repeated addition divide/share/shared by/division factors multiple double halve odd even		
	Unit: Measures	**Weeks: 1 week**	**Term: Spring 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that area is the inside of a shape	I can find the area of rectangles by counting squares.	I am able to use practical equipment to demonstrate my understanding.

	Vocabulary		
	area		
	Unit: Measures	**Weeks: 1 week**	**Term: Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that perimeter is the outside of a shape. I know that I can use my knowledge of doubling to calculate the perimeter of a rectangle.	I can measure and calculate the perimeter of rectangles.	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Perimeter **converting**		
	Unit: Fractions and decimals	**Weeks: 4 weeks**	**Term: Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know decimal equivalents of any number of tenths or hundredths. I know how to divide by 10 and 100, giving the answer as a decimal fraction. I know what these signs mean < > = I know the column names Th, H, T, U, t h I know the nearest whole number I can know decimal equivalents to 1/4, 1/2 and 3/4 I know standard equivalent measures. (100cm = 1m, 1000kg = 1kg etc)	I can compare numbers with the same number of decimal places up to two decimal places. I can round decimals with one decimal place to the nearest whole number. I can convert between different units of measure.	I can solve problems involving decimals and fractions. I can break down complex problems into smaller steps and record them logically.
	Vocabulary		
	Fraction Decimal Equivalent Conversion compare		
	Unit: Fractions and decimals	**Weeks: 2 weeks**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to divide by 10 and 100, giving the answer as a decimal fraction.		I can solve simple money and measure problems using decimals and fractions.

	Vocabulary		
	Fraction Decimal Equivalent Conversion compare		
	Unit: Measures – money	**Weeks: 2 weeks**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know standard equivalent measures (kg, g, cm, m, mm, l and ml)	I can estimate, compare and calculate different measures, including money in pounds and pence.	I can solve money problems giving answers as decimals. I can use specific mathematical vocabulary to explain methods, ideas and answers. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	Capacity, Millilitres (ml), litres (l), scales, Mass, grams (g), kilograms (kg), jug, measuring cylinder Pounds (£) pence (p)		
	Unit: Geometry – position, direction and symmetry	**Weeks: 2 weeks**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to read co-ordinates I know the steps needed to translate a shape on a grid. I know the size has not changed. I know the steps needed to reflect a shape across an axis	I can describe position as coordinates in the first quadrant.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Coordinates Quadrant Horizontal Vertical Translation Reflection		
	Unit: Statistics	**Weeks: 2 weeks**	**Term: Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know that data can be represented in bar charts, pictograms and tables. I know how to interpret different scales.	I can represent and interpret data using (teacher to specify bar charts, pictograms or tables). I can read and understand a range of scales.	I can solve problems using information presented in (teacher to specify bar chart/pictogram/tables/line graphs)
	Vocabulary		
	how many more fewer than find the difference bar chart / line graph scale interval		
	Unit: Geometry – properties of shape and angles	**Weeks: 2 weeks**	**Term: Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know that an acute angle is less than 90° I know that an obtuse angle is more than 90° and less than 180° I know what these signs mean < > =	I can identify acute and obtuse angles. I can compare and order angles. I can compare and classify geometric shapes based on properties and sizes. I can identify lines of symmetry in 2d shapes. I can plot specified points and draw sides to complete a given polygon.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Acute Obtuse Angle Polygon Symmetry		
	Unit: 4 operations and problem solving	**Weeks: 1 week**	**Term: Summer 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know how to add and subtract numbers with up to four digits, using formal written methods of columnar addition and subtraction. I know the procedural steps and the correct mathematical symbols to use when multiplying and dividing (including for three-digit numbers times one-digit numbers, using formal written methods).	I can solve addition and subtraction two step problems deciding which operation and method to use. I can use a written method to multiply / divide.	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).

Year 5

Reasoning and place value skills

I can use specific mathematical vocabulary to explain methods, ideas and answers.
I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
I can prove or disprove a mathematical statement.
I can break down complex problems into smaller steps and record them logically.
I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
I can find the calculation within a presented problem (worded, diagram or concept).
I am able to use practical equipment to demonstrate my understanding.
I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
I can use a trial and error method to solve a problem

Mental maths objectives

I can counting forward and backwards in steps e.g. 25, 30, 50
I can apply halving and doubling facts to larger and smaller numbers e.g. half of 30 = 15 so half of 300 = 150 and half of 3 = 1.5
I can halve any even number to 1000
I can add and subtract decimals
I can recognise complements to one whole (E.g. 4.3 + 5.7)
I know what must be added to a number to make the next multiple of 100, 1000 etc
I know square numbers to 10 × 10
I can find factor pairs to 100
I know multiplication facts to 12 x 12 and the corresponding division facts and apply this to fractions
I can use use known facts to multiply e.g. 70 x 600 or 0.6 x 7
I can double three-digit multiples of 10 to 500, e.g. 380 × 2, and find the corresponding halves, e.g. 760 ÷ 2
I can find the difference between near multiples of 100, e.g. 607 – 588, or of 1000, e.g. 6070 – 4087
I can multiply and divide whole numbers and decimals by 10, 100 or 1000, e.g. 4.3 × 10, 0.75 × 100, 25 ÷ 10, 673 ÷ 100, 74 ÷ 100
I can add or subtract a near multiple of 10 or 100 to any two-digit or three-digit number, e.g. 235 + 198
I can find 50%, 25% or 10% of whole numbers or quantities, e.g. 25% of 20 kg, 10% of £80
I can round to the nearest 10, 100 or 1000
I can calculate change from £1, £5, £10, £20
I can use the 6 times table to calculate minutes and hours.

Year 5			
	Unit: Place value	**Weeks: 3**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. I know how to count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. I know how to interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. I know the steps needed to round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000 I know how to read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	I can compare by identifying the highest value digit I can use negative numbers in context, and calculate intervals across zero. I can round any whole number depending on the context given.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Place value Digit, numeral, integer Round, nearest Negative, positive Greater than, less than, equal		
	Unit: Addition and subtraction	**Weeks: 2**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to add and subtract numbers mentally with increasingly large numbers. I know how to add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) I know how to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	I can use factorisation to calculate mentally i.e. x8 (2 x 2 x 2) I can apply place value and estimation skills to check my work. I can use rounding as a form of estimation and checking. I can apply place value and estimation skills to check my work. I can use rounding as a form of estimation and checking.	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept). I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		

	Add, plus, total, altogether, sum Subtract, minus, difference Calculate Estimate Round		
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to extract information from a line graph. I know the steps needed to solve sum and difference problems presented in a line graph.	I can plot points on a line graph using the continuous data scales on the x and y axis	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
	Vocabulary		
	Sum Difference Plot Axis Line graph Continuous data		
	Unit: Multiplication and division	**Weeks: 3**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to multiply and divide numbers mentally drawing upon known facts. i.e. 0.6 x 7 see as 6 x 7 then divide by 10 I know how to multiply and divide whole numbers by 10, 100 and 1000. I know the terms multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. I know and use square numbers and cube numbers and the notation for squared (^{2}) and cubed (^{3}) I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. I know how to establish whether a number up to 100 is prime and recall prime numbers up to 19 I know to find doubles and halves of decimals.	I can apply knowledge of place value to calculate mentally I can solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. I can apply patterns of multiples	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can break down complex problems into smaller steps and record them logically. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	Multiply, product, multiple		

	Divide, factor Common factor Square, cube, prime		
	Unit: Measure: area and perimeter	**Weeks: 2**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the steps needed to measure and calculate the perimeter of composite rectilinear shapes in cm and m. I know the steps needed to calculate and compare the area of rectangles (including squares), and including using standard units, cm^2, m^2 I know how to estimate the area of irregular shapes	I can break down irregular hexagons into 2 rectangles I can apply knowledge of vertical and horizontal sides to find missing lengths/widths I can approximate the fraction of squares covered	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
	Vocabulary		
	Square, rectangle, rectilinear Area Regular, irregular		
	Unit: Fractions	**Weeks: 3**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths I know mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example 2/5 + 4/5 = 6/5 = 1 1/5]	I can compare and order fractions whose denominators are multiples of the same number. I can manipulate the numerator and denominator in order to create equivalent fractions I can add and subtract fractions with the same denominator and denominators that are multiples of the same number. I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	I can prove or disprove a mathematical statement. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	Fraction, whole, equal part, numerator, denominator, mixed number, unit fraction, equivalent, improper fraction		
	Unit: Fractions, decimals and percentages	**Weeks: 5**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know, read and write decimal numbers as fractions [for example 0.71 = 71/100] I know, read, write, order and compare numbers with up to three decimal places. I know and use thousandths and relate them to tenths, hundredths and decimal equivalents. I know the steps needed to round decimals with two decimal places to the nearest whole number and to one decimal place. I know the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. I know how to write percentages as a fraction (half, quarter, fifths) and with a denominator of 10 or 25.	I can solve problems by scaling simple fractions or rates. I can use equivalent fractions, decimals and percentages to solve problems i.e. knowing ½ = 0.5 = 50% (halves, quarters, fifths or denominators of 10 or 25 which can be related to 100) I can apply pattern knowledge to find equivalent fractions and percentages i.e. 3/10 = 30%	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can prove or disprove a mathematical statement. I can break down complex problems into smaller steps and record them logically.
	Vocabulary		
	Fraction, percentage, decimal, equivalents, decimal place, numerator, denominator Round Thousandths		
	Unit: Multiplication and division	**Weeks: 2**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to multiply and divide numbers mentally drawing upon known facts. I know how to multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers. I know how to divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context.	I can apply my knowledge of written methods in order to solve worded problems involving all 4 operations	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept)
	Vocabulary		
	Divide, divisor, dividend, multiply, product, factor, multiple, remainder		
	Unit: Geometry: properties of shapes	**Weeks: 3**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know and name 3D shapes, including cubes and other cuboids, from 2D representations. I know the properties of rectangles I know how to distinguish between regular and irregular polygons I know angles are measured in degrees I know how to estimate and compare acute, obtuse and reflex angles. I know and recognise angles at a point and one whole turn (total 360°), angles at a point on a straight line and ½ a turn (total 180°) other multiples of 90° I know the conventional markings for parallel line and right angles. I know and understand the term diagonal.	I can deduce related facts and find missing lengths and angles I can reason about equal sides and angles to determine the name of a shape I can draw given angles, and measure them in degrees ° using a protractor	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can prove or disprove a mathematical statement.
	Vocabulary		
	Angle, obtuse, acute, reflex, right, protractor, degrees, protractor 2d, 3d, net, regular, irregular, polygon, cube, cuboid, face, vertices Sphere, cylinder, prism, pyramid, tetrahedron, cone		
	Unit: Decimals	**Weeks: 2**	**Term: Summer**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the steps to calculate and solve problems involving numbers up to three decimal places. I know how to multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	I can apply my knowledge of written methods in order to solve worded problems involving all 4 operations and in the context of measure choosing the correct unit.	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		

	Decimal fraction, decimal, equivalents, decimal place, Thousandths Place value		
	Unit: Measures: converting units and time	**Weeks: 3**	**Term: Summer**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml] I know approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	I can convert between unit of measure using multiplying and dividing skills for 10, 100 and 100 for metric and approximate ratios for imperial i.e. 1.6 km ← 1 mile	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can break down complex problems into smaller steps and record them logically. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Unit and name for mm, cm, m, km, g, kg, ml, l Measure Equivalent Metric imperial Convert Approximate		
	Unit: Measure: volume and time	Weeks: 2	Term: Summer
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to estimate volume [for example using 1cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	I can convert between measures of time in order to work within and answer with the correct unit (using all 4 operations)	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	Volume, height, width, length Cube cuboids Second, minute, hour, day, week, month, year, leap year, decade, century, millennium		
	Unit: Statistics	**Weeks: 1**	**Term: Summer**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know how to complete, read and interpret information in tables including timetables.	I can convert between analogue and 24 hour clock in order to read timetables and calculate time intervals.	I can break down complex problems into smaller steps and record them logically.
	Vocabulary		
	Timetable 24 hour clock Analogue Row column		
	Unit: Geometry: position and direction	**Weeks: 1**	**Term: Summer**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to describe the position of a shape on the grid using coordinates I know the steps needed to translate a shape on a grid. I know the size has not changed. I know the steps needed to reflect a shape across an axis I know how to plot a shape on a coordinate grid	I can reflect shapes/points across axis using matched points or a mirror	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Axis, quadrants, reflect, translate, mirror line, position, coordinates, plot		
	Unit: 4 operations/problem solving	**Weeks: 2**	**Term: Summer**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the steps needed to solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.		I can use specific mathematical vocabulary to explain methods, ideas and answers. I can break down complex problems into smaller steps and record them logically. I can find the calculation within a presented problem (worded, diagram or concept).
	I know the steps and operations needed to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.		
	Vocabulary		
	See units on 4 operations/written calculations		

Year 6

Reasoning and place value skills

I can use specific mathematical vocabulary to explain methods, ideas and answers.
I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction).
I can prove or disprove a mathematical statement.
I can break down complex problems into smaller steps and record them logically.
I can apply knowledge of place value in order to estimate and assess the reasonableness of answers.
I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps.
I can find the calculation within a presented problem (worded, diagram or concept).
I am able to use practical equipment to demonstrate my understanding.
I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs).
I can use a trial and error method to solve a problem

Mental maths objectives

I can add and subtract 1 from units of 10 e.g. 1000-1/9/11 not using a column method
I can multiply and divide by 10, 100 and 1000
I can double and halve any number
I can use known facts to multiply and divide
I can apply my knowledge of number bonds to larger numbers and decimal numbers
I can find what must be added to a decimal with units, tenths and hundredths to make the next whole number
I know multiplication facts to 12 x 12 and the corresponding division facts and apply this to fractions and percentages
I know square numbers to 12 x 12
I know prime numbers up to 100
I can multiply and divide two-digit decimals such as 0.8 × 7, 4.8 ÷ 6
I can find near doubles of decimals and integers (2.5 +2.6) (12 +13)
I can recall complements to 100, 1000 and beyond.
I can calculate change from £1, £5, £10, £20
I can use the 6 times table to calculate minutes and hours.
I can adding by rounding (e.g. £4.99 + £2.50)
I can find 10% or multiples of 10%, of whole numbers and quantities, e.g. 30% of 50 ml, 40% of £30, 70% of 200 g
I know equivalent fractions, decimals and percentages for hundredths e.g. 35% is equivalent to 0.35 or 35/100

Year 6			
	Unit: Place value	**Weeks: 2 weeks**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know how to read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. I know the value of each column up to 10 million and to 2dp. I know what negative numbers are and the order on a number line.	I can order and compare numbers up to 10,000,000 using the value of each digit. I can round any whole number to a required degree of accuracy depending on the context given. I can use negative numbers in context, and calculate intervals across zero.	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I am able to use practical equipment to demonstrate my understanding.
	Vocabulary		
	Place value Digit, numeral, integer Round, nearest Negative, positive Greater than, less than, equal		
	Unit: Number and written calculations	**Weeks: 4 weeks**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know the order of operations to carry out calculations involving the four operations. I know the calculation methods for addition and subtraction, choosing mental or written. I know how to multiply multi-digit numbers up to 4 digits by a 2-digit number using the formal written method of long multiplication. I know how to divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context. I know how to divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context. I know how to perform mental calculations, including with mixed operations and large numbers. I know common factors, common multiples and prime numbers. I know rounding procedures.	I can apply BODMAS rules to a complex calculation I can select the correct operation to use in multi-step problems I can apply place value and estimation skills to check my work. I can apply place value and estimation skills to check my work. I can apply place value and estimation skills to check my work. I can use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.	I can apply knowledge of place value in order to estimate and assess the reasonableness of answers. I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	Add, plus, total, altogether, sum Subtract, minus, difference Calculate Brackets, order, squares, square roots, cubes		
	Unit: Fractions, decimals and percentages	**Weeks: 5**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know factor pairs I know common multiples I know sequences can have equal steps or equal operations I know to associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example 3/8] I know and recall equivalences between simple fractions, decimals and percentages, including in different contexts. I know the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. I know written division methods in cases where the answer has up to 2 decimal places I know how to solve problems which require answers to be rounded to specified degrees of accuracy I know how to calculate percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.	I can use common factors to simplify fractions; use common multiples to express fractions in the same denomination. I can compare and order fractions, including fractions > 1 I can generate and describe linear number sequences (with fractions) I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. I can multiply simple pairs of proper fractions, writing the answer in its simplest form [for example 1/4 x 1/2 = 1/8] I can divide proper fractions by whole numbers [for example 1/3 ÷ 2 = 1/6] I can use various methods to find equivalences between fractions, decimals and percentages. I can multiply one-digit numbers with up to 2 decimal places by whole numbers. I can break down a percentage into parts in order to calculate mentally (i.e. 65% = 50 + 10 + 5)	I can use specific mathematical vocabulary to explain methods, ideas and answers. I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can prove or disprove a mathematical statement. I can break down complex problems into smaller steps and record them logically. I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs). I can use a trial and error method to solve a problem
	Vocabulary		
	Equivalent Percentage Decimal Divisor Dividend Quotient		
	Unit: Ratio and proportion	**Weeks: 2**	**Term: Autumn**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know the method to solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. I know how to solve problems involving similar shapes where the scale factor is known or can be found. I know how to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	I can use multiplication or division to solve complex problems I can use a scale such as: 1cm:1m to calculate actual sizes.	I can apply knowledge of calculation procedures in order to find mistakes, use inverse or find missing steps. I can find the calculation within a presented problem (worded, diagram or concept).
	Vocabulary		
	Ratio Proportion For every Scaling Factor Multiple		
	Unit: Measures - converting and measurement, area, perimeter and volume	**Weeks: 2.5 weeks**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the equivalent units of measurement for mm, cm, m, km, g, kg, ml, l, seconds, minutes, hours, weeks, months, years, leap years, miles I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time I know I mile is ← to 1.6 km I know that shapes with the same areas can have different perimeters and that shapes with different perimeters can have the same areas. I know how the area of a triangle and parallelogram relates to the area or a rectangle I know the formula for calculating the volume of cubes and cuboids.	I can convert between units of measure up to 3dp I can convert between miles and kilometres I can use formulae to calculate perimeter, area and volume I can use formulae to calculate the area of parallelograms and triangles I can estimate the volume of cubes and cuboids using knowledge of rounding.	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can prove or disprove a mathematical statement. I can break down complex problems into smaller steps and record them logically.
	Vocabulary		
	Cube, cuboid, parallelogram, formulae, volume, area, perimeter		

	Words and unit for : mm, cm, m, km, g, kg, ml, l, seconds, minutes, hours, weeks, months, years, leap years, miles		
	Unit: Geometry	**Weeks: 2.5 weeks**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know and describe positions on the full coordinate grid (all four quadrants). I know how to plot points, draw and translate simple shapes on the coordinate plane, and reflect them in the axes. I know the sizes or acute, obtuse, right and reflex angles. I know the properties of geometric shapes. I know angles where they meet at a point, are on a straight line, or are vertically opposite. I know the steps to find missing angles in any triangles, quadrilaterals and regular polygons. I know the steps to find missing angles on a straight line, around a point, vertically opposite or within a right angle. I know and illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	I can use my knowledge of the positions on the full 4 quadrants to find missing coordinates I can reflect shapes/points across axis using matched points or a mirror I can use a set square and a protractor to accurately draw or measure angles (sometimes within shapes) I can compare and classify shapes into tables, Venn diagrams or Carroll diagrams. I can use a compass to draw a circle.	I can use specific mathematical vocabulary to explain methods, ideas and answers.
	Vocabulary		
	Diameter, radius, circumference Vertically opposite, acute, obtuse, right, reflex Names of 3D shapes: sphere, prism, cone, cube, cuboid, pyramid, tetrahedron, cylinder Classify, compare Axis, x and y, mirror line, symmetry Plot, coordinate, reflect, translate		
	Unit: Statistics	**Weeks: 2 weeks**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**

	I know, interpret and construct pie charts and line graphs and use these to solve problems. I know the steps in order calculate the mean as an average.	I can accurately draw a line graph or pie chart using appropriate equipment. I can find missing data by applying the mean average steps backwards.	I can interpret mathematical language into mathematical procedures (e.g. how many fewer understand as subtraction). I can prove or disprove a mathematical statement. I can break down complex problems into smaller steps and record them logically.
	Vocabulary		
	Pie chart, sector Line graph, axis Continuous numerical data Average, mean Data		
	Unit: Algebra	**Weeks: 1 week**	**Term: Spring**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	I know the role of letters within algebra and the associated notation i.e. n, 3n or n^2 I know that linear number sequences have equal steps associated with one of the four operations I know how to express missing number problems algebraically using letters	I can apply a given, simple formula to solve a problem. I.e. if n = 40, what is 3n? I can find a missing number within a sequence, generate it or spot a pattern to decide what an nth term would be I can find pairs of numbers that satisfy an equation with two unknowns. (see trial and error in next section) I can enumerate possibilities of combinations of two variables. (for example, use of factor pairs)	I can find more than 1 answer to a given problem, present answers logically and understand when all possibilities have been found from application of knowledge (e.g. number bonds, factor pairs). I can use a trial and error method to solve a problem
	Vocabulary		
	Sequence, linear, extend Formula, formulae Algebra Pattern Equation Balance All possibilities Plug in		
	Unit: revision of written calculations	**Weeks: 1**	**Term: Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See above unit from Autumn for objectives, vocabulary, teaching points and problem solving		

	Unit: Revision of fractions decimals and percentages	**Weeks: 1 week**	**Term: Spring 2**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See above unit from Autumn for objectives, vocabulary, teaching points and problem solving		
	Unit: Revision of ratio and proportion	**Weeks: 1 week or as needed**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See above unit from Autumn for objectives, vocabulary, teaching points and problem solving		
	Unit: Revision of measures	**Weeks: 1 week or as needed**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See above unit from Autumn for objectives, vocabulary, teaching points and problem solving		
	Unit: Revision of geometry	**Weeks: 1 week or as needed**	**Term: Summer 1**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	See above unit from Autumn for objectives, vocabulary, teaching points and problem solving		
	Unit: Problem solving, investigations, life skills including money and geography links.	**Weeks: 1 week**	**Term: Summer POST SATs**
	Knowledge: fluency	**Skills: fluency**	**Skills: reasoning and problem solving**
	Objectives taken from above objectives in autumn and summer		