

YEAR 4 - Maths Curriculum

Number- Number and Place Value

- count in multiples of 6, 7, 9, 25 and 1000
- find 1000 more or less than a given number
- count backwards through zero to include negative numbers
- recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
- order and compare numbers beyond 1000
- identify, represent and estimate numbers using different representations
- round any number to the nearest 10, 100 or 1000
- solve number and practical problems that involve all of the above and with increasingly large positive numbers
- read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

Number- Addition and Subtraction

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- estimate and use inverse operations to check answers to a calculation
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Number- Multiplication and Division

- recall multiplication and division facts for multiplication tables up to 12×12
- use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Number- Fractions

- recognise and show, using diagrams, families of common equivalent fractions
- count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- add and subtract fractions with the same denominator
- recognise and write decimal equivalents of any number of tenths or hundredths
- recognise and write decimal equivalents to $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$
- find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- round decimals with one decimal place to the nearest whole number
- compare numbers with the same number of decimal places up to two decimal places
- solve simple measure and money problems involving fractions and decimals to two decimal places.

Measurement

- Convert between different units of measure [for example, kilometre to metre; hour to minute]
- measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- find the area of rectilinear shapes by counting squares
- estimate, compare and calculate different measures, including money in pounds and pence.
- read, write and convert time between analogue and digital 12- and 24-hour clocks
- solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Geometry - Properties of shapes

- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- identify acute and obtuse angles and compare and order angles up to two right angles by size
- identify lines of symmetry in 2-D shapes presented in different orientations
- complete a simple symmetric figure with respect to a specific line of symmetry.

Geometry - Position and Direction

- describe positions on a 2-D grid as coordinates in the first quadrant
- describe movements between positions as translations of a given unit to the left/right and up/down
- plot specified points and draw sides to complete a given polygon.

Statistics

- interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

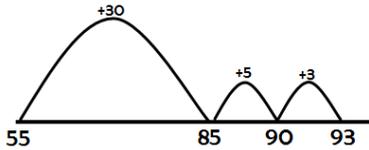
Vocabulary

multiple, negative number, rounding, nearest whole, rounded, Roman numerals, inverse operation, numerator, denominator, equivalent fraction, one decimal place, two decimal places, tenths, hundredths, first quadrant, polygon, angle, degrees, right angle, acute, obtuse, symmetrical, line of symmetry, reflection, position, coordinate, translate, time graph, bar chart, perimeter, area

Addition and Subtraction - Year 4

- Addition- Number line (supporting mental addition)**

55+38=93 (using bridging and combined multiples of 10)



- Subtraction - Number line (see addition example above)**

- Column Addition and Subtraction** (using Base 10 apparatus to support understanding)

Children should be confident using a number line before moving to column examples.

$$\begin{array}{r} 288 \\ +166 \\ \hline 14 \\ 140 \\ 300 \\ \hline 454 \end{array} \quad \text{progressing to } \Rightarrow \quad \begin{array}{r} 489 \\ + 254 \\ \hline 743 \\ 1 \quad 1 \end{array} \quad \begin{array}{r} 3 \quad 15 \\ 245 \\ - 127 \\ \hline 118 \end{array}$$

- See Year 3 and Year 5 examples for lower and higher ability pupils, if appropriate.

Multiplication and Division - Year 4

- Informal Method - Grid Method (supporting use of distributive law)**

x	50	4
6	300	24

$$\begin{array}{r} 300 \\ + 24 \\ \hline 324 \end{array}$$

- Formal Method - Short Multiplication (with jottings if necessary) HTUxU**

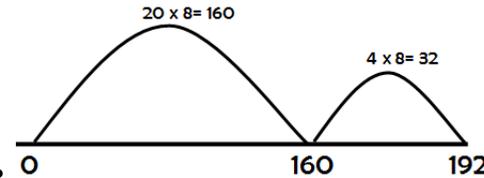
TUxU

$$\begin{array}{r} 23 \\ \times 8 \\ \hline 24 \\ 160 \\ \hline 184 \end{array} \quad \begin{array}{l} (3 \times 8) \text{ or } (8 \times 3) \\ (20 \times 8) \text{ or } (8 \times 3) \end{array}$$

$$\begin{array}{r} 245 \\ \times 6 \\ \hline 30 \\ 240 \\ 1200 \\ \hline 1470 \end{array} \quad \begin{array}{l} (6 \times 5) \\ (6 \times 40) \\ (6 \times 200) \end{array}$$

- Division - Number Line Method**

192:8=24



Mental Maths Coverage

- Count in multiples of 6, 7, 9, 25, 1000 (including counting in multiples of 4, 8 and 100 - from Year 3)
- Recall multiplication and division facts for multiplication tables up to 12x12
- Find 1000 more or less than a given number.
- Count backwards through 0 using negative numbers
- Count up and down in hundredths (*count up and down in tenths - from Year 3*)
- Multiply one or two digit numbers by 10 and 100 mentally
- Add two digit numbers quickly (45+34=79)
- Derive related facts for multiplication and division (e.g. 4x6=24 40x6=240 240:4=60)
- Work out what must be added to any three digit number to make the next multiple of 100 (e.g. 521 + ___ = 600)
- Addition doubles of numbers to 100
- Know pairs of fractions that total 1.
- Derive and recall sums and difference of pairs of multiples of 10, 100 and 1000.

Resources

- Fraction Circles** - adding and subtracting common denominator fractions; comparing and ordering fractions; counting in tenths
- Bead string** - pairs of numbers that total 100
- Base 10 apparatus** - partitioning; recombining; counting forwards and backwards in 10s and 100s; hundredths, tenths.
- Place Value Strip** multiplying and dividing by 10 and 100
- Place Value Arrow cards**
- Number lines** (decimal, negative)
- 3D shapes
- 2D shapes

