

Year 5 - Maths

Number - Place Value

To read, write, order and compare numbers to at least 1 000 000

- I can read and write numbers to 1000
- I can read and write numbers to 10,000
- I can read and write numbers to 50,000
- I can read and write numbers to 1,000,000
- I can recognise the value of each digit up to 1,000,000
- I can know and use terms: units; tens, hundreds, thousands, ten thousands, hundred thousands and one million correctly
- I can partition any number up to 1,000,000 showing the value of each digit

To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

- I can count forwards and backwards from a given number in steps of 10s
- I can count forwards and backwards from a given number in steps of 100s from a given number
- I can count forwards and backwards from a given number in steps of 1000s from a given number
- I can count forwards and backwards from a given number in steps of 10,000s from a given number
- I can count forwards and backwards from a given number in steps of 100,000s from a given number
- I can count forwards and backwards from a given number in steps of 1,000,000s from a given number

To interpret negative numbers in context,

To count forwards and backwards with positive and negative whole numbers

- I can interpret temperatures at minus $^{\circ}\text{C}$ on a thermometer
- I can count forwards from -20 to + 20
- I can count backwards from + 30 to -30

To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000

- I can round any number up to 100 to the nearest 10
- I can round any number up to 1000 to the nearest 10
- I can round any number up to 1000 to the nearest 100
- I can round any number up to 10,000 to the nearest 10 or 100 or 1000
- I can round any number up to 100,000 to the nearest 10, 100, 1000 or 10,000
- I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000, 100,000

To read Roman numerals to 1000 (M) and recognise years written in Roman numerals

- I can remember the Roman numbers from 1 to 10
- I can recognise the Roman symbol for 50
- I can recognise the Roman symbol for 100
- I can use and apply all the Roman numerals to 1000

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Number - Addition & Subtraction

To add and subtract whole numbers with more than 4 digits using the formal written methods

- I can add 2 numbers with 5-digits together using columnar addition without exchange between units and tens
- I can add 2 numbers with 5-digits together using columnar addition, where the units, tens or hundreds when added make more than 10
- I can add 3 numbers with 5-digits using columnar addition where the units, tens or hundreds make more than 10
- I can subtract a 5-digit number from another using columnar subtraction which requires no exchange between the units, tens, hundreds or thousands
- I can subtract a 5-digit number from another using columnar subtraction which requires exchange between the units, tens, hundreds or thousands

To add and subtract numbers mentally with increasingly large numbers

- I can mentally add any two, 2-digit numbers rapidly
- I can mentally subtract any 2-digit number from a greater 2-digit number rapidly
- I can mentally subtract a 2-digit number from a 3-digit number rapidly
- I can use a strategy for adding and subtracting numbers which go through the multiples of 10
- I can add or subtract any 1000s number to a 4 or 5 digit number
- I can use strategies for dealing with larger numbers

To use rounding to check answers

- I can round any number up to 100 to the nearest 10
- I can round any number up to 1000 to the nearest 10
- I can round any number up to 1000 to the nearest 100
- I can round any number up to 10,000 to the nearest 1,000, 100 or 10
- I can round any number up to 100,000 to the nearest 10,000, 1000, 100 or 10
- I can round any number up to 1,000,000 to the nearest 100,000, 10,000, 1000, 100 or 10
- I can use rounding as a way of working out if you have enough money to pay for several purchases
- I can use rounding in relation to approximating distances

To solve addition and subtraction multi-step problems in contexts

- I can read through a word problem carefully before trying to solve it
- I can identify key words to help me know which operation I are likely to need to use
- I can solve word problems that require one step
- I can solve a 2-step problem that requires addition to 100,000
- I can solve a 2-step problem that requires subtraction to 100,000
- I can solve a 2-step problem that requires addition and subtraction to 100,000
- I can solve a multi-step problem that requires addition and subtraction to 100,000

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Number - Multiplication & Division

To identify multiples and factors

- I can understand the term multiple
- I can find the factors of any number up to 20
- I can find the smallest factors of any number up to 100
- I can recognise numbers that only have 1 and themselves as factors
- I can name at least 2 multiples of any given number up to 20
- I can recognise common factors in any pair of numbers

To know and use the vocabulary of prime numbers, prime factors and composite numbers

- I can describe what a composite number is
- I can describe what a prime number is

To establish whether a number up to 100 is prime and recall prime numbers up to 19

- I can say what all the prime numbers to 19 are

To multiply numbers up to 4 digits by a one- or two-digit number using a formal written method

- I can multiply a 2 or 3-digit number by a 1-digit number using formal methods
- I can multiply a 2, 3 or 4-digit number by a 10s number
- I can multiply a 2, 3 or 4-digit number by a 100s number
- I can multiply a 2 or 3-digit number by a 2-digit number using formal methods
- I can multiply any number with 4-digits by a 2-digit number using formal methods

To multiply and divide numbers mentally drawing upon known facts

- I can answer a multiplication fact taken from the x2 to the x12 tables
- I can use the inverse of multiplication facts
- I can quickly work out multiplication facts that have derived from x2 to x12 tables

To divide numbers up to 4 digits by a one-digit number using the formal written method

- I can divide any number with 3-digits by a single digit number (no remainder)
- I can divide any number with 4-digits by a single digit number (no remainder)
- I can divide any number with 3-digits by a single digit number with remainder
- I can divide any number with 4-digits by a single digit number with remainder
- I can divide any number with 3-digits by 10 with a remainder
- I can divide any number with 4-digits by 10 with a remainder

To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

- I can multiply any 2, 3, 4, 5 or 6-digit number by 10
- I can multiply any 2, 3, 4, 5 or 6-digit number by 100
- I can multiply any 2, 3, 4, 5 or 6-digit number by 1000
- I can divide any 2, 3, 4, 5 or 6-digit number by 10
- I can divide any 2, 3, 4, 5 or 6-digit number by 100
- I can divide any 2, 3, 4, 5 or 6-digit number by 1000

To recognise and use square numbers and cube numbers

- I can recite the square of all numbers between 2 and 12 by heart
- I can use the symbol (2) accurately
- I can explain the relationship between the square of a number and the original number
- I can recite the cube of all numbers between 2 and 12 by heart
- I can use the symbols (3) accurately

Number - Fractions (including decimals and percentages)

To compare and order fractions whose denominators are all multiples of the same number

- I can compare and order fractions with the same denominator
- I can compare and order fractions with denominators of 2, 4 and 8
- I can compare and order fractions with denominators 5 and 10
- I can show how to convert fractions with different denominators into a common denominator
- I can order 2 different fractions with different denominators that are multiples of the same number
- I can order more than 2 different fractions with different denominators that are multiples of the same number

To identify, name and write equivalent fractions of a given fraction, represented visually

- I can write $\frac{1}{2}$ in at least three different ways by changing the denominator and numerator
- I can write $\frac{1}{4}$ and $\frac{3}{4}$ in at least three different ways by changing the denominator and numerator
- I can write equivalent fractions for any fraction
- I can write equivalent fractions for $x/100$
- I can write $\frac{1}{3}$ in at least three different ways by changing the denominator and numerator
- I can write $\frac{1}{2}$ in at least three different ways by changing the denominator and numerator

To recognise mixed numbers and improper fractions and convert from one form to the other

- I can explain what is meant by the term mixed fraction
- I can explain what is meant by the term improper fraction
- I can show understanding that a whole number can be written as $\frac{2}{2}$ or $\frac{4}{4}$, etc.
- I can convert an improper fraction into a mixed fraction
- I can convert a mixed fraction into an improper fraction

To add and subtract fractions with the same denominator and denominators that are multiples of the same number

- I can add and subtract fractions with the same denominator
- I can work out the common denominator for a pair of fractions with different denominators
- I can add any 2 fractions with different denominators
- I can add 2 mixed numbers where the fractional values have different denominators
- I can subtract 2 fractions with different denominators
- I can subtract 2 mixed numbers where the fractional values have different denominators

To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

- I can multiply a whole number by a fraction
- I can multiply a whole number by a fraction and express the answer in its simplest form
- I can multiply a mixed number fraction by a whole number
- I can multiply a mixed number by a whole number express the answer in its simplest form

To read and write decimal numbers as fractions

- I can write 0.5; 0.25; 0.1 as fractions
- I can write any decimal with 1 decimal place as a fraction
- I can any decimal with 2 decimal places as a fraction

Number - Fractions (including decimals and percentages)

To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

- I can recognise that 1000 thousandths are equivalent to one whole
- I can that 100 thousandths are equivalent to one tenth
- I can recognise that 10 thousandths are equivalent to one hundredth
- I can work out how many thousandths there are in any given hundredth value
- I can work out how many thousandths there are in any given tenth value
- I can work out how many thousandths there are in any ones value
- I can work out how many thousandths there are in any number to include ones, tenths, hundredths and thousandths

To read, write, order and compare numbers with up to three decimal places

- I can read any decimal number with up to three decimal places
- I can write any decimal number with up to three decimal places
- I can compare decimal numbers with up to three decimal places
- I can create a sequence with decimal numbers with up to three decimal places

To round decimals with two decimal places to the nearest whole number and to one decimal place

- I can round a one decimal place number to the nearest whole number
- I can round a two decimal place number to the nearest whole number
- I can round a two decimal place number to the nearest one decimal place number

To recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'

- I can recognise the % symbol
- I can explain that percent deals with a number or amount out of 100.
- I can write % of amounts.
- I can calculate the percent values of all tenths
- I can calculate the percent values of all fifths
- I can calculate the percent values of all quarters

To write percentages as a fraction with denominator 100, and as a decimal

- I can explain that 50% is $50/100 = \text{one half} = \frac{1}{2}$.
- I can explain that $0.5 = 50\%$
- I can explain that 25% is $25/100 = \text{one quarter} = \frac{1}{4}$.
- I can explain that $0.25 = 25\%$

Year 5 - Maths

Measurement

To convert between different units of metric measure

- I can express a distance of more than 1Km in metres
- I can express a distance of more than 1 cm in mm
- I can express a weight of more than 1Kg in grams
- I can express an amount of more than 1l in ml

To understand and use approximate equivalences between metric units and common imperial units

- I can explain the relationship between inches and centimetres
- I can explain the number of metres in 1 mile
- I can explain the relationship between a pound and a gram
- I can explain the relationship between a pint and a litre
- I can carry out a range of conversion calculations based on your knowledge of metric and imperial

To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

- I can calculate the perimeter of a rectangle or square
- I can calculate the perimeter of a composite shape, given the dimensions

To calculate and compare the area of rectangles and estimate the area of irregular shapes

- I can work out the area of given shapes using cm squared paper
- I can create a shape that has the same area as a shape you have already drawn on cm. squared paper
- I can explain that the area of a square or a rectangle is measured in cm^2 or m^2
- I can use information about calculating the area of a square or rectangle to work out the area of irregular shapes that can be divided up into squares and rectangles
- I can confidently estimate the area of a rectangle or square before finding out the exact area
- I can confidently estimate the area of an irregular shape before finding out the exact area

To estimate volume

- I can explain that volume is measured in cm^3 or m^3
- I can use cubes to work out the volume of a given shape
- I can use water to estimate and work out the capacity of a given container

To solve problems involving converting between units of time

- I can explain how many seconds in a minute
- I can explain how many minutes in an hour and how many hours in a day
- I can identify which months have 30 days and which year has an extra day (leap year)
- I can read the time in analogue using am and pm
- I can read the time in a 24 hour clock format
- I can convert between different ways of showing and telling the time
- I can show understand about time zones and how that impacts on different countries across the world

To use all four operations to solve problems involving measure

To distinguish between regular and irregular polygons

- I can identify and name triangles: equilateral; isosceles; scalene or right angled
- I can recognise quadrilateral
- I can recognise and name the following shapes parallelogram, rhombus, kite, an trapezium
- I can describe a quadrilateral well enough for someone to identify it
- I can name the polygons with 5 to 10 sides
- I can recognise parallel and perpendicular lines within shapes

To identify 3-D shapes from 2-D representations

- I can recognise 3D shapes from their nets
- I can draw a square accurately having been given the length of the side
- I can draw a rectangle accurately having been given the length and breadth
- I can draw an equilateral triangle with a given length
- I can draw a right-angled triangle when given the lengths of sides
- I can draw an isosceles triangle accurately given the length of side and the base
- I can draw a triangle to a given set of angles and sides
- I can draw a given angle using a protractor and label it appropriately

To know angles are measured in degrees and how to draw given angles

- I can identify an acute angle
- I can identify an obtuse angle
- I can identify a reflex angle
- I can recognise that angles are measured in degrees which has a symbol like this ($^{\circ}$)
- I can identify that a protractor is used to measure angles
- I can estimate an angle and then check it
- I can draw a given angle and measure them in degrees ($^{\circ}$)

To identify angles at a point, whole turn, on a straight line and $1/2$ a turn

- I can recognise 90° is equivalent to quarter turn
- I can recognise 180° is equivalent to half turn
- I can recognise 270° is equivalent to three-quarter turn
- I can recognise 360° is equivalent to full turn

To identify, describe and represent the position of a shape following a reflection or translation

- I can create the four quadrants in the coordinate plane
- I can identify which is the first, second, third and fourth quadrant
- I can pinpoint a spot within a quadrant and describe it by the coordinate points
- I can reflect a shape from one quadrant to another when the shape sits on the horizontal or vertical plane
- I can reflect a shape from one quadrant to another when the shape does not sit on the horizontal or vertical plane
- I can translate a shape from one quadrant to another ensuring that the shape and size is unchanged

Year 5- Maths

Statistics

To complete, read and interpret information in tables, including timetables

- I can read a simple train or bus timetable
- I can read a more complex bus or train timetable
- I can ask questions about a timetable
- I can create a timetable based on a given set of information

To solve comparison, sum and difference problems

- I can read and interpret information presented in a bar chart
- I can present information you have collected in the form of a bar chart
- I can read, interpret and compare information presented in the form of a line graph
- I can solve addition and subtraction problems presented to you in line graphs
- I can create your own line graph based on information you have collected and collated
- I can decide when information is best presented in a bar chart; line graph or table