

Normanby Primary School – Year 5 Programme of Study

Ma5/2.1 Number & Place Value

- Ma5/2.1a read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
- Ma5/2.1b count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
- Ma5/2.1c interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0
- Ma5/2.1d round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000
- Ma5/2.1e solve number problems and practical problems that involve all of the above
- Ma5/2.1f read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.

Ma5/2.2 Addition & Subtraction

- Ma5/2.2a add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- Ma5/2.2b add and subtract numbers mentally with increasingly large numbers
- Ma5/2.2c use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Ma5/2.2d solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Ma5/2.3 Multiplication & Division

- Ma5/2.3a identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- Ma5/2.3b know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Ma5/2.3c establish whether a number up to 100 is prime and recall prime numbers up to 19
- Ma5/2.3d 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
- Ma5/2.3e multiply and divide numbers mentally drawing upon known facts
- Ma5/2.3f 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
- Ma5/2.3g multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
- Ma5/2.3h recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)
- Ma5/2.3i solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
- Ma5/2.3j solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- Ma5/2.3k solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Ma5/2.4 Fractions (decimals & percentages)

- Ma5/2.4a compare and order fractions whose denominators are all multiples of the same number
- Ma5/2.4b identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- Ma5/2.4c recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
- Ma5/2.4d add and subtract fractions with the same denominator and denominators that are multiples of the same number
- Ma5/2.4e multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- Ma5/2.4f read and write decimal numbers as fractions
- Ma5/2.4g recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Ma5/2.4h round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
- Ma5/2.4i read, write, order and compare numbers with up to 3 decimal places
- Ma5/2.4j solve problems involving number up to 3 decimal places
- Ma5/2.4k recognise the per cent symbol (%) and understand that per cent relates to “number of parts per 100”, and write percentages as a fraction with denominator 100, and as a decimal fraction
- Ma5/2.4l 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 fractions with a denominator of a multiple of 10 or 25.

Ma5/3.1 Measurement

- Ma5/3.1a convert between different units of metric measure

Ma5/3.1b	understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
Ma5/3.1c	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
Ma5/3.1d	calculate and compare the area of rectangles (including squares) including using standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes
Ma5/3.1e	estimate volume and capacity
Ma5/3.1f	solve problems involving converting between units of time
Ma5/3.1g	use all four operations to solve problems involving measure using decimal notation including scaling.
Ma5/3.2 Properties of Shape	
Ma5/3.2a	identify 3-D shapes, including cubes and other cuboids, from 2-D representations
Ma5/3.2b	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
Ma5/3.2c	draw given angles, and measure them in degrees (°)
Ma5/3.2d	identify: <ul style="list-style-type: none"> • angles at a point and 1 whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • other multiples of 90°
Ma5/3.2e	use the properties of rectangles to deduce related facts and find missing lengths and angles
Ma5/3.2f	distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Ma5/3.3 Position & Direction	
Ma5/3.3a	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.
Ma5/4.1 Statistics	
Ma5/4.1a	solve comparison, sum and difference problems using information presented in a line graph
Ma5/4.1b	complete, read and interpret information in tables, including timetables.