



**Subject Overview | Mathematics**  
Zetland Primary School

Year Group: 6

Mathematics Year 6	Autumn	Spring	Summer
<p>The main focus of maths teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.</p> <p>At this stage, pupils should develop their ability to solve a wider range of problems using both written and mental methods of calculation. With this grounding in arithmetic, pupils will learn the language of algebra as a means for solving a variety of problems. In geometry, your child will learn to classify shapes with complex properties and will learn the vocabulary they need to describe them.</p> <p>By the end of Year 6, pupils should be fluent in written methods for all four operations, including long division and multiplication, and in working with fractions, decimals, and percentages. They should be able to read, spell, and pronounce mathematical vocabulary correctly.</p>	<p><b>Place Value</b> – Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. Round any whole number to a required degree of accuracy. Use negative numbers in context, and calculate intervals across zero. Solve number and practical problems that involve all of the above.</p> <p><b>Addition/Subtraction/Multiplication/Division</b> – Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. 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. 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. Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers.</p>	<p><b>Decimals</b> – Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8). Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Multiply one-digit numbers with up to two decimal places by whole numbers. Use written division methods in cases where the answer has up to two decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy. Percentages – Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. 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><b>Algebra</b> – Use simple formulae. Generate and describe linear number sequences.</p>	<p><b>Statistics</b> – Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.</p> <p><b>Properties of shape</b> – Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p><b>Consolidation</b> – The projects have been designed to explore maths in real life contexts, allowing children</p>



	<p>Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p> <p><b>Fractions</b> - Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions <math>&gt;1</math>. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>). Divide proper fractions by whole numbers (e.g. <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>)</p> <p><b>Geometry - Position and Direction</b> - Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>	<p>Express missing number problems algebraically. Find pairs of numbers that satisfy number sentences involving two unknowns. Enumerate all possibilities of combinations of two variables.</p> <p><b>Converting Units</b> - Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. 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 up to three decimal places. Convert between miles and kilometres.</p> <p><b>Perimeter, Area and Volume</b> - Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and extending to other units (e.g. <math>\text{mm}^3</math> and <math>\text{km}^3</math>).</p>	<p>to see how important maths is in all aspects of life. As well as this we have looked to provide cross-curricular links where appropriate, for example, including tasks that develop design and technology skills and geographical knowledge. They also provide a great opportunity to explore and develop enterprise.</p>
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