# Place Value National Curriculum Statements

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

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

Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

Solve number problems and practical problems that involve all of the above

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

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

# Suggested Manageable Steps

Numbers to 10,000

Rounding to 10, 100 and 1,000

Numbers to 100,000

Compare and order numbers to 100,000

Round numbers within 100,000

Numbers to a million

Counting in 10s, 100s, 1,000s, 10,000s and 100,000s

Compare and order numbers to one million

Round numbers to one million

Negative numbers

Roman numerals

## Addition and Subtraction National Curriculum Statements

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

Add and subtract numbers mentally with increasingly large numbers

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

## Manageable Steps

Add whole numbers with more than 4 digits

Subtract whole numbers with more than 4-digits

Round to estimate and approximate

Inverse operation (addition and subtraction)

Multi-step addition and subtraction problems

## Multiplication and Division National Curriculum Statements

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers

Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers

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

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

Multiply and divide numbers mentally drawing upon known facts

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

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

Recognise and use square numbers and cube numbers, and the notation for squared ( 2 ) and cubed (3 )

Solve problems involving multiplication and division including using their knowledge of factors

and multiples, squares and cubes

Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

## Manageable Steps

Multiples

Factors

Common factors

Prime numbers

Square numbers

Cube numbers

Multiply by 10

Multiply by 100

Multiply by 10, 100 and 1,000

Divide by 10

Divide by 100

Divide by 10, 100 and 1,000

Multiples of 10, 100 and 1,000

Multiply 4-digits by 1-digit

Multiply 2-digits by 2-digits

Multiply 3-digits by 2-digits

Multiply 4-digits by 2-digits

Divide 4-digits by 1-digit

Divide with remainders

## Fractions National Curriculum Statements

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

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number

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

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and

diagrams

Read and write decimal numbers as fractions [for example, 0.71 = 71/100 ]

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

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

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

Solve problems involving number up to three decimal places

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 100, and as a decimal

Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4 , 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.

# Manageable Steps

Equivalent fractions

Improper fractions to mixed numbers

Mixed numbers to improper fractions

Number sequences

Compare fractions less than 1

Order fractions less than 1

Compare fractions greater than 1

Order fractions greater than 1

Add fractions

Add fractions within 1

Add 3 or more fractions

Add mixed numbers

Subtract fractions

Subtract mixed numbers

Subtraction – breaking the whole

Subtract 2 mixed numbers

Multiply unit fractions by an integer

Multiply non-unit fractions by an integer

Multiply mixed numbers by integers

Fraction of an amount

Using fractions as operators

Fraction problem solving

Decimals up to 2dp

Decimals as fractions

Understanding thousandths

Thousandths as decimals

Rounding decimals

Order and compare decimals

Understand percentages

Percentages as fractions and decimals

Equivalent fraction, decimal and percentages

Adding decimals within 1

Subtracting decimals within 1

Complements to 1

Adding decimals – crossing the whole

Adding decimals with the same number of decimal places

Subtracting decimals with the same number of decimal places

Adding and subtracting decimals with the same number of places problem solving

Adding decimals with a different number of decimal places

Subtracting decimals with a different number of decimal places

Adding and subtracting decimals with a different number of decimal places problem solving

Adding and subtracting wholes and decimals

Decimal sequences

Multiplying decimals by 10, 100 and 1,000

Dividing decimals by 10, 100 and 1,000

# Measurement National Curriculum Statements

Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)

Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints

Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2 ) and square metres (m2 ) and estimate the area of irregular shapes

Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]

Solve problems involving converting between units of time

Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

## Manageable Steps

Measure perimeter

Calculate perimeter

Areas of rectangles

Areas of compound shapes

Area of irregular shapes

Kilograms and Kilometres

Millimetres and millilitres

Metric units

Imperial units

Converting units of time

Timetables

What is volume?

Compare volume

Estimate volume

Estimate capacity

## Geometry – Properties of Shape National Curriculum Statements

Identify 3-D shapes, including cubes and other cuboids, from 2-D representations

Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles

Draw given angles, and measure them in degrees (o)

Identify angles at a point and one whole turn

Identify angles at a point on a straight line and 1/2 a turn (total 180o) and other multiples of 90

Use the properties of rectangles to deduce related facts and find missing lengths and angles

Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

## Manageable Steps

Measuring angles in degrees

Measuring with a protractor

Drawing lines and angles accurately

Calculating angles on a straight line

Calculating angles around a point

Calculating lengths and angles in shapes

Regular and irregular polygons

Reasoning about 3-D shapes

## Geometry – Position and Direction National Curriculum Statements

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.

## Manageable Steps

Position in the first quadrant

Translation

Translation with coordinates

Reflection

Reflection with coordinates

## Statistics National Curriculum Statements

Complete, read and interpret information in tables, including timetables.

Solve comparison, sum and difference problems using information presented in a line graph

## Manageable Steps

Read and interpret line graphs

Draw line graphs

Use line graphs to solve problems

Read and interpret tables

Two-way tables

Timetables