



The Oaks Primary School
Bringing Learning to Life

Year 6 – Progression & Small Steps

	NC Objectives	Small steps	Fluency	Resources
<p style="text-align: center;">Autumn 1 Place Value Addition, Subtraction, Multiplication & division Position & Direction</p>	<ul style="list-style-type: none"> • 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 • 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 	<p><u>Place Value</u></p> <ul style="list-style-type: none"> ➔ Read, write, represent numbers to ten million ➔ Compare and order whole numbers up to ten million ➔ Round numbers within ten million ➔ Negative numbers including counting forward and backward through 0 and find intervals across 0 <p><u>Addition, Subtraction, Multiplication & division</u></p> <ul style="list-style-type: none"> ➔ Add and subtract integers ➔ Multiply multi-digit numbers by two digits up to 4 digit numbers ➔ Short division, dividing by 1 then two digit numbers using formal written methods ➔ Divide using factors ➔ Long division when dividing 3,4 digit number by 2 digit number ➔ Long division where numbers have remainders 	<p>Capacity Perimeter & Area Decimals Money</p>	<p>Dienes Numicon Number lines Number squares Dice Stickers Part part whole Bar models Digit cards Number fans Place value chart / counters</p>

Autumn 2

- Addition, Subtraction, Multiplication & division
- Fractions

NC Objectives	Small steps	Fluency	Resources
<ul style="list-style-type: none"> • identify common factors, common multiples and prime numbers • use their knowledge of the order of operations to carry out calculations involving the four operations • solve addition, subtraction multi-step problems in contexts, deciding which operations, methods to use and why • perform mental calculations including with mixed operations and large numbers • 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. • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • multiply simple pairs of proper fraction, writing the answer in its simplest form [for example, $1/4 \times 1/2 = 1/8$] • divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $8 \frac{3}{4}$] 	<ul style="list-style-type: none"> → Find common factors of two numbers → Find common multiples of a numbers → Identify prime numbers → Identify square and cube numbers → use knowledge of the order of operations to carry out calculations involving the four operations → decide on appropriate mental calculations for all four operations → use estimation to check answers → Use known facts to work out calculations <p>Fractions</p> <ul style="list-style-type: none"> → Simplify Fractions using common factors → Count forwards, and backwards in fractions on a number line → Order and compare fractions with different denominators finding lowest common multiple including > 1 → Compare and order fractions with different numerators → Add and subtract fractions within 1 where denominators are multiples of same number → Add and subtract fractions within 1 where denominators are not multiples of same number → Add mixed number fractions → Subtract mixed number fractions → Solve problems involving adding and subtracting fractions and mixed numbers → Multiply fractions by integers → Multiply fractions by fractions → Divide fractions by integers → Combine four operations when calculating with fractions → Calculate fractions of amount 	<p>Time Statistics 2D 3D shape Angles</p>	<p>Numberlines Number squares Place value chart Dice Venn diagrams Carroll diagrams Arrays Multi link (cube numbers)</p> <p>Number rods Cuisenaire rods / bars paper strips Bar models Counters Fraction wall IWB Number lines Part-part wholes Multilink Counting stick</p>

<p style="text-align: center; font-weight: bold; font-size: 2em;">Spring 1</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> → Find the whole amount form a known value of a fraction <p><u>Position & Direction</u></p> <ul style="list-style-type: none"> → Read and plot coordinates in the first quadrant → Read and plot coordinates in the four quadrants → Translate shape sin all four quadrants → Reflect shapes in the four quadrants 		
	<p style="text-align: center;">NC Objectives</p> <ul style="list-style-type: none"> identify the value of each digit in numbers given to three decimal places and multiply 	<p style="text-align: center;">Small steps</p> <p><u>Fractions, Decimals & percentages</u></p> <ul style="list-style-type: none"> → Place value in numbers given to three dp → Multiply numbers with up to 3dp by 10, 100, 1000 	<p style="text-align: center;">Fluency</p> <p style="text-align: center;">Place value Fractions Mass</p>	<p style="text-align: center;">Resources</p> <p style="text-align: center;">Bar models Place value charts Number rods</p>

	<p>and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</p> <ul style="list-style-type: none"> 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 recall and use equivalences between simple fractions, decimals and percentages, including in different contexts solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison solve problems involving similar shapes where the scale factor is known or can be found solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. 	<ul style="list-style-type: none"> Divide numbers by 10, 100, 1000 Multiply decimals by integers Divide decimals by integers Use division with decimals to solve problems Convert decimals to fractions including simplifying Convert fractions to decimals Convert fractions to percentages by identifying equivalent fractions Use common equivalent fractions and decimals to find equivalent percentages Convert between FDP to order and compare Use fractional equivalence to find percentages of amounts Find multiples of 10% and other known percentages Find missing whole or missing percentage when other values are given <p>Ratio & proportion</p> <ul style="list-style-type: none"> Use ration language and make simple comparisons between two different quantities. Use objects and diagrams to compare ratios and fractions Use, read and write ratios using the ratio symbol Calculate ratios from worded questions Draw 2D shapes on a grid to a given scale factor Use multiplication and division facts to calculate missing information and scale factors Solve a range of ratio and proportion problems 		<p>Cuisenaire rods / bars Bar models Counters Number lines Part-part wholes Multilink counters Counting stick</p>
<p>Spring 2 Measurement: Converting units</p>	<p>NC Objectives</p>	<p>Small steps</p>	<p>Fluency</p>	<p>Resources</p>
	<ul style="list-style-type: none"> 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 	<p>Measurement: Converting units</p> <ul style="list-style-type: none"> Read, write, estimate and recognise all metric units of length, mass & capacity Convert between units of length, mass and capacity Solve conversion measurement problems in context up to 3dp 	<p>Addition & Subtraction Time Shape</p>	<p>Multi-link cubes Rulers Metre sticks Trundle wheel Money</p>

	<p>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</p> <ul style="list-style-type: none"> • convert between miles and kilometres • 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 area of parallelograms, triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]. • Use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • Enumerate possibilities of combinations of two variables. 	<ul style="list-style-type: none"> → Convert between miles and Kilometres → Know facts about imperial measure <p><u>Measurement: Perimeter, Area & Volume</u></p> <ul style="list-style-type: none"> → Find and draw rectilinear shapes with the same area → Calculate area and perimeter understanding the difference → Work out the area of triangles by counting → Find the area of rectangles to calculate area of right angled triangles → Work out the area of a range of triangles → Find area of a parallelogram → count cubic units (1 cm³) to find the volume of 3D shapes. → Make own models using cubic units → Use the formulae ($l \times w \times h$) for calculating the volume of cuboids <p><u>Algebra</u></p> <ul style="list-style-type: none"> → explore simple one-step functions working forward and backwards → Explore two step functions → Use simple algebraic inputs (y) → Substitute into simple expressions → substitute into familiar formulae such as those for area and volume. → use simple formulae to work out values of everyday activities → use algebraic notation to form one-step equations. → solve simple one step equations involving the four operations. → Solve two-step equations using the four operations → Identify what possible values a pair of variables can take → find possible solutions to equations which involve multiples of one or more unknown 		<p>Objects for algebra</p>
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Summer 1 Statistics Geometry: Properties of Shape	NC Objectives	Small steps	Fluency	Resources
	<ul style="list-style-type: none"> • interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average • 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 	<p><u>Statistics</u></p> <ul style="list-style-type: none"> ➔ Read and interpret line graphs including where more than one set of data is on the same graph. ➔ Draw own line graphs and decide on the most appropriate scales and intervals to use depending on the data they are representing. ➔ Use line graphs to solve problems ➔ Illustrate and name parts of a circle including, radius, diameter, centre, circumference and know the diameter is twice the radius ➔ Interpret pie charts including calculating fractions of amounts 	<p>Multiply and Divide Position and direction</p>	<p>Protractors 2D shapes Nets 3D shapes Squared paper Dotted paper</p>

	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> ➔ Calculate percentages of amounts to interpret pie charts ➔ Draw pie charts using protractors ➔ Calculate and interpret the mean as an average <p><u>Geometry: Properties of Shape</u></p> <ul style="list-style-type: none"> ➔ Measure and draw angles using a protractor ➔ Make connections recognise angles where they meet at a point, are on a straight line and Find missing angles. ➔ Recognise vertically opposite angles and calculate missing angles ➔ explore interior angles of a triangle and understand that the angles will add up to 180 degrees. ➔ Use their understanding of the properties of triangles to reason about angles including hatch marks ➔ recognise key features of specific types of triangle and use their knowledge of angles on a straight line, angles around a point and vertically opposite angles ➔ explore interior angles in a parallelogram, rhombus, trapezium ➔ explore interior angles in polygons. including partitioning shapes into triangles from a single vertex to work out the sum of the angles in polygons ➔ Draw shapes accurately on different grids and plain paper with a protractor using given dimensions and angles ➔ identify three-dimensional shapes from their nets. 		
Summer 2 Consolidation	NC Objectives	Small steps	Fluency	Resources

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