



The Oaks Primary School  
Bringing Learning to Life

## Year 5 – Progression & Small Steps

Autumn 1 Place Value Addition & Subtraction	NC Objectives	Small steps	Fluency	Resources – specific areas
	<ul style="list-style-type: none"> <li>• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>• Count forwards / backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>• solve number problems and practical problems that involve all of the above</li> <li>• read Roman numerals to 1000 (M), recognise years in Roman numerals</li> <li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	<p><b><u>Place Value</u></b></p> <ul style="list-style-type: none"> <li>➔ Read, write represent numbers to 10, 000</li> <li>➔ Add and subtract 10,100,1000 4 digit numbers</li> <li>➔ Round any number to within 10,000 the nearest 10, 100, 1000</li> <li>➔ Read, write represent to 100,000</li> <li>➔ Compare and order numbers to 100,000</li> <li>➔ Round numbers within 100,000</li> <li>➔ Read, write represent numbers to 100,000</li> <li>➔ Counting in 10’s, 100’s, 1000’s, 10,000’s and 100,000</li> <li>➔ Compare and order numbers to million</li> <li>➔ Round numbers to 1 million</li> <li>➔ Negative numbers on number lines</li> <li>➔ Roman numerals to 1000</li> </ul> <p><b><u>Addition &amp; Subtraction</u></b></p> <ul style="list-style-type: none"> <li>➔ Add whole numbers with more than 4 digits (column method)</li> <li>➔ Subtract whole numbers with more than 4 digits (column method)</li> <li>➔ Round to estimate and approximate</li> <li>➔ Inverse operations (addition and subtraction)</li> <li>➔ Multi-step addition and subtraction problems</li> </ul>	Capacity Perimeter & Area Decimals Money	Dienes Numicon Number lines Number squares Dice Stickers Part part whole Bar models Digit cards Number fans Place value chart / counters

**Autumn 2**  
- Multiplication and division

	NC Objectives	Small steps	Fluency	Resources
	<ul style="list-style-type: none"> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</li> <li>• multiply and divide numbers mentally drawing upon known facts</li> <li>• divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100, 1000</li> <li>• recognise and use square numbers and cube numbers, and the notation for squared ( 2 ) and cubed ( 3 )</li> <li>• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of =</li> <li>• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul>	<p><b><u>Multiplication &amp; Division</u></b></p> <ul style="list-style-type: none"> <li>➔ Find multiples of whole numbers</li> <li>➔ Understand and use factors including all factor pairs of a number</li> <li>➔ Identify common factors of two numbers</li> <li>➔ Identify prime numbers up to 100</li> <li>➔ Recognise and use Square numbers</li> <li>➔ Understand and use cube numbers</li> <li>➔ Multiply by 10, 100 and 1000 in whole numbers and decimals</li> <li>➔ Divide by 10,100 and 1000</li> <li>➔ Use known facts to divide and multiply numbers</li> <li>➔ Multiply 4 digit by 1 digit</li> <li>Expanded method ➔ Compact method</li> <li>➔ Multiply 2 digits by 1 digit</li> <li>Expanded method ➔ Compact method</li> <li>➔ Multiply 2 digits by 2 digits</li> <li>Expanded method ➔ Compact method</li> <li>➔ Multiply 3 digits by 2 digits</li> <li>Expanded method ➔ Compact method</li> <li>➔ Multiply 4 digits by 2 digits</li> <li>Expanded method ➔ Compact method</li> <li>➔ solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> <li>➔ Divide 4 digit by 1 digit</li> <li>➔ Divide with remainders Bus stop ➔ chunking</li> </ul> <p>(Exposed to Grid method through reasoning questions)</p>	<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><b>S</b> <b>P</b></p>	<p>NC Objectives</p>	<p>Small steps</p>	<p>Fluency</p>	<p>Resources</p>

	<ul style="list-style-type: none"> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>• calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>• solve comparison, sum and difference problems using information presented in a line graph</li> <li>• complete, read and interpret information in tables, including timetables</li> <li>• identify 3-D shapes, including cubes and other cuboids, from 2-D representation</li> <li>• know angles are measured in degrees: estimate and compare acute, obtuse reflex</li> <li>• draw given angles, measure in (o)</li> <li>• identify: angles at a point and one whole turn (total 360o ) angles at a point on a straight line and 1/2 a turn (total 180o ) other multiples of 90o</li> <li>• use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> </ul>	<p><b>Measurement: Perimeter &amp; Area</b></p> <ul style="list-style-type: none"> <li>➔ Measure the perimeter of rectilinear shapes in cm and M</li> <li>➔ Calculate perimeter to find unknown lengths in cm and M</li> <li>➔ Calculate and compare the area of rectangles using standard units, squared (cm<sup>2</sup>) square metres (m<sup>2</sup>)</li> <li>➔ Calculate and compare the area of compound shapes</li> <li>➔ Calculate the area of irregular shapes</li> <li>➔ Estimate the areas of irregular shapes</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>➔ Read and interpret line graphs</li> <li>➔ Draw line graphs</li> <li>➔ Use line graphs to solve problems</li> <li>➔ Read and interpret tables</li> <li>➔ Read and interpret two way tables</li> <li>➔ Extract information from timetables</li> </ul> <p><b>Geometry: Properties of shape</b></p> <ul style="list-style-type: none"> <li>➔ Measure angles in degrees, recognising the degrees for each turn</li> <li>➔ Estimate, compare and measure acute angles using a protractor</li> <li>➔ Estimate, compare and measure obtuse angles using a protractor</li> <li>➔ Draw given angles using degrees</li> <li>➔ Recognise angles on a straight line = 180 degrees and calculate missing angles</li> <li>➔ Understand and calculate angles around full turn (Know there are 360 degrees in a full turn)</li> <li>➔ reason about length and angles in shapes including finding missing lengths and using related facts</li> <li>➔ Distinguish between regular and irregular polygons</li> <li>➔ Identify and reason about 3D shapes including cubes and cuboids from 2-D shapes</li> </ul>	<p>Place value Fractions Add and subtract Mass</p>	<p>Rulers Metre sticks 2D shapes</p>
S P L	NC Objectives	Small steps	Fluency	Resources

	<ul style="list-style-type: none"> <li>• Compare, order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [E.g. <math>52+54=56=1\ 5\ 1</math>]</li> <li>• add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> </ul>	<ul style="list-style-type: none"> <li>➔ Explore fractions in different representations</li> <li>➔ Investigate and record equivalent fractions (strip diagrams, fraction wall)</li> <li>➔ Identify, name and write equivalent fractions using a range of models then moving on to abstract method</li> <li>➔ Convert improper fractions to mixed fractions</li> <li>➔ Convert mixed numbers to improper fractions</li> <li>➔ Count up and down in given fractions including finding missing fractions in a sequence</li> <li>➔ Compare and order fractions less than 1 where denominators are multiples of same number</li> <li>➔ Compare and order fractions more than 1 where denominators are multiples of same number</li> <li>➔ Add and subtract fractions with the same denominator</li> <li>➔ Add and subtract with different denominators where denominators are multiples of the same number</li> <li>➔ Add 3 or more fractions where two denominators are multiples</li> <li>➔ Represent adding fractions using pictorial methods to explore adding two or more proper fractions where the total is greater than 1</li> <li>➔ Add mixed numbers where one or both are mixed numbers or improper fractions</li> <li>➔ Subtract fractions with different denominators</li> <li>➔ Subtract mixed numbers</li> <li>➔ Subtract 2 mixed numbers</li> <li>➔ Multiply fractions by whole numbers</li> <li>➔ Multiply a non-unit fraction by whole number</li> <li>➔ Multiply mixed numbers by whole numbers</li> <li>➔ Find unit and non-unit fractions of amounts, quantities and measures</li> <li>➔ Use fractions involving four operators.</li> </ul>	<p>Place value Addition &amp; Subtraction Time Shape</p>	<p>Number rods Cuisenaire rods / bars paper strips Bar models Counters Fraction wall IWB Number lines Part-part wholes Multilink Counting stick</p>
S u n	NC Objectives	Small steps	Fluency	Resources

	<ul style="list-style-type: none"> <li>→ read, write decimal numbers as fractions</li> <li>→ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>→ round decimals with two d.p to the nearest whole number and to 1 d.p</li> <li>→ read, write, order, compare numbers with up to 3 d.p</li> <li>→ solve problems involving numbers up to three d.p</li> <li>→ recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’ write percentages as a fraction with denominator 100, as decimal</li> <li>→ solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10/25.</li> </ul>	<p><b><u>Decimals &amp; Percentages</u></b></p> <ul style="list-style-type: none"> <li>→ Read and write decimal numbers with up to 2 d.p</li> <li>→ Identify the place value by partitioning decimals in different ways</li> <li>→ Explore the relationship between decimals and fractions and convert fractions to decimals</li> <li>→ Represent more complex numbers as fractions and decimals (0.96 1.2)</li> <li>→ Understand thousands and the relationship between tenths, hundredths and thousandths</li> <li>→ Understand and represent thousandths in different ways</li> <li>→ Round decimals with two d.p to the nearest whole number and to 1d.p</li> <li>→ Read, write order and compare numbers up to 3 d.p</li> <li>→ Understand percentages and represent in different ways</li> <li>→ Represent percentages as fractions using the denominator 100 and make the connection to decimals and hundredths.</li> <li>→ Recognise simple equivalent fractions and represent them as decimals and percentages</li> <li>→ Solve problems which require knowing percentage and decimal equivalents with denominators of a multiple of 10 or 25</li> <li>→ Adding decimals within 1</li> <li>→ Subtracting decimals within 1</li> <li>→ Complements to 1 Adding decimals – crossing the whole</li> <li>→ Adding decimals with the same number of decimal places</li> <li>→ Subtracting decimals with the same number of decimal places</li> <li>→ Adding decimals with a different number of decimal places</li> <li>→ Subtracting decimals with a different number of decimal places</li> <li>→ Adding and subtracting wholes and decimals</li> <li>→ Decimal sequences</li> <li>→ Multiplying decimals by 10, 100 and 1,000</li> <li>→ Dividing decimals by 10, 100 and 1,000</li> </ul>	<p>Multiply and Divide</p> <p>Position and direction</p> <p>2D 3D shape</p> <p>Fractions</p>	<p>Bar Models</p> <p>Hundred squares</p> <p>Egg boxes</p> <p>Tens frames</p> <p>Counters</p> <p>Place value charts</p> <p>Part part wholes</p> <p>Money</p>
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<b>Summer 2</b> Geometry				
	<b>NC Objectives</b> <ul style="list-style-type: none"> <li>identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</li> </ul>	<b>Small steps</b> <p><b><u>Geometry: Position &amp; direction</u></b></p> <ul style="list-style-type: none"> <li>→ identify and describe position in the first quadrant</li> <li>→ Represent position in first quadrant</li> <li>→ Translate shapes on a grid</li> </ul>	<b>Fluency</b> <p>Place value Add and subtract Time</p>	<b>Resources</b> <p>Counters squared paper Trundle wheel Scales</p>

	<ul style="list-style-type: none"> <li>• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>• Estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water]</li> <li>• solve problems involving converting between units of time</li> <li>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</li> </ul>	<ul style="list-style-type: none"> <li>➔ Translate coordinates and describe translation of coordinates</li> <li>➔ Reflect objects using lines that are parallel to the axis</li> <li>➔ Explore what happens to points when they are reflected in lines parallel to the axes.</li> </ul> <p><b><u>Measurement: Converting units</u></b></p> <ul style="list-style-type: none"> <li>➔ Kilometres</li> <li>➔ Convert between kilometres and metres</li> <li>➔ find fractions of kilometres</li> <li>➔ compare km and m</li> <li>➔ Add and subtract with 4 digit numbers to find two lengths that add up to km (1,800m + ___ =3kn)</li> <li>➔ Understand the term ‘kilo’ in kilogram kilometre and convert these measures</li> <li>➔ find fractions of measures (1/10 of 1 kilogram = __ grams)</li> <li>➔ Milligrams and millilitres</li> <li>➔ Understand milli in terms of length and mass</li> <li>➔ Convert from metres – millimetres, litres to millilitres and vice versa</li> <li>➔ convert between different units of length and choose the appropriate unit for measurement (mm,cm,m, km)</li> <li>➔ introduce imperial units and approximate equivalences between metric units and common imperial units such as inches, pounds (lbs) and pints.</li> <li>➔ convert between different units of time including years, months, weeks, days, hours, minutes and seconds.</li> <li>➔ Use timetables to retrieve information converting between different units of time in order to solve problems</li> </ul> <p><b><u>Measurement: Volume</u></b></p> <ul style="list-style-type: none"> <li>➔ Understand what volume is using practical resources</li> <li>➔ Compare and order solids that are made of cubes (cm<sup>3</sup>)</li> <li>➔ Estimate volume of different solids and objects</li> <li>➔ Estimate Capacity (e.g using water/ rice)</li> </ul>	<p>Statistics Decimals, percentages</p>	<p>Measuring Jugs</p>
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