

Moorgate Primary Academy

Year 6 Maths Long Term Overview



Year 6 – Autumn					
<u>Place value within 10,000,000</u>	<u>Four operations (1)</u>	<u>Four operations (2)</u>	<u>Fractions (1)</u>	<u>Fractions (2)</u>	<u>Measure – Imperial and metric</u>
<ul style="list-style-type: none"> -Learn about place value in number up to 10,000,000 -Partition numbers up to 10,000,000 and solve problems in real-life contexts -Deepen understanding of the key place value units: 10s, 100s and 1,000s -Place numbers up to 10,000,000 on a number line -Compare and order numbers up to 10,000,000 -Round numbers up to 10,000,000 -Learn about negative numbers and their relationship with positive numbers 	<ul style="list-style-type: none"> -Rehearse and refine efficient written methods for the addition of whole numbers -Refine and rehearse use of column method for addition and subtraction -Solve multi-step addition and subtraction problems -Develop understanding of factors and how common factors link two or more numbers -Develop understanding of multiples and how common multiples link two or more numbers -Recognise the properties of numbers that can be used to deduce their divisibility by 2, 3, 5 and other factors -Identify prime numbers up to 100 -Recognise and identify square and cube numbers 	<ul style="list-style-type: none"> -Multiply a 4 digit number by a 1 and 2 digit number -Use a written short division method -Use factors of the divisor in order to divide efficiently -Divide a 3 and 4 digit number by a 2 digit number using long division -Complete long division with remainders -Learn the correct order of operations and use this to help solve multi-step calculations -Investigate the effect brackets have on a calculation -Learn efficient mental methods for solving calculations with smaller numbers, including decimals -Learn efficient methods for solving calculations with larger numbers, up to 1,000,000 -Reason from known facts 	<ul style="list-style-type: none"> Use common factors to simplify fractions -Count in fractions up and down on a number line and place missing fraction on a number line -Comparing and ordering fractions with different numerators and denominators -Add and subtract fractions -Add mixed numbers where the answer is greater than 1 -Subtract mixed numbers -Solve multi-step problems that involve adding and subtracting mixed numbers 	<ul style="list-style-type: none"> -Multiply proper and improper fractions and mixed numbers by a whole number -Multiply a fraction by a fraction -Divide a fraction by an integer -Solve fraction problems involving the four operations. -Find a fraction of an amount including problems where children have to find the whole given information about a part 	<ul style="list-style-type: none"> -Read, write and recognise all metric measures for length, mass and capacity. -Convert between metric units of measurement, including decimals -Calculate with metric measurements -Learn the ratio between miles and kilometres -Convert between imperial measures
Year 6 - Spring					
<u>Ratio and Proportion</u>	<u>Algebra</u>	<u>Decimals</u>	<u>Percentages</u>	<u>Measure – Perimeter, area and volume</u>	

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<ul style="list-style-type: none"> -Use the language of ratio to describe and compare the different parts within a whole -Compare ratios, explore different representations of ratio and identify ratios from given amounts or diagrams -Use ratio to calculate totals and amounts and consider the different methods that can be used. -Interpret scales on maps and plans. Measure lines on the map or plan and calculate the length in real life -Apply scale factors to calculate measurements -Identify if shapes are similar, deduce scale factors and draw similar shapes -Use ratios to deduce quantities -Solve problems involving proportion where the scale is not a whole number. Use knowledge of fractions and multiples to compare and discuss different methods to solve the same question -Solve a range of multi-step problems using ratio. 	<ul style="list-style-type: none"> -Investigate number sequences and identify the algebraic rule that governs them. They will learn how to write these rules in a form that allows them to be applied generally. -Find a rule for a number sequence that has more than one step. Represent these sequences in a concrete, pictorial or abstract manner. -Apply understanding of algebraic rules and investigate how they can be used to solve an contextual problem -Generalise a contextual problem -Use understanding of using algebraic rules to find the nth term in an algebraic sequence -Find and record algebraic formulae -Read, understand and solve algebraic equations. -Use the inverse to find a missing number in an equation -Create algebraic equations based on contextual word problems. Use this to find missing numbers in 2-step equations -Children will use their understanding of creating algebraic equations to create equations they can use to find all 	<ul style="list-style-type: none"> -Rehearse the place value of numbers to 3 decimal places -Round decimals to 2 decimal places -Add and subtract decimals -Multiply and divide decimals by 10, 100 and 1000. -Multiply and divide decimals by a whole number -Convert fractions to decimals and decimals to fractions where the denominator is a power of 10. -Calculate decimal equivalents of a fraction by dividing the numerator by the denominator 	<ul style="list-style-type: none"> -Work with fractions that are shown as 'out of 100' and express these as percentages -Convert fractions to percentages -Find equivalent fractions, decimals and percentages and convert between them -Order fractions, decimals and percentages -Find percentages of an amount -Find missing values in problems involving percentages 	<ul style="list-style-type: none"> -Find the area and perimeter of 2D shapes -Apply knowledge of perimeter to find missing lengths -Find the area of a triangle -Find the area of a parallelogram -Apply knowledge of area to solve problems, in particular when calculating the area of a composite shape or when finding missing measurements for a given area. -Apply their knowledge of perimeter to solve problems, in particular when calculating unknown lengths and perimeters of composite rectilinear shapes. -Calculate the volume of cuboids and explore different shapes with the same volume. -Calculate the volume of shapes using a formula -
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	<p>solutions to a given problem with two missing values</p> <ul style="list-style-type: none"> -Solve problems with two unknowns - 			
Year 6 - Summer				
<p>Statistics</p> <ul style="list-style-type: none"> -Read and interpret line graphs -Draw line graphs -Interpret bar charts by exploring more advanced examples -Understand and complete pie charts <ul style="list-style-type: none"> -Read and interpret pie charts -Calculate the fractions represented by pie charts. Compare categories by converting them into fractions of the pie charts <ul style="list-style-type: none"> -Learn that the whole pie chart is represented by 100%. Compare and convert percentages of the pie chart to fractions. Use percentages to calculate the value of each category. -Use the term 'mean' to find the average -Calculate the mean from given data. -Problem solve involving finding the mean - 	<p>Geometry – Properties of shape</p> <ul style="list-style-type: none"> -Measure and classify angles using a protractor -Extend understanding of angles to discover that vertically opposite angles are equal -Understand that angles in a triangle total 180 degrees -Find missing angles in a triangle -Understand that the interior angles of a quadrilateral equal 360 degrees -Calculate the sum of interior angles in other polygons -Learn the definition of radius and diameter of a circle -Draw shapes using a ruler and a protractor, including using dotted paper -Identify shapes from their net and draw their own nets 	<p>Geometry –position and direction</p> <ul style="list-style-type: none"> -Plot coordinates in the first quadrant -Read and plot points in four quadrants -Translate shapes on a coordinate grid -Reflect shapes on a coordinate grid -Solve problems with coordinates 	<p>Themed projects, consolidation and problem solving</p> <p>Revision</p> <p>Problem solving unit in Power Maths book covers problem solving across all the units.</p> <ul style="list-style-type: none"> - Place Value - Four Operations - Measure - Shape - Fractions - Percentages - Ratio and Proportion - Algebra 	