

End of Year Expectations

Maths

Year 2

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

The National Curriculum for mathematics aims to ensure that all pupils:

- *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*
- *Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument or proof using mathematical language*
- *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.*

Learning Objectives	Additional information
Number and Place Value	
<ul style="list-style-type: none"> • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • recognise the place value of each digit in a two-digit number (tens, ones) • identify, represent and estimate numbers using different representations, including the number line • compare and order numbers from 0 up to 100; use <, > and = signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems 	<ul style="list-style-type: none"> Partition numbers into tens and ones. Exchange ones to make tens. Different representations of the same number. Estimate numbers from different representations. Compare numbers by looking at tens and ones. Order numbers by reasoning about their value. Find numbers that satisfy simple criteria. Use place value representations to prove solutions.
Addition and Subtraction	
<ul style="list-style-type: none"> • Recall and use addition and subtraction facts to 20 and derive and use related facts up to 100. • Show that the addition of 2 numbers can be done in any order and subtraction from one number to another cannot. • Add and subtract number using concrete objects, pictorial representations, and mentally, including : a 2 digit number and ones; a 2 digit number and tens; 2 x 2 digit numbers; adding 3 x 1 digit numbers. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. • Solve problems with addition and subtraction: using concrete objects and pictorial representation, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods. 	<ul style="list-style-type: none"> Two bonds to ten make bonds to twenty. Adding ones to make multiples of ten. Adding tens and ones to make multiples of ten. Making equal values using ones. Making equal values using tens. Making equal values using tens and ones. Adding more than one thing at a time. Subtracting more than one thing at a time. Adding and subtracting at the same time. Part-part-whole representations. Turning part-whole models into number sentences. Thinking about additive equations. Interpreting what number lines show. To apply understanding of addition and subtraction to worded questions.
Multiplication and Division	
<ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within multiplication tables and write them using the multiplication, division 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. 	<ul style="list-style-type: none"> Recognising patterns in multiples of 2. Writing mathematical statements for the two times table. Recognising patterns in multiples of 5. Writing mathematical statements for the five times table. Recognising patterns in multiples of 10. Writing mathematical statements for the ten times table. Application of understanding of 2s, 5s and 10s number facts. Making equal groups into arrays. Making multiplication statements from arrays. Making division statements from arrays. Using arrays to solve multiplication and division problems.

<ul style="list-style-type: none"> Show that the multiplication of two numbers can be done in any order and division of one number by another cannot. 	
Fractions	
<ul style="list-style-type: none"> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. 	<p>Investigate and understand that fractions are equal parts of a whole.</p> <p>Investigating and recognising $\frac{1}{2}$ and $\frac{1}{4}$ as parts of a whole.</p> <p>Recognising and counting quarters up to 1 whole. Introduce the meaning of numerator and denominator.</p> <p>Identifying the numerator and denominator in different pictures of fractions (including $\frac{1}{2}$, $\frac{2}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$).</p> <p>Finding the complements to make 1 whole e.g. $\frac{1}{3}$ plus another $\frac{2}{3}$ makes a whole.</p> <p>Recognising and equivalence of $\frac{2}{2}$, $\frac{3}{3}$ and $\frac{4}{4}$.</p> <p>Recognising and investigating the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$.</p> <p>Comparing the value of fractions with the same denominator but different numerators.</p> <p>Comparing and ordering fractions with different denominators using images.</p> <p>Counting in halves over the value of 1 (counting wholes and parts).</p> <p>Counting in quarters over the value of 1 (counting wholes and parts).</p> <p>Counting in thirds over the value of 1 (counting wholes and parts)</p> <p>Finding half of a quantity</p> <p>Finding a third of a quantity</p> <p>Finding a quarter of a quantity</p> <p>Sharing 1 whole between 2, 3 or 4 then moving on to sharing multiple objects to represent "the whole," between 2, 3 or 4.</p>
Measurements	
<ul style="list-style-type: none"> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times know the number of minutes in an hour and the number of hours in a day. 	<p>Reading scales to measure length.</p> <p>Measure lengths using scales.</p> <p>Estimating lengths using m/cm.</p> <p>Reading scales to measure mass.</p> <p>Using the language of "greater than" and "less than"</p> <p>Comparing and ordering measures.</p> <p>To understand the symbols for pounds (£) and pence (p) and learn how to write amounts of money when shown single images of coins or notes.</p> <p>To add pictures of coins and notes to make a total.</p> <p>Comparing the value of different groups of coins.</p> <p>Exploring different combinations of coins to make the same total</p> <p>To exchange a larger value coin for the same value in smaller value coins.</p> <p>Calculating total amounts to pay in a real life context supported by pictures and bar models.</p> <p>Calculating change in a real life context supported by pictures and bar models.</p> <p>Applying understanding of money to reasoning and problem solving activities.</p>
Geometry – Properties of Shapes	

<ul style="list-style-type: none"> including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify and describe the properties of 3-D shapes, 	<p>Describing and sorting 2D shapes according to the number of sides. Introduce the terms, polygon and quadrilateral and shape names.</p> <p>Describing and sorting 2D shapes according to the number of vertices</p> <p>Learning to draw 2D shapes on squared or square dot paper. Explore lines of symmetry in 2D shapes.</p> <p>Understanding different ways of sorting and comparing 2D shapes.</p> <p>Investigating, describing and continuing sequences of 2D shapes</p> <p>Creating and describing sequences of 2D shapes</p> <p>Recognise and explore 3D shapes: Spheres, cuboids, cubes, cylinders and pyramids</p> <p>Describing 3D shapes according to faces and vertices.</p> <p>Understanding different ways of sorting and comparing 3D shapes.</p> <p>Naming the 2D shapes forming the faces on 3D shapes.</p> <p>Creating and describing sequences of 3D shapes.</p>
Geometry – Position and Direction	
<ul style="list-style-type: none"> order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement, including 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 anticlockwise). 	
Statistics	
<ul style="list-style-type: none"> interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data. 	