

Year 5 Objectives: Number

NUMBER AND PLACE VALUE

Read, write, order and compare numbers to 1,000,000 determine value of each digit

Revise reading and writing numbers to: 1000 and then to 10,000.

Read and write number to 50,000

Read and write numbers to 1,000,000

Recognise the value of each digit up to 1,000,000

Know and use terms: units; tens, hundreds, thousands, ten thousands, hundred thousands and one million correctly

Partition any number up to 1,000,000 showing the value of each digit

NUMBER AND PLACE VALUE

Count forwards and backwards in steps of 100, 1000, 10,000 for any given number up- to 1,000,000

Count onwards and backwards from a given number in steps of 100s

Count onwards and backwards from a given number in steps of 1000s

Count onwards and backwards from a given number in steps of 10,000s

Count onwards and backwards from a given number in steps of 100,000s

Count onwards and backwards from a given number in steps of 1,000,000s

Year 5 Objectives : Number 2

NUMBER AND PLACE VALUE

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000

Round any number up to 100 to the nearest 10

Round any number up to 1000 to the nearest 10

Round any number up to 1000 to the nearest 100

Round up any number up to 10,000 to the nearest 1,000, 100 or 10

Round up any number up to 100,000 to the nearest 10,000, 1000, 100 or 10

Round up any number up to 1,000,000 to the nearest 100,000, 10,000, 1000, 100 or 10

NUMBER AND PLACE VALUE

Estimate the answers to calculations involving addition, subtraction, multiplication and division

Estimate the answer to any given addition involving two 2-digit numbers to the nearest 10

Estimate the answer to any given addition involving two 3-digit numbers to the nearest 100

Estimate the answer to any given addition involving two 3-digit numbers to the nearest 10

NUMBER AND PLACE VALUE

Estimate the answers to calculations involving addition, subtraction, multiplication and division (contd)

Estimate the answer to any given subtraction involving two 2-digit numbers to the nearest 10

Estimate the answer to any given subtraction involving two 3-digit numbers to the nearest 100

Estimate the answer to any given subtraction involving two 3-digit numbers to the nearest 10

Estimate the answer to any given multiplication involving two 2-digit numbers to the nearest 10

Estimate the answer to any given multiplication involving two 3-digit numbers to the nearest 100

Estimate the answer to any given multiplication involving two 3-digit numbers to the nearest 10

Estimate the answer to any given division involving a 2-digit number divided by a 1-digit number to the nearest 10

Estimate the answer to any given division involving a 3-digit number divided by a 1-digit number to the nearest 100

Estimate the answer to any given division involving a 3-digit number divided by a 1-digit to the nearest 10

Year 5 Objectives : Number 3

NUMBER AND PLACE VALUE

Read Roman numbers to 1000 (M) and recognise years written in Roman numerals

Remember the Roman numbers from 1 to 10

Remember the Roman symbol for 50

Remember the Roman symbol for 100

Know all Roman numbers up to 1000

ADDITION AND SUBTRACTION

Add and subtract whole numbers with up to 5 digits, including using formal written methods

Add 2 numbers with 5-digits together using column addition without exchange between units and tens

Add 2 numbers with 5-digits together using column addition, where the units, tens or hundreds when added make more than 10.

Add 3 numbers with 5-digits using column addition where the units, tens or hundreds make more than 10

Subtract a 5-digit number from another using column subtraction which requires no exchange between the units, tens, hundreds or thousands

Subtract a 5-digit number from another using column subtraction which requires exchange between the units, tens, hundreds or thousands (or any two of these)

Year 5 Objectives : Number 4

ADDITION AND SUBTRACTION

Add and subtract large numbers mentally

Add together mentally any two 2-digit numbers

Subtract any 2-digit number from a 2 or 3-digit number

Add together mentally any 2-digit and any 3-digit number

Subtract any 2-digit number from a 3 or 4-digit number

Add together mentally any two 3-digit numbers

Subtract mentally any two 3-digit numbers

Add together mentally any 1000s number and any 5-digit number

Subtract any 1000s number from a 5-digit number

MULTIPLICATION AND DIVISION

Identify multiples, including common multiples, and factors including common factors

Know all factors that make up all numbers to 100

Know and use vocabulary of prime numbers, prime factors and composite (non-prime) numbers

Describe what a prime number is

Recognise all prime numbers to 100

Explain why a number is not a prime number

Work out if a number up to 100 is a prime number and recall all prime numbers to 19

Recognise all prime numbers to 100

Explain why a number is or is not a prime number

Year 5 Objectives : Number 5

MULTIPLICATION AND DIVISION

Multiply numbers up to 4-digits by a 1 or 2-digit number using formal methods, including long multiplication

Multiply any number with 3-digits by a single digit number

Multiply any number with 4-digits by a single digit number

Multiply any number with 3-digits by a 2-digit number

Multiply any number with 4-digits by a 2-digit number

Multiply and divide mentally, drawing on known facts

Use mental applications to multiply and divide numbers making use of know number facts included in x table between x2 and x12

MULTIPLICATION AND DIVISION

Divide numbers up to 4-digits by a 1-digit number and 10 (with remainders)

Divide any number with 3-digits by a single digit number

Divide any number with 4-digits by a single digit number

Divide any number with 3-digits by a single digit number with remainder

Divide any number with 4-digits by a single digit number with remainder

Divide any number with 3-digits by 10, showing remainder where appropriate

Divide any number with 4-digits by 10, showing remainder where appropriate

Year 5 Objectives : Number 6

MULTIPLICATION AND DIVISION

Multiply and divide numbers by 10, 100 and 1000

Multiply any 2, 3, 4, 5 or 6-digit number by 10

Divide any 2, 3, 4, 5 or 6-digit number by 10

Multiply any 2, 3, 4, 5 or 6-digit number by 100

Divide any 3, 4, 5 or 6-digit number by 100

Multiply any 2, 3, 4, 5 or 6-digit number by 1000

Divide any 4, 5 or 6-digit number by 1000

Recognise and use square numbers and square roots and symbols (2) and ($\sqrt{\quad}$)

Know the square of all numbers between 2 and 12 by heart

Use the symbols (2) and ($\sqrt{\quad}$) accurately

Know the relationship between the square of a number and the square root of a number

MULTIPLICATION AND DIVISION

Solve word problems involving addition and subtraction, multiplication and division

Solve word problems involving addition with numbers up to 1,000,000

Solve word problems involving subtraction with numbers up to 1,000,000

Solve word problems involving multiplication with numbers up to 1,000,000

Solve word problems involving division with numbers up to 1,000,000

Year 5 Objectives : Number 7

FRACTIONS	
Compare and order fractions with different denominations	
Compare fractions with the same denominator, eg, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$	
Compare fractions with the denominators: 2, 4, 8	
Compare fractions with the denominators: 3, 6, 9	
Compare fractions with the denominators: 5; 10	
Work out how to provide 2 fractions with different denominators with a common denominator and then work out values: largest and smallest fraction.	
Recognise mixed numbers and improper fractions and convert one form to the other	
Recognise that a whole number can be written as fractions with the same denominator as numerator	
Change a number of mixed numbers with 1 whole number into different improper fractions: $1\frac{1}{3} = \frac{4}{3}$	
Change any mixed number up to 10 into an improper fraction	
Change any improper fraction into a mixed fraction	

FRACTIONS	
Add and subtract fractions with the same denominator and related fractions	
Add two fractions with the denominator 4, 5, 8 or 10 which add up to less than 1	
Subtract two fractions with the denominator 4, 5, 8 or 10 where the answer comes to less than 1	
Add 2 fractions with the same denominator that exceeds 1 whole eg, $\frac{2}{5} + \frac{4}{5} = 1\frac{1}{5}$	
Add two fractions with the denominators 3; 4; 5; and 10 which has an answer that exceeds 1	
Add any two fractions with the same denominator which has an answer that exceeds 1	
Multiply proper fractions and mixed fractions by whole numbers	
Multiply $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{8}$, by any number between 2 to 10.	
Multiply $\frac{2}{3}$, $\frac{3}{8}$, $\frac{2}{5}$, $\frac{3}{4}$ by any number between 2 to 10.	
Multiply any proper fraction by a number between 2 and 10	
Multiply any proper fraction by any whole number	

Year 5 Objectives : Number 8

DECIMALS	
Read and write decimal numbers as fractions (eg, $0.71 = 71/100$)	
Read and write any decimal fraction with tenths value as a fraction	
Read and write any decimal fraction with tenths and hundredths value	
Recognise and use thousandths and relate them to tenths, hundreds and decimal equivalents	
Know that 1 unit is 10 times one tenth	
Know that one tenth is ten times more than one hundredth	
Know that one hundredth is ten times more than one thousandth	
Relate tenth and hundredths numbers to thousandths, eg Four hundredths is the same as forty thousandths	
Work out what a given tenth, hundredth number is in thousandths	

Read, write, order and compare numbers with up to 3 decimal places	
Read and write any number that has up to three decimal places	
Order a set of numbers with up to three decimal places that has the same whole numbers	
Compare any number with 1 to 3 decimal places and know which is the largest and smallest	
Add and subtract numbers with up to three decimal places	
Add 2 or 3 numbers with one decimal place	
Add 2 or 3 numbers with two decimal places	
Add 2 or 3 numbers with three decimal places	
Subtract 2 numbers with one decimal place	
Subtract 2 numbers with up to 2 decimal places	
Subtract 2 numbers with up to 3 decimal places	

Year 5 Objectives : Number 9

PERCENTAGES	
Recognise the % symbol and understand that per cent relates to 'a part of a hundred'	
Know that % represents per cent	
Know that 1% is one hundredth of the amount being considered	
Know that 25%; 50% and 75% are one quarter; one half and three quarters respectively	
Write simple fractions as percentages and decimals as percentages (eg $\frac{1}{2} = 50\% = 0.5$)	
Know that 25% is the same as $\frac{1}{4}$; and that 50% is $\frac{1}{2}$ and that 75% is $\frac{3}{4}$	
Know what 10%; 20%; 30%, etc. is as a fraction	
Write 25%, 50% and 75% as decimal fractions	
Know that 33% and 66% are broadly stated as one and two thirds of the amount being looked	

Year 5 Objectives : Geometry and Measures

PROPERTIES AND SHAPE

Measure angles in degrees and draw a given angle, writing its size in degrees

Know what an angle of 90° looks like

Know what an angle of 45° looks like

Draw a given angle using a protractor and label it appropriately

Revise the terms acute and obtuse angles

Know angles are measured in degrees and identify right angles as $\frac{1}{4}$ turn (total 90°); straight line as half turn = 180° ; whole turn = 360° ; and reflex angles

Know that 90° is equivalent to quarter a turn

Know that 180° is equivalent to half a turn

Know that 360° is equivalent to a full turn

Describes exactly what a reflex angle is

PROPERTIES AND SHAPE

Recognise and compare different triangles, including isosceles, equilateral and right angles triangles

Describes an equilateral triangle

Describe an isosceles triangle

Describe a right angle triangle

Identify and name parallelogram; rhombus and trapezium

Know what a parallelogram is and describe it in mathematical terms

Know what a rhombus is and describe it in mathematical terms

Know what a trapezium is and describe it in mathematical terms

Year 5 Objectives : Geometry and Measures: 2

PROPERTIES AND SHAPE

Construct shapes from given dimensions: state and use properties of a square and rectangle

Draw a square accurately having been given the length of the side

Draw a rectangle accurately having been given the length and breadth

Draw an equilateral triangle with a given length

Draw an isosceles triangle accurately given the length of side and the base

Draw a triangle to a given set of angles and sides

Identify 3D shapes including cubes and cuboids from 2D representations

Understand relationship between square and cube; rectangle and cuboid; triangle and prism and triangle and square based pyramid

POSITION, DIRECTION and MOTION

Identify, describe and represent the position of a shape following a reflection or translation using appropriate vocabulary

Use four quadrants to reflect and translate different shapes

Year 5 Objectives : Geometry and Measures 3

MEASURES	
Add, subtract, multiply and divide units of measure (eg, length, mass, volume, money) using decimal notation	
Carry out addition problems which relate to measurement as in money; length; weight; volume	
Carry out subtraction problems which relate to measurement as in money; length; weight; volume	
Carry out multiplication problems which relate to measurement as in money; length; weight; volume	
Carry out division problems which relate to measurement as in money; length; weight; volume	
Understand and use basic equivalence between metric and common imperial units and express them in approximate terms	
Know the approximate number of metres in 1 mile	
Know the approximate relationship between a yard and a metre	
Know the approximate relationship between a pound and a gram	
Know the approximate relationship between a pint and a litre	

MEASURES	
Measure force in Newtons (N)	
Know what a Newton is and use N to represent it	
Measure the force exerted in a range of situations and measure it Newtons	
Calculate, estimate and compare the areas of squares, rectangles and related composite shapes using standard units, including cm squared (cm²) and metre squared (m²)	
Know that the area of a square or a rectangle is measured in cm ² or m ²	
Know that the area of a square is measure by multiplying the length of a side by itself	
Know that the area of a rectangle is measured by multiplying the length of the longer side by the shorter	
Use this 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	

Year 5 Objectives : Geometry and Measures 4

MEASURES

Recognise volume in practical contexts, eg, using sand and water, 1cm³ blocks or inter-blocking to build cubes and cuboids

Know that volume is measured in cm³ or m³

Use cubes to work out volume of a given shape

DATA

Complete tables and bar graphs from given information and solve problems using data presented in bar graphs, tables and simple pie charts

Know how to construct a bar graph from a set of given information

Know how to apply scales on the axes of a bar graph

Can read bar graphs with scales

Can construct own bar graph and make decisions about the scales for the axes

Know how to construct a table from a set of given information

Can read tables with given axes

Can construct own table and make decisions about the axes

Know what a pie chart is

Can read a simple pie chart with segments that are divisible by 10