

Reasoning about the Number System

Counting

- Count in multiples of 6.
- Count in multiples of 7.
- Count in multiples of 9.
- Count in multiples of 25.
- Count in multiples of 1000.
- Count backwards through zero to include negative numbers.
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.

Value of digits

- Find 1000 more or less than a given number
- Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
- Identify, represent and estimate numbers using different representations

Convert between different units of measure:

- Kilometres to metres
- Hours to minutes
- Recognise and write decimal equivalents of any number of tenths or hundredths
- Recognise and write decimal equivalents to $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$
- 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 (through context of measures)

Ordering and comparing

- Order and compare numbers beyond 1000
- Compare numbers with the same number of decimal places up to two decimal places
- Estimate and compare different measures, including money in pounds and pence.

Rounding

- Round any number to the nearest 10
- Round any number to the nearest 100
- Round any number to the nearest 1000
- Round decimals with one decimal place to the nearest whole number

Problem Solving

- Solve number and practical problems that involve all of the above and with increasingly large positive numbers.
- Solve simple measure problems involving fractions and decimals to two decimal places using place value.
- Solve simple money problems involving fractions and decimals to two decimal places.
- 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.

Reasoning about Fractions including decimals

- Recognise and show, using diagrams, families of common equivalent fractions.
- 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 fractions with the same denominator
- Subtract fractions with the same denominator

Reasoning about Addition and Subtraction

Mental Calculations

- Add a four-digit number and ones.
- Add a four-digit number and tens.
- Add a four-digit number and hundreds.
- Add a four-digit number and thousands.
- Subtract a four-digit number and ones.
- Subtract a four-digit number and tens.
- Subtract a four-digit number and hundreds.
- Subtract a four-digit number and thousands.

Formal Written Methods

- Add numbers with up to 4 digits using the formal written methods of columnar addition
- Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate

- Estimate and use inverse operations to check answers to a calculation
- Calculate different measures, including money in pounds and pence
- Calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
- Solve simple measure and money problems involving fractions and decimals to two decimal places using addition and subtraction.

Statistics

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

Reasoning about Measures

- Measure the perimeter of a rectilinear figure (including squares) in centimetres and metres
- Find the area of rectilinear shapes by counting squares
- Read, write and convert time between analogue and digital 12- and 24-hour clocks.

Reasoning about Multiplication and Division

- Recall and use multiplication and division facts for the 6 times table
- Recall and use multiplication and division facts for the 7 times table
- Recall and use multiplication and division facts for the 9 times table
- Recall and use multiplication facts for the 11 times table
- Recall and use multiplication facts for the 12 times table
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1
- Use place value, known and derived facts to multiplying together three numbers
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two-digit numbers by a one-digit number using formal written layout
- Multiply three-digit numbers by a one-digit number using formal written layout
- Divide 2 digit numbers using 2,5 and 10 times tables – mental methods
- Divide 3 digit numbers using 2,5 and 10 times tables – mental methods
- 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.
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. (Link to 6x,60x,7x and 12x)

Reasoning about Geometry – properties of shape

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- Identify acute and obtuse angles
- 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.