

MATHEMATICS Year 6

All children will access age related curriculum objectives	All children will:	Children, who grasp concepts rapidly, may:
Number Place Value		
Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.	<i>I can work with numbers up to 10 000 000 and know what each digit represents.</i>	<i>I can work with numbers up to 10 000 000 confidently and know what each digit represents.</i>
Round any whole number to a required degree of accuracy.	<i>I can round a whole number as requested - for example to the nearest 10 or 1000 or 100000.</i>	<i>I can round a whole number as requested - for example to the nearest 10 or 1000 or 100000 using different measures and contexts.</i>
Use negative numbers in context, and calculate intervals across zero.	<i>I understand and use negative numbers in my work, for example - working out how much is between -7 and +8.</i>	<i>I understand and use negative numbers in my work, for example - working out how much is between -17 and +8 to solve real-life problems.</i>
Solve number and practical problems that involve large numbers, rounding and negative numbers.	<i>I can solve number and practical problems that involve large numbers, rounding and negative numbers.</i>	<i>I can solve more complex number and practical problems that involve large numbers, rounding and negative numbers independently.</i>
Multiplication Division		
Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.	<i>I can multiply 4 digit numbers by a two-digit number (for example 4307 x 34) using the written method of long multiplication.</i>	<i>I can multiply 4 digit numbers by a two-digit number efficiently (for example 4307 x 34) using the written method of long multiplication across a range of contexts.</i>
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.	<i>I can divide 4 digit numbers by a two-digit number using the written method of long division - and tell you the remainder.</i>	<i>I can divide 4 digit numbers by a two-digit number efficiently using the written method of long division - and tell you the remainder.</i>
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.	<i>I can choose to divide 4 digit numbers by a two-digit number using the written method of short division if this is possible.</i>	<i>I can efficiently divide 4 digit numbers by a two-digit number using the written method of short division if this is possible.</i>
Perform mental calculations, including with mixed operations and large numbers.	<i>I can multiply, divide, add and subtract large numbers in my head.</i>	<i>I can rapidly multiply, divide, add and subtract large numbers in my head.</i>
Identify common factors, common multiples and prime numbers.	<i>I identify common factors, common multiples and prime numbers.</i>	<i>I identify all of the common factors, common multiples and prime numbers.</i>
Use their knowledge of the order of operations to carry out calculations	<i>I know that addition, subtraction, multiplication and</i>	<i>I know why addition, subtraction, multiplication and division should be</i>

Bunbury Aldersey C. of E. Primary School's Mathematics Curriculum 2017-18

involving the four operations.	<i>division should be carried out in a specific order when looking at problems.</i>	<i>carried out in a specific order when looking at problems in different contexts.</i>
Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	<i>I can solve addition and subtraction multi-step problems, deciding where to add or subtract.</i>	<i>I can solve addition and subtraction multi-step problems across different subjects or themes, choosing the most efficient methods.</i>
Solve problems involving addition, subtraction, multiplication and division.	<i>I can solve problems involving addition, subtraction, multiplication and division.</i>	<i>I can solve problems across a range of themes and subjects involving addition, subtraction, multiplication and division.</i>
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	<i>I always estimate my answer before I begin calculating - this helps me to check at the end to make sure I am correct.</i>	<i>I accurately estimate my answer before I begin calculating - this helps me to check at the end to make sure I am correct.</i>
Fractions		
Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.	<i>I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination.</i>	<i>I can use common factors to accurately simplify fractions and use common multiples to express fractions in the same denomination when solving problems.</i>
Compare and order fractions, including fractions greater than 1.	<i>I can compare and order fractions, including fractions greater than 1.</i>	<i>I can compare and order fractions, including fractions greater than 1 in a mixture of contexts and measurements.</i>
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	<i>I add and subtract fractions with different denominators and mixed numbers.</i>	<i>I add and subtract fractions with different denominators and mixed numbers to solve real-life problems.</i>
Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $1/4 \times 1/2 = 1/8$].	<i>I can multiply fractions such as $1/4 \times 1/2 = 1/8$.</i>	<i>I can multiply fractions such as $1/6 \times 1/3 = 1/18$ to solve real-life problems.</i>
Divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$].	<i>I know how to divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$].</i>	<i>I know how to divide proper fractions by whole numbers [for example, $1/3 \div 4 = 1/12$] to solve problems.</i>
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $3/8$].	<i>I can change a fraction into a decimal - for example, I can change $3/8$ to 0.375 by dividing 1 by 8 and multiplying by 3.</i>	<i>I can change a fraction into a decimal confidently - for example, I can change $3/8$ to 0.375 by dividing 1 by 8 and multiplying by 3.</i>
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.	<i>I can multiply and divide numbers by 10, 100 and 1000 and know what each digit means up to three decimal places.</i>	<i>I can multiply and divide numbers by 10, 100 and 1000 and know what each digit means up to three decimal places to solve problems and convert measurements.</i>
Multiply one-digit numbers with up to two decimal places by whole numbers.	<i>I can multiply numbers such as 1.45 by a one-digit number - for example 1.45×7.</i>	<i>I can multiply numbers such as 1.45 by a one-digit number - for example 1.45×7 in a range of contexts.</i>
Use written division methods in cases where the answer has up to two	<i>I use written division methods in cases where the</i>	<i>I use written division methods confidently in cases where the answer</i>

Bunbury Aldersey C. of E. Primary School's Mathematics Curriculum 2017-18

decimal places.	<i>answer has up to two decimal places.</i>	<i>has up to two decimal places.</i>
Solve problems which require answers to be rounded to specified degrees of accuracy.	<i>I can solve problems which include rounding to a required accuracy such as the nearest 10, 100 or 10000.</i>	<i>I can solve complex problems which include rounding to a required accuracy such as the nearest 10, 100 or 10000.</i>
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	<i>I know the decimal value, percentage and fraction of a range of values - such as 0.5, 50 per cent and 1/2.</i>	<i>I can quickly recall the decimal value, percentage and fraction of a range of values in context. - such as 0.5, 50 per cent and 1/2.</i>
Ratio		
Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.	<i>I can solve problems about relative sizes (ratio).</i>	<i>I can solve complex problems about relative sizes (ratio).</i>
Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.	<i>I can find the percentage of an amount - such as finding 15 per cent of 360.</i>	<i>I can find the percentage of an amount - such as finding 17 per cent of 360 to solve real-life problems.</i>
Solve problems involving similar shapes where the scale factor is known or can be found.	<i>I can solve similar shape problems.</i>	<i>I can find and use the ratio to solve similar shape problems.</i>
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	<i>I can solve problems about unequal sharing - such as 'I need four eggs and for every egg I need three spoonfuls of flour. How much flour do I need?'</i>	<i>I can solve complex problems about unequal sharing involving fractions - such as 'I need four eggs and for every egg I need two and a half spoonfuls of flour. How much flour do I need?'</i>
Algebra		
Use simple formulae.	<i>I know how to use simple formulae such as $n - 10 = 2$.</i>	<i>I can use formulae confidently to solve problems such as $2n - 10 = 2$.</i>
Generate and describe linear number sequences.	<i>I can create a sequence of numbers that follow a rule.</i>	<i>I can create a sequence of numbers that follow a rule and identify a rule in a given sequence.</i>
Express missing number problems algebraically.	<i>I can use a letter (such as n or x) to show a missing number - such as $10 - x = 5$.</i>	<i>I can use a letters (such as n or x) to show a missing number - such as $10 - x = y + 4$.</i>
Find pairs of numbers that satisfy an equation with two unknowns.	<i>I can find pairs of numbers that satisfy an equation with two unknowns.</i>	<i>I can find all the pairs of numbers that satisfy an equation with two unknowns.</i>
Enumerate possibilities of combinations of two variables.	<i>I can list possible answers to missing numbers such as listing the possible answers of a and b in $a + 6 = b - 10$.</i>	<i>I can list all of the possible answers to missing numbers such as listing the possible answers of a and b in $a + 6 = b - 10$.</i>
Measurement		
Solve problems involving the calculation and conversion of units of	<i>I solve problems about different units of measure with</i>	<i>I solve more complex problems about converting different units of</i>

Bunbury Aldersey C. of E. Primary School's Mathematics Curriculum 2017-18

measure, using decimal notation up to three decimal places where appropriate.	<i>three decimal places.</i>	<i>measure with three decimal places.</i>
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.	<i>I can convert measurements of length, weight, volume and time up to three decimal places in length (for example $0.345\text{kg} = 345\text{g}$).</i>	<i>I can convert measurements of length, weight, volume and time confidently, up to three decimal places in length (for example $0.345\text{kg} = 345\text{g}$).</i>
Convert between miles and kilometres.	<i>I can convert between miles and kilometres.</i>	<i>I can convert between miles and kilometres and use this in different subjects.</i>
Recognise that shapes with the same areas can have different perimeters and vice versa.	<i>I know that even though shapes may have the same area, the perimeter may be different - or a shapes with the same perimeter may have different areas.</i>	<i>I know that even though shapes may have the same area, the perimeter may be different - or a shapes with the same perimeter may have different areas. I can find rules and patterns in the results.</i>
Recognise when it is possible to use formulae for area and volume of shapes.	<i>I can use a formula for area and volume of shapes.</i>	<i>I can use a formula to find the area and volume of compound shapes in mathematical puzzles.</i>
Calculate the area of parallelograms and triangles.	<i>I can calculate the area of parallelograms and triangles.</i>	<i>I can calculate the area of parallelograms and triangles and use this to solve problems.</i>
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 [for example, mm ³ and km ³].	<i>I can work with the volume of cubes and cuboids using cubic centimetres (cm³) and cubic metres (m³), and other units too such as mm³ and km³.</i>	<i>I can solve real-life problems involving volume of cubes and cuboids using cubic centimetres (cm³) and cubic metres (m³), and other units too such as mm³ and km³.</i>
Shape		
Draw 2-D shapes using given dimensions and angles.	<i>I accurately draw 2-D shapes using given dimensions and angles.</i>	<i>I accurately draw 2-D shapes to different scales using given dimensions and angles.</i>
Recognise, describe and build simple 3-D shapes, including making nets.	<i>I can recognise, describe and build 3-D shapes, including making nets.</i>	<i>I can recognise, describe and build 3-D shapes, including making and identifying nets of compound shapes.</i>
Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.	<i>I can classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</i>	<i>I can accurately classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and irregular polygons.</i>
Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	<i>I know the parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</i>	<i>I can solve practical and challenging problems involving the radius, diameter and circumference of circles.</i>

Bunbury Aldersey C. of E. Primary School's Mathematics Curriculum 2017-18

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	<i>I can work with angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</i>	<i>I can work with angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles and use this to solve real-life problems</i>
Position		
Describe positions on the full coordinate grid (all four quadrants).	<i>I can use the four quadrants in a coordinate grid.</i>	<i>I can use the four quadrants in a coordinate grid independently.</i>
Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	<i>I can draw and translate shapes using coordinates or reflect a shape on the grid.</i>	<i>I can draw and translate more complex shapes using coordinates or reflect a shape on the grid.</i>
Statistics		
Interpret and construct pie charts and line graphs and use these to solve problems.	<i>I can use and construct pie charts and line graphs and use these to solve problems.</i>	<i>I can use and construct pie charts and line graph in a range of different subjects and use these to solve problems.</i>
Calculate and interpret the mean as an average..	<i>I can calculate the mean as an average.</i>	<i>I can calculate the mean, median and mode as averages.</i>