

End of Year Expectations

Maths

Year 3

Please note that the objectives are not necessarily taught in the order listed below.

Learning Objectives		Additional information	
<p>The National Curriculum for mathematics aims to ensure that all pupils:</p> <ul style="list-style-type: none"> • <i>Become fluent in the fundamentals of mathematics, so that pupils have conceptual understanding and can recall and apply their knowledge rapidly and accurately to problems</i> • <i>Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument or proof using mathematical language</i> • <i>Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.</i> 			
Number and Place Value			
<p>Identify, represent and estimate numbers using different representations. Find 10 or 100 more or less than a given number; recognise the place value of each digit in a three digit number (hundreds, tens, ones). Compare and order numbers up to 1000 Read and write numbers up to 1000 in numerals and in words. Solve number problems and practical problems involving these ideas. Count from 0 in multiples of 50 and 100</p>		<p>The value of a digit is determined by its position in a number. Place value is based on unitising, treating a group of things as one 'unit'. This generalises to 3 units + 2 units = 5 units (where the units are the same size).</p>	
Addition and Subtraction			
<p>Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Estimate the answer to a calculation and use inverse operations to check answers. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>		<p>Relating numbers to 5 and 10 helps develop knowledge of the number bonds within 20. For example, given $8 + 7$, thinking of 7 as $2 + 5$, and adding the 2 and 8 to make 10, then the 5 to 15. This should then be applied when calculating with larger numbers. Subtraction bonds can be thought of in terms of addition: for example, in answering $15 - 8$, thinking what needs to be added to 8 to make 15. Counting on for subtraction is a useful strategy that can also be applied to larger numbers.</p>	
Multiplication and Division			
<p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</p>		<p>It is important for children not just to be able to chant their multiplication tables but also to understand what the facts in them mean, to be able to use these facts to figure out others and to use in problems. It is also important for children to be able to link facts within the tables (e.g. $5 \times$ is half of $10 \times$). They should understand what multiplication means, see division as both grouping and sharing, and see division as the inverse of multiplication.</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 objectives. Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p>	
Fractions	
<p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. 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. Recognise and show, using diagrams, equivalent fractions with small denominators. Add and subtract fractions with the same denominator within one whole. Compare and order unit fractions, and fractions with the same denominators. Solve problems that involve all of the above.</p>	<p>Fractions are equal parts of a whole. Equal parts of shapes do not need to be congruent but need to be equal in area. Decimal fractions are linked to other fractions. The number line is a useful representation that helps children to think about fractions as numbers.</p>
Measurements	
<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 and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. 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. Know the number of seconds in a minute and the number of days in each month, year and leap year. Compare durations of events [for example to calculate the time taken by particular events or tasks].</p> <p>Continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm).</p>	<p>Developing benchmarks to support estimation skills is important as pupils become confident in their use of standard measures. The height of a door frame, for example, is approximately 2 metres, and a bag of sugar weighs approximately 1 kilogram.</p>

Geometry	
<p>Recognise angles as a property of shape or a description of a turn. Identify right angles, recognise that two right angles make a half-term, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Draw 2-D shapes and make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them.</p>	<p>During this year there is an increasing range of shapes that pupils are familiar with. The introduction of symmetrical and non-symmetrical polygons and the requirement that pupils should be able to draw them will give rise to discussions about lengths of sides and sizes of angles. Pupils need to appreciate these features as properties of shapes as well as the number of sides and vertices. Pupils recognise that angles are about the amount of turn – the lengths of the lines used to represent angles do not affect the size of the angle. Pupils recognise that relationships are at the heart of properties of shapes, not particular measurements. For example, the opposite sides of any rectangle will always be equal, not that rectangles have a pair of long sides and a pair of short sides.</p>
Statistics	
<p>Interpret and present data using bar charts, pictograms and tables. Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables.</p>	<p>Data needs to be collected with a question or purpose in mind. Tally charts are used to collect data over time (cars passing the school, birds on the bird table). They can also be used to keep track of counting.</p>