

# The Federation of Nettlestone & Newchurch Primary Curriculum Overview Mathematics Year 5

<u>Autumn Term</u>	<u>Spring Term</u>	<u>Summer Term</u>
<p><b><u>Problem solving and reasoning</u></b></p> <ul style="list-style-type: none"> <li>Across all domains</li> </ul>		
<p><b><u>Number and place value</u></b></p> <ul style="list-style-type: none"> <li>I can read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.</li> <li>I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000.</li> <li>I can solve number problems and practical problems involving rounding and working with large numbers.</li> </ul> <p><b><u>Addition and subtraction</u></b></p> <ul style="list-style-type: none"> <li>I can complete, read and interpret information in tables, including timetables (Statistics)</li> <li>I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> </ul> <p><b><u>Multiplication and division</u></b></p> <ul style="list-style-type: none"> <li>I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>I can multiply and divide numbers mentally drawing upon known facts.</li> <li>I know and use the vocabulary of: prime numbers, prime factors and composite (non prime) numbers.</li> <li>I can multiply and divide whole numbers and</li> </ul>	<p><b><u>Number and place value</u></b></p> <ul style="list-style-type: none"> <li>I can count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000</li> <li>I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero.</li> </ul> <p><b><u>Addition and subtraction</u></b></p> <ul style="list-style-type: none"> <li>I can add and subtract whole numbers with more than 4 digits, including using formal written methods (Columnar addition and subtraction)</li> <li>I can solve comparison, sum and difference problems using information presented in a line graph (Statistics)</li> <li>I can add and subtract numbers mentally with increasingly large numbers (e.g. <math>12,462 - 2,300 = 10,162</math>)</li> </ul> <p><b><u>Multiplication and division</u></b></p> <ul style="list-style-type: none"> <li>I know and use the vocabulary of: prime numbers, prime factors and composite (non prime) numbers.</li> <li>I can 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> </ul>	<p><b><u>Number and place value</u></b></p> <ul style="list-style-type: none"> <li>I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> </ul> <p><b><u>Addition and subtraction</u></b></p> <ul style="list-style-type: none"> <li>I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> <li>I can add and subtract numbers mentally with increasingly large numbers (e.g. <math>12,462 - 2,300 = 10,162</math>)</li> <li>I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul> <p><b><u>Multiplication and division</u></b></p> <ul style="list-style-type: none"> <li>I can multiply and divide whole numbers and those involving decimals by 10,100 and 1000.</li> <li>I can 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>I can recognise and use square numbers and cube numbers and the notation for squared and</li> </ul>

those involving decimals by 10,100 and 1000.

#### Fractions Decimals and percentages

- I can compare and order fractions whose denominators are all multiples of the same number?
- I can recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements  $> 1$  as a mixed number (e.g.  $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ )
- I can round decimals with one decimal place to nearest whole number.
- I can add and subtract fractions with the same denominator and multiples of the same number.

#### Measures

- I can calculate and compare the area rectangles (including squares) and including using standard units, square centimetres ( $\text{cm}^2$ ) and square metres ( $\text{m}^2$ ) and estimate the area of irregular shapes?
- I can complete, read and interpret information

- I can recognise and use square numbers and cube numbers and the notation for squared and cubed.

#### Fractions Decimals and percentages

- I can add and subtract fractions with the same denominator and multiples of the same number.
- I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths?
- I can read and write decimal numbers as fractions (e.g.  $0.71 = \frac{71}{100}$ )
- I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
- I can recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction.
- I can round decimals with two decimal places to the nearest whole number and to one decimal place.

#### Measures

- I can use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.

cubed.

- I can divide numbers by 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context.
- I can establish whether a number up to 100 is prime and recall prime numbers up to 19.
- I can solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.
- I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

#### Fractions Decimals and percentages

- I can read, write, order and compare numbers with up to three decimal places.
- I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- I can solve problems involving number up to three decimal places.
- I can solve problems which require knowing percentage and decimal equivalents of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{4}{5}$  and those with a denominator of a multiple of 10 or 25.

#### Measures

- I can estimate volume (e.g. using  $1 \text{ cm}^3$  blocks to build cubes and cuboids) and capacity (e.g. using water)
- I can use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.

<p>in tables, including timetables (statistics)</p> <ul style="list-style-type: none"> <li>• I can convert between different units of metric measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre)</li> <li>• I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</li> <li>• I can solve problems involving converting between units of times.</li> </ul> <p><b><u>Geometry: properties of shapes</u></b></p> <ul style="list-style-type: none"> <li>• I can identify 3-D shapes, including cubes and cuboids, from 2-D representations?</li> <li>• I can identify angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>• I know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles.</li> </ul>	<p><b><u>Geometry: properties of shapes</u></b></p> <ul style="list-style-type: none"> <li>• I can draw given angles, and measure them in degrees</li> <li>• I can identify angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</li> </ul>	<ul style="list-style-type: none"> <li>• I can understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.</li> </ul> <p><b><u>Geometry: properties of shapes</u></b></p> <ul style="list-style-type: none"> <li>• I can use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> <li>• I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> </ul> <p><b><u>Geometry: position and direction.</u></b></p> <ul style="list-style-type: none"> <li>• I can 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>
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