



ST. PETER'S CE PRIMARY SCHOOL

Mathematics: Long Term Plan-Objective - Year 6

Pupils will follow the Maths - No Problem! Scheme of work for Year 6

<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
<p>In this first unit of Year 6, pupils are refining their knowledge of place value, working with numbers between 1 000 000 and 10 000 000.</p> <p>They begin the unit reading and writing numbers to 10 000 000 using number discs, numerals and words.</p> <p>An additional lesson using an abacus is provided to deepen and extend their sense of number and place value.</p> <p>Pupils are then asked to round and compare numbers to 10 000 000, followed by placing them in order from smallest to greatest.</p> <p>The unit ends with pupils rounding numbers to various values and determining when it is appropriate to round numbers.</p>	<p>During the Spring term, some time will also be spent revising specific methods needed for the SATs Arithmetic Paper and familiarising pupils with the requirements of the SATs Reasoning papers. Pupils will sit these tests during the second week in May.</p>	<p>In this unit, pupils will be exploring how to calculate the area of rectangles, triangles and parallelograms. The unit begins with a review of perimeter and area of rectangles and progresses by consolidating pupils' knowledge of the area of rectangles to support their understanding of how to calculate the area of a parallelogram. This is followed by finding multiple methods for calculating the area of a triangle. The unit ends with finding the area for a parallelogram using the triangle method.</p>
<p>In this unit, pupils will be exploring the 4 operations, in combination and in isolation.</p> <p>The unit begins with lessons on creating and solving expressions involving brackets, exponents, multiplication, division, addition and subtraction. Pupils are then multiplying 3- and 4-digit numbers by 2-digit numbers using number bonds and column multiplication as the key methods.</p> <p>After this, they are estimating the product of multiplication sentences before moving onto division, dividing 3- and 4-digit numbers by 2-digit numbers using a variety of methods, including number bonds and long division.</p> <p>Pupils then begin solving more complex word problems involving multiple operations, including multiplication and division, with bar models being a main heuristic in addition to other pictorial methods.</p> <p>Pupils are then challenged by finding common multiples and then common factors before ending the unit exploring prime numbers.</p>	<p>In this unit, pupils solve complex word problems using the 4 operations and bar model diagrams.</p> <p>To start the unit, pupils learn that making bar models of the same size can be helpful, but that one must remember to change the information in the problem to match.</p> <p>The second lesson reinforces the idea that models of the same size can make solving word problems more simple.</p> <p>In the third lesson, pupils find common representations in each diagram and add or subtract time to solve for a unit's value.</p> <p>The fourth lesson is slightly different in that a traditional bar model will not be helpful. The anchor task requires high-order reasoning and picture drawing.</p> <p>In the last two lessons, pupils create and solve word problems.</p>	<p>In this unit, pupils will be developing their understanding of volume as it relates to cubes and cuboids. At the beginning of the unit, pupils are working with concrete materials to expose the meaning of volume thoroughly. As the unit progresses, pupils are determining the formula for the volume of cubes and cuboids, estimating volumes and calculating total volumes with a formula. By the end of the unit, pupils are solving multi-step word problems related to volume, using division and multiplication.</p>

<p>In this unit pupils will develop their understanding of fractions, focussing on the following skills:</p> <p>Simplifying fractions</p> <p>Ordering and Comparing fractions</p> <p>Adding and subtracting fractions</p> <p>Multiplying fractions</p> <p>Dividing fractions by a whole number</p>	<p>In this unit, pupils will be exploring how to calculate percentage of numbers and quantities.</p> <p>They will be learning about how to solve for percentage change and use percentage to compare amounts.</p> <p>In the first lesson, pupils will be finding the percentage of a whole number. This will involve both division and multiplication skills.</p> <p>They will then move on to finding the percentage of a quantity, measured in amounts such as litres and millilitres.</p> <p>In the third lesson, pupils will be looking at difference and percentage change before finally moving on to using percentage as a way to compare numbers and amounts.</p>	<p>This is the final unit on geometry. In this unit, pupils will be investigating angles on their own, in worded problems and in shapes. The unit begins with pupils looking at vertically opposite angles before they move onto worded problems. They will then look at angles in triangles and quadrilaterals, using that information to complete a lesson on worded problems. Pupils then investigate the parts of a circle before solving worded problems about angles in a circle. Pupils will spend some time drawing quadrilaterals before moving onto triangles. At the end of the unit, pupils will be required to draw the nets of 3-D shapes.</p>
<p>To begin the unit, pupils will read and write decimals using base ten materials before moving on to dividing and multiplying decimals by 1-digit numbers with no regrouping or renaming.</p> <p>Pupils will then be asked to write fractions as decimals using division and pictorial methods before moving on to multiplying fractions that involve some regrouping and renaming by 1-digit numbers.</p> <p>Pupils then look at dividing decimals again, this time with regrouping and renaming required with 1-digit numbers.</p> <p>They then move on to multiplying and dividing decimals by 2-digit numbers, which involves regrouping and renaming, using a variety of methods and strategies, including: number bonds, the worded method, long division and the column method.</p>	<p>In this unit, pupils will be exploring how to calculate percentage of numbers and quantities. They will be learning about how to solve for percentage change and use percentage to compare amounts. In the first lesson, pupils will be finding the percentage of a whole number. This will involve both division and multiplication skills. They will then move on to finding the percentage of a quantity, measured in amounts such as litres and millilitres. In the third lesson, pupils will be looking at difference and percentage change before finally moving on to using percentage as a way to compare numbers and amounts.</p>	<p>In this unit on position and movement, pupils will develop skills including:</p> <p>Showing negative numbers</p> <p>Describing Position</p> <p>Drawing polygons on a co-ordinate grid in four quadrants</p> <p>Describing translations, reflections and movements</p> <p>Using algebra to describe position and movement</p>

<p>In this unit, the focus is on converting units of measure using fractions and decimals.</p> <p>Pupils begin by converting units of length and distance. This is followed by exploring units of mass, volume and time.</p> <p>While most of the unit considers metric conversions, time is challenging as it does not follow multiples of 10, 100 or 1000.</p>	<p>In this unit, pupils will be introduced to the concept of ratio for the first time, focssing on:</p> <p>Comparing quantities</p> <p>Comparing numbers</p> <p>Solving word problems involving ratio</p>	<p>In this unit, pupils will learn to present and interpret information in different ways.</p> <p>Pupils calculate mean in different situations and use the mean to find other information. They then move on to showing information on different types of graph.</p> <p>They revise bar graphs, pictograms and tables, then spend several lessons drawing, reading and interpreting pie charts. Pupils begin with pie charts split into sections of equal size, then quickly move onto pie charts with different fractions of different denominators. In their use of pie charts, pupils use fractions, percentages, angles and algebra.</p> <p>They then focus on line graphs: drawing, reading and interpreting the information in them. Pupils begin with distance/time, then explore a variety of uses for line graphs, including converting units of measurement and currency.</p>
	<p>In this unit, pupils will further develop their skills in algebra, including</p> <p>Describing a pattern</p> <p>Writing algebraic expressions</p> <p>Evaluating algebraic expressions</p> <p>Writing and using formulae</p> <p>Solving equations</p>	<p>This is a short unit on adding and subtracting negative numbers. The first lesson involves recognising patterns that arise when adding and subtracting negative numbers on a number line. The second lesson has pupils developing number stories for equations involving a negative number.</p>