Number and Place Value

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

count forward 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

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

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

Addition and Subtraction

add and subtract whole numbers with more than 4 digits, including using columnar methods

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 subtractions multi-step problems in contexts, deciding which operations and methods to use and why

Statistics

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

complete, read and interpret information in tables, including timetables

Multiplication and Division

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 (non-prime) 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 know 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 1,000

Measurement – Perimeter and Area

measure and calculate the perimeter of composite rectilinear shapes in cm and m

calculate and compare the area of rectangles including squares, and including using standard units, cm^2, m^2 and estimate the area of irregular shapes

Fractions

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. Eg. 2/5 +4/5 = 6/5 = 1 1/5

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, support by materials and diagrams

read and write decimal numbers as fractions. Eg. 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'

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

solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5

solve problems which require knowing percentage and decimal equivalents of fractions with a denominator of a multiple of 10 or 25

Geometry – Properties of Shape

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

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

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

Draw given angles and measure them in degrees

Identify: angles at a point and one whole turn (total 360), angles at a point on a straight line and half a turn (total 180) other multiples of 90

Geometry – Position and Direction

identify, describe and represent the position of a shape following a reflect or translation using the appropriate language with only small inaccuracies in positioning

Measurement – Converting Units and VOlume

convert between different units of metric measure. Eg. k and m, cm and m, g and kg, l and ml

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

estimate volume and capacity. Eg. using 1cm^3 blocks to build cuboids, using water, etc.

solve problems involving converting between units of time

use all four operations to solve problems involving measure – eg. length, mass, volume, money – including scaling.