



Darley Dene Primary School - Maths Progression

Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value							
<p>Match number shapes.</p> <p>Subitising, counting, matching and composition of 1-6.</p> <p>Subitising dice patterns 1- 6.</p> <p>Link numeral and amounts 1- 6.</p>	<p>Find, sunrise and represent 1, 2 and 3.</p> <p>Composition of 1, 2 and 3.</p> <p>Find, subitise, represent and composition of 4 and 5.</p> <p>Composition of 1–5.</p> <p>Count objects, actions and sounds.</p> <p>Count beyond ten.</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <p>Count and read numbers to 100 in numerals.</p> <p>Count and write numbers to 100 in numerals.</p>	<p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</p> <p>Recognise the place value of each digit in a two-digit number (tens, ones).</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</p> <p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p> <p>Compare and order numbers up to 1000.</p>	<p>Count in multiples of 6, 7, 9, 25 and 1000.</p> <p>Find 1000 more or less than a given number.</p> <p>Count backwards through zero to include negative numbers.</p>	<p>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit e.g. what is the value of the '7' in 276,541?</p>	<p>Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.</p> <p>Round any whole number to a required degree of accuracy.</p> <p>Use negative numbers in context, and calculate intervals across zero.</p>

	<p>Explore the composition of numbers to 10.</p> <p>Link the number symbol (numeral) with its cardinal number value.</p> <p>Compare numbers.</p> <p><i>Count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.</i></p>	<p>Count in multiples of twos, fives and tens from 0.</p> <p>Identify one more and one less of a given number.</p> <p>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.</p> <p>Read and write numbers from 1 to 20 in numerals.</p>	<p>Identify, represent and estimate numbers using different representations, including the number line.</p> <p>Compare and order numbers from 0 up to 100; use <, > and = signs.</p> <p>Read and write numbers to at least 100 in numerals.</p> <p>Read and write numbers to at least 100 in words.</p> <p>Use place value and number facts to solve problems.</p>	<p>Identify, represent and estimate numbers using different representations</p> <p>Read and write numbers up to 1000 in numerals.</p> <p>Read and write numbers up to 1000 in words.</p> <p>Solve number problems and practical problems involving.</p>	<p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p> <p>Order and compare numbers beyond 1000.</p> <p>Identify, represent and estimate numbers using different representations including measures.</p> <p>Round any number to the nearest 10, 100 or 1000.</p>	<p>Find the difference between the largest and smallest whole numbers that can be made from using three digits.</p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</p>	<p>Solve number and practical problems that involve ordering and comparing numbers to 10 000 000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero. Demonstrate an understanding of place value including decimals e.g. $28.13 = 28 + ? + 0.03$.</p>
--	--	---	--	---	--	---	--

		<p>Read and write numbers from 1 to 20 in words.</p> <p>Count in twos, fives and tens to solve problems e.g. count the number of chairs in a diagram when the chairs are organised in 7 rows of 5 by counting in fives.</p> <p>Partition and combine numbers using apparatus if required e.g. partition 76 into tens and ones; combine 6 tens and 4 ones.</p>	<p>Partition two-digit numbers into different combinations of tens and ones using apparatus if needed e.g. 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones. Use reasoning about numbers and relationships to solve more complex problems and explain his/her thinking e.g. $29 + 17 = 15 + 4 + ?$; 'Together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc.</p>		<p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers.</p> <p>Read Roman numerals to 100 (1 to C) and know that over time, the numeral system changed to include the concept of zero and place value.</p>	<p>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</p> <p>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</p>	
--	--	---	--	--	---	--	--

			Recall the multiples of 10 below and above any given 2 digit number e.g. say that for 67 the multiples are 60 and 70.			<p>Solve number problems and practical problems that involve ordering and comparing numbers to 1 000 000, counting forwards or backwards in steps, interpreting negative numbers and rounding.</p> <p>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p>	
--	--	--	---	--	--	--	--

Number Vocabulary

- One, two, three to twenty and beyond, zero, none
- Count on/up/to/from/down, before, after, more, less, many, few, fewer, fewest, smaller, smallest
- Equal to, the same as odd, even
- Digit, numeral, compare, order, size, value, between, halfway, between, subitise
- Greater, lesser, pair
- Ones, tens, ten more/less, figure(s), integers
- In order, a different order, above, below
- Numbers to one hundred, hundreds
- Partition, recombine hundred more/less
- Numbers to one thousand, tenths, hundredths, decimal (places)
- Round (to nearest) thousand more/less negative integers, count through zero
- Roman numerals (I to C), powers of 10
- Numbers to ten million

Addition and Subtraction

Explore the different pairs of numbers that make up number 3,4,5.

Explore jumping along the number line to find what comes after.

Automatically recall number bonds for numbers 0-5 and some to 10.

Understand the 'one more than/one less than' relationship between consecutive numbers.

Read and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.

Solve problems with addition and subtraction using concrete objects and pictorial representation s, including those involving numbers, quantities and measures.

Add and subtract numbers mentally, including a three-digit number and ones.

Add numbers with up to three digits using the formal method of columnar addition.

Add numbers with up to four digits using the formal method of columnar addition.

Estimate and use inverse operations to check answers to a calculation.

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).

Perform mental calculations with mixed operations to carry out calculations involving the four operations.

<p>Count along the number track and fill in the missing number by identifying the number that comes after the numbers they know.</p> <p>Sequence numerals to 5 by identifying what comes after each number.</p> <p>Jump back along a number track to find the number that comes before a given number.</p> <p>Identify the missing number on a number track by identifying what number comes before a given number.</p>	<p><i>Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.</i></p>	<p>Write mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p> <p>Demonstrate an understanding of the commutative law (e.g. $3 + 2 = 5$, therefore $2 + 3 = 5$).</p> <p>Demonstrate an understanding of inverse relationships involving addition and subtraction (e.g. if $3 + 2 = 5$, then $5 - 2 = 3$).</p>	<p>Solve problems with addition and subtraction applying his/her increasing knowledge of written methods and mental methods where regrouping may be required.</p>	<p>Add and subtract numbers mentally, including a three-digit number and tens.</p> <p>Subtract numbers with up to three digits using the formal method of columnar subtraction.</p> <p>Add and subtract numbers mentally, including a three-digit number and hundreds.</p> <p>Estimate the answer to a calculation and use inverse operations to check answers.</p>	<p>Subtract numbers with up to four digits using the formal method of columnar subtraction.</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>Add and subtract numbers mentally with increasingly large numbers.</p> <p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>Solve multi-step problems in contexts, deciding which operations and methods to use and why e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55; a roll of material is 6m long: how much is left when 5 pieces of 1.15m are cut from the roll?; a bottle of drink is 1.5 litres, how many cups of 175ml can be filled from the bottle, and how much drink is left?.</p> <p>Solve problems involving addition and subtraction.</p>
---	---	---	---	---	--	---	---

<p>Sequence numerals by counting backwards along a number line and identifying what comes before.</p> <p>Count how many objects there are in a set and identify if there are enough of each object for everyone.</p> <p>Work out what number is represented by different counting cards and then sequence them.</p>		<p>Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. $6 + 4 = 10$, therefore $4 + 6 = 10$ and $10 - 6 = 4$).</p> <p>Represent and use number bonds within 20.</p> <p>Represent and use subtraction facts within 20.</p> <p>Add one-digit and two-digit numbers to 20, including zero.</p>	<p>Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If $7 + 3 = 10$, then $17 + 3 = 20$; if $7 - 3 = 4$, then $17 - 3 = 14$; leading to if $14 + 3 = 17$, then $3 + 14 = 17$, $17 - 14 = 3$ and $17 - 3 = 14$).</p>	<p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>			<p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>
---	--	--	--	---	--	--	---

		<p>Subtract one-digit and two-digit numbers to 20, including zero.</p> <p>Solve one-step problems that involve addition, subtraction and missing numbers using concrete objects and pictorial representations.</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.</p> <p>Add and subtract numbers where no regrouping is required, using concrete objects, pictorial representations, and mentally, including a two-digit number and ones.</p>				
--	--	--	---	--	--	--	--

			<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including a two-digit number and tens.</p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including two two-digit numbers.</p>				
--	--	--	---	--	--	--	--

			<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including adding three one- digit numbers.</p> <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</p>				
--	--	--	--	--	--	--	--

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Recall doubles and halves to 20 e.g. knowing that double 2 is 4, double 5 is 10 and half of 18 is 9.

Use estimation to check that his/her answers to a calculation are reasonable e.g. knowing that $48 + 35$ will be less than

			100. Solve missing number problems using addition <i>and</i> <i>subtraction</i>				
--	--	--	--	--	--	--	--

Addition and Subtraction Vocabulary

- Number line, add, more, plus, make, sum, total, altogether
- Double, half, halve, equals, is the same (including equals sign)
- How many more to make...? How many more is there? How much more is...?
- Subtract, take away, minus, number bonds, inverse
- Near doubles, difference between
- How many fewer is...than...? How much less is...?
- Column addition and subtraction
- Efficient written method, order of operations
- Commutative

Multiplication and Division

		<p>Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p> <p>Solve one-step problems involving division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p>	<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs.</p>	<p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</p> <p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that he/she knows, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p>	<p>Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>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.</p> <p>Recognise and use factor pairs and commutativity in mental calculations.</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</p>	<p>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</p>	<p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</p> <p>Divide numbers up to 4 digits by a two-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.</p>
--	--	---	--	--	--	---	---

			<p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</p> <p>Solve problems involving multiplication and division, using concrete materials and mental methods.</p>	<p>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</p>	<p>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</p>	<p>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</p> <p>Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.</p>	<p>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.</p> <p>Perform mental calculations, including with mixed operations and large numbers.</p> <p>Identify common factors, common multiples and prime numbers.</p> <p>Use his/her knowledge of the order of operations to carry out calculations involving the four operations.</p>
--	--	--	---	---	--	--	---

			<p>Solve problems involving multiplication and division, using arrays, repeated addition and multiplication and division facts, including problems in contexts e.g. knowing that $2 \times 7 = 14$ and $2 \times 8 = 16$, explains that making pairs of socks from 15 identical socks will give 7 pairs and one sock will be left.</p>			<p>Multiply and divide numbers mentally drawing upon known facts.</p> <p>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.</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</p>	<p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Solve problems involving addition, subtraction, multiplication and division.</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>
--	--	--	--	--	--	---	--

			<p>Use multiplication and division facts for 2, 5 and 10 to make deductions outside known multiplication facts e.g. know that multiples of 5 have one digit of 0 or 5 and use this to reason that 18×5 cannot be 92 as it is not a multiple of 5.</p>			<p>Recognise and use square numbers and the notation for squared (2).</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</p> <p>Recognise and use cube numbers and the notation for cubed (3).</p>	
--	--	--	---	--	--	--	--

			<p>Solve word problems involving multiplication and division with more than one step e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet.</p> <p>Recognise the relationships between addition and subtraction and rewrite addition statements as simplified multiplication statements e.g. $10 + 10 + 10 + 5$</p>			<p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</p> <p>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p>	
--	--	--	--	--	--	--	--

			$+ 5 = 3 \times 10 + 2$ $\times 5 = 4 \times 10$				
--	--	--	---	--	--	--	--

Multiplication and Division Vocabulary

- Odd, even, double, halve, share, share equally, group in pairs, equal groups of, divide
- Once, twice, three, five times, count in tens (forwards from/ back- wards from)
- How many times? Lots of, groups of
- Multiple of, times, multiply, multiply by, repeated addition, array, row, column
- Group in twos, threes, etc, divided
- Product, multiples of four, eight, fifty and one hundred
- Scale up, multiplication facts (up to 12x12) Division facts
- Inverse, derive, factor pairs
- Composite numbers, prime number, prime factors, square number, cubed number
- Formal written method Order of operations
- Common factors, common multiples - highest and lowest

Fractions

		<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>	<p>Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity and demonstrate understanding that all parts must be equal parts of the whole.</p> <p>Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.</p> <p>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p>	<p>Recognise and show, using diagrams, families of common equivalent fractions.</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p>	<p>Compare and order fractions whose denominators are all multiples of the same number.</p> <p>Identify and name equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</p> <p>Write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</p>	<p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>Compare and order fractions, including fractions > 1.</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$.</p>
--	--	---	---	--	--	---	---

				<p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators. Add fractions with the same denominator within one whole e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$.</p> <p>Subtract fractions with the same denominator within one whole e.g. $\frac{6}{7} - \frac{1}{7} = \frac{5}{7}$.</p>	<p>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.</p> <p>Add and subtract fractions with the same denominator.</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths.</p>	<p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$.</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number.</p>	<p>Divide proper fractions by whole numbers e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$.</p> <p>Associate a fraction with division and calculate decimal equivalents e.g. know that 7 divided by 21 is the same as $\frac{7}{21}$ and that this is equal to $\frac{1}{3}$ and e.g. 0.375 is equivalent to $\frac{3}{8}$.</p>
--	--	--	--	--	--	---	--

				<p>Compare and order unit fractions, and fractions with the same denominators.</p> <p>Solve fraction problems.</p> <p>Record $\frac{1}{10}$ as 0.1, $\frac{3}{10}$ as 0.3 etc.</p>	<p>Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$.</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.</p> <p>Round decimals with one decimal place to the nearest whole number.</p>	<p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>Read and write decimal numbers as fractions e.g. $0.71 = \frac{71}{100}$, $8.09 = 8 + \frac{9}{100}$.</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place.</p>	<p>Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers.</p> <p>Use written division methods in cases where the answer has up to two decimal places.</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy.</p>
--	--	--	--	--	--	--	---

					<p>Compare numbers with the same number of decimal places up to two decimal places.</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>Read, write, order and compare numbers with up to three decimal places.</p> <p>Solve problems involving number up to three decimal places.</p> <p>Recognise 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.</p>	<p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts e.g. one piece of cake that has been cut into 5 equal slices can be expressed as $\frac{1}{5}$ or 0.2 or 20% of the whole cake.</p>
--	--	--	--	--	--	---	---

						<p>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.</p>	
--	--	--	--	--	--	--	--

Fraction Vocabulary

- Whole, equal, one half, parts
- Equal parts, four equal parts, two halves
- A quarter, two quarters
- Three quarters, one third, a third, equivalence, equivalent
- Numerator, denominator
- Unit fraction, non-unit fraction, compare and order
- Tenths, decimals
- Equivalent decimals and fractions, proper fractions, improper fractions, mixed numbers
- Percentage, half, quarter, fifth, two fifths, four fifths
- Ratio, proportion, degree of accuracy, simplify
- Like and unlike, divide, shaded, add.

Measurement							
<p>Match the same size. Sort by size and shape.</p> <p>Compare the height of different objects using the word tall or short.</p> <p>Compare the length of different objects using the word long or short.</p> <p>Compare the height or length of different objects using the words long or tall and short.</p> <p>Introduced to balance scales. They explore what happens when they put different objects in them. They hear the words heavier and lighter.</p>	<p>Compare length, weight and capacity.</p> <p>My day and night.</p> <p><i>Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.</i></p>	<p>Compare, describe and solve practical problems for lengths and heights e.g. long/short, longer/shorter, tall/ short, double/half.</p> <p>Compare, describe and solve practical problems for mass/weight e.g. heavy/light, heavier than, lighter than.</p>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =.</p>	<p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>Measure the perimeter of simple 2-D shapes.</p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <p>Tell the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p>	<p>Convert between different units of measure e.g. kilometre to metre; hour to minute.</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.</p> <p>Find the area of rectilinear shapes by counting squares.</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence.</p>	<p>Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p>	<p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p> <p>Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.</p>

<p>Use the balance scales again but this time they say which object is heavier and which is lighter.</p> <p>Explore containers that are full or empty, both practically and pictorially.</p> <p>Explore containers that are nearly full or nearly empty.</p> <p>Compare the capacity of different containers by directly pouring from one to the other.</p> <p>Place an object on or under a chair, a table.</p> <p>Explore whether an object is in or out of a basket, bag.</p>		<p>Compare, describe and solve practical problems for capacity and volume e.g. full/empty, more than, less than, half, half full, quarter.</p> <p>Compare, describe and solve practical problems for time e.g. quicker, slower, earlier, later.</p> <p>Measure and begin to record mass/weight.</p> <p>Recognise and know the value of different denominations of coins and notes.</p>	<p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>Find different combinations of coins that equal the same amounts of money.</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</p> <p>Compare and sequence intervals of time.</p>	<p>Write the time using an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p> <p>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m.morning, afternoon, noon and midnight.</p>	<p>Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>	<p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</p> <p>Calculate and compare the area of rectangles (including squares), and include standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.</p>	<p>Convert between miles and kilometres.</p> <p>Recognise that shapes with the same areas can have different perimeters and vice versa.</p> <p>Recognise when it is possible to use formulae for area and volume of shapes.</p> <p>Calculate the area of parallelograms and triangles.</p>
--	--	--	--	--	--	---	--

<p>Explore whether the gingerbread man is in front of or behind different animals.</p> <p>Children look at two sets of objects and say which set has more than/fewer than.</p> <p>Describe patterns made up of 2-D and 3-D shapes.</p>			<p>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.</p> <p>Remember the number of minutes in an hour and the number of hours in a day.</p> <p>Read scales in divisions of ones, twos, fives and tens.</p> <p>Read scales where not all numbers on the scale are given and estimate points in between.</p>	<p>Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>Compare durations of events e.g. to calculate the time taken by particular events or tasks.</p>		<p>Estimate volume e.g. using 1 cm^3 blocks to build cuboids (including cubes) and capacity e.g. using water.</p> <p>Solve problems involving converting between units of time.</p> <p>Use all four operations to solve problems involving measure e.g. length, mass, volume, money using decimal notation, including scaling.</p>	<p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units e.g. mm^3 and km^3.</p>
--	--	--	--	--	--	--	--

			<p>Read the time on a clock to the nearest 15 minutes.</p> <p>Find different combinations of coins that equal the same amounts of money.</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p>				
--	--	--	---	--	--	--	--

Measurement Vocabulary

- Full, half, empty, holds, container, weigh, weighs, balance
- Heavy, heavier, heaviest, light, light- er, lightest, scales, time
- Days of the week / seasons, days, week, month, year, weekend, birthday, holiday
- Times of the day eg morning, today, yesterday, tomorrow, before, after, next, last
- Quickest, fastest, slowest, clock
- Once, first, second, third, estimate
- Too many, too few, length, height
- Longer, longest, shorter, shortest, taller, tallest, higher, highest, money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change
- How much? How many? Total

- Midnight, midday, now, soon, early, late
- Quick, quicker, quickly, fast, slow, slower
- Old, older, oldest, new, newer, new- est
- Takes longer, takes less time Hour, o'clock, half past Watch, hands
- How long ago? How long will it be/take to...? How often?
- Always, never, often, sometimes, usually
- Close to, about the same as, just over, just under, (not) enough, Width, depth
- Long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin
- Far, near, close
- Metre, ruler, metre stick
- Costs more/less, dear(er), cheaper, costs the same as
- Quarter past/to m/km, g/kg, ml/l
- Temperature (degrees) Leap year
- Twelve hour/twenty-four hour clock Roman numerals I to XIII
- Convert, volume, imperial units, metric units
- money, coin, penny, pence, pound, price, cost, buy, sell spend, spent, pay, change, notes.

Geometry

Recognise colours. Recognise matching objects. Recognise and create matching towers. Match the same prints. Sort by colour, shape, size. Sorting what do you notice? Sorting guess my rule?	Identify and compare circles and triangles. Identify and name shapes with 4 sides. Combine shapes with 4 sides. Shapes in the environment.	Recognise and name common 2-D shapes e.g. rectangles (including squares), circles and triangles.	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.	Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets.
---	---	--	---	--	---	---	---

<p>Patterns - movement, outdoor, ABC.</p> <p>Recognise triangles, squares and rectangles.</p> <p>Recognise pentagons.</p> <p>Identify circles and they begin to learn some properties of a circle, triangle, rectangle, square.</p> <p>Identify cubes and cuboids and begin to talk about some of their properties.</p> <p>Recognise cylinders and begin to talk about some of their properties.</p> <p>Recognise spheres and begin to talk about some of their properties.</p>	<p>Match pictures and objects.</p> <p>Identify a set Sort objects to a type.</p> <p>Explore sorting techniques.</p> <p>Create sorting rules.</p> <p>Create, explore and continue simple patterns. Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p>	<p>Recognise and name common 3-D shapes e.g. cuboids (including cubes), pyramids and spheres.</p> <p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p>	<p>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.</p> <p>Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres).</p>	<p>Recognise angles as a property of shape or a description of a turn.</p> <p>Identify right angles and identify whether other angles are greater or less than a right angle.</p> <p>Recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn.</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p>Identify acute and obtuse angles and compare and order angles up to two right angles by size.</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations.</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry.</p> <p>Begin to recognise where angles are greater than two right angles. Know the term straight angle referring to two right angles together.</p>	<p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</p> <p>Draw given angles, and measure them in degrees ($^{\circ}$). Identify angles at a point and one whole turn (total 360°).</p> <p>Identify angles at a point on a straight line and $1/2$ a turn (total 180°).</p> <p>Identify other multiples of 90°.</p>	<p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>Describe positions on the full coordinate grid (all four quadrants).</p>
---	--	---	--	---	---	---	---

	<p>Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.</p> <p><i>They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.</i></p>		<p>Identify 2-D shapes on the surface of 3-D shapes e.g. a circle on a cylinder and a triangle on a pyramid.</p>		<p>Describe positions on a 2-D grid as coordinates in the first quadrant.</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down.</p> <p>Plot specified points and draw sides to complete a given polygon.</p>	<p>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p>	<p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axis.</p>
--	--	--	--	--	---	--	--

			Compare and sort common 2-D and 3-D shapes and everyday objects describing similarities and differences e.g. find 2 different 2-D shapes that only have one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices and describe what is different about them.				
--	--	--	---	--	--	--	--

			Order and arrange combinations of mathematical objects in patterns and sequences.				
--	--	--	---	--	--	--	--

			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).				
--	--	--	--	--	--	--	--

Geometry Vocabulary

Position and Direction

- Over, under, underneath, above, below, top, bottom, side, on, in, outside, inside In front, behind, front, back, before, after, beside, next to, middle, up, down, forwards, backwards, sideways, close, far, through, towards, away from, side, roll, turn.
- Position, around, opposite, apart, between, edge, centre, direction, journey, left, right, across, near, along to, from, movement, quarter turn, whole turn, half turn stretch, bend, rotation

- Clock, clockwise, anticlockwise, straight line, ninety degree turn, right angle
- Greater/less than ninety degrees, orientation (same orientation, different orientation), coordinates, translation, quadrant x-axis, y-axis, perimeter and area.
- Dimensions, four quadrants (for coordinates)

Properties of Shape

- Sort, cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square, rectangle, pentagon, hexagon, octagon, shape, flat, curved, straight, round, solid, corner, vertex, face, side, make, build, draw.
- Prism, square based pyramid, triangular based pyramid, vertices, net.
- Group, hollow, point, pointed edge, size, bigger, larger, smaller, symmetrical, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern.
- Horizontal, vertical, perpendicular and parallel lines, quadrilaterals, triangles, right angle, acute and obtuse angles.
- Regular and irregular polygons, reflex angle, vertically opposite (angles), circumference, radius, diameter.

Statistics, Ratio, Proportion and Algebra

			Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	Interpret and present data using bar charts, pictograms and tables.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Solve comparison, sum and difference problems using information presented in a line graph.	Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.
--	--	--	--	---	---	--	--

			<p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>Ask and answer questions about totalling and comparing categorical data.</p>	<p>Solve one-step and two-step questions e.g. 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.</p>	<p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>	<p>Complete, read and interpret information in tables, including timetables.</p>	<p>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts e.g. find $\frac{7}{9}$ of 108. Solve problems involving the calculation of percentages e.g. of measures, and such as 15% of 360 and the use of percentages for comparison.</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found.</p>
--	--	--	---	--	--	--	--

							<p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p> <p>Use simple formulae e.g. perimeter of a rectangle or area of a triangle.</p> <p>Generate and describe linear number sequences.</p> <p>Express missing number problems algebraically.</p> <p>Find pairs of numbers that satisfy an equation with two unknowns.</p>
--	--	--	--	--	--	--	---

							Enumerate possibilities of combinations of two variables.
Statistics, Ratio, Proportion and Algebra Vocabulary <ul style="list-style-type: none"> Count, tally, sort, vote, graph, block graph, pictogram, represent, group, set, list, table, label, title. Most popular, most common, least popular, least common. Chart, bar chart, frequency table, carroll diagram, Venn diagram, axis, axes, diagram, continuous data, line graph Mean, pie chart, construct. 							
ALGEBRA <ul style="list-style-type: none"> Formula, linear number sequence, substitute, variables, symbol, known values 							
General and Problem Solving Vocabulary							
<ul style="list-style-type: none"> Place, fit, arrange, rearrange, change, change over, split, separate, carry on, continue, repeat, choose, collect Record, trace, copy, complete, finish, end, represent, estimate Fill in, shade, colour, cross, draw, draw a line between, join (up), arrow, answer, check, same number, different number, missing number Number facts, number sentence, calculation Dienes, rods, cubes, counters, numi- con, best way, another way Bar model, part-whole model method, strategy, efficient Find the unknown 							