

Key Objective		Developing	Secure	Greater Depth
1	To use negative numbers in context, and calculate intervals across zero	I can work out the difference between -8 and zero. I can answer questions such as 'How much colder is -5°C than 10°C ?'	I can work out the difference between 4 and -5 . I can answer questions such as 'How much warmer is -2°C than -10°C ?'	I can work out the connection between finding the difference between negative numbers and subtracting them. I can solve problems such as ordering the changes in temperature between day and night on the planets in the solar system.
2	To multiply and divide numbers with up to three decimal places by 10, 100, 1000.	I can work out $2.1 \times 10 = 21$ and $56 \div 10 = 5.6$, applying this in the context of measurement.	I can work out $2.3 \times 1000 = 2300$ and $98 \div 1000 = 0.098$, applying this in the context of metric measures.	I can calculate $0.012 \times 600 = 7.2$, applying this in a variety of contexts including measures.
3	To multiply numbers up to 4 digits by a 2 digit whole number using the written method of long multiplication.	I can multiply 3 digit by 2 digit numbers using the formal method of long multiplication, with jottings to support the process.	I can multiply 4 digit by 2 digit numbers using the formal method of long multiplication.	I can multiply up to 6 digit numbers, including decimals, by 2 digit numbers using the formal method of long multiplication.
4	To use long division to divide numbers up to four digits by a two-digit number.	I can divide 3 digit by 2 digit numbers using the formal method of long division, with supporting jottings for the layout.	I can divide 4 digit by 2 digit numbers using the formal method of long division.	I can divide up to 6 digit numbers, including decimals, by 2 digit numbers using the formal method of long division.
5	To write a fraction in its simplest terms by cancelling common factors.	I can identify that the numerator and denominator of $4/8$ can both be halved and then do so. With prompting, I can then repeat the process to obtain $1/2$. I can express halves, quarters and eighths all as eighths.	I can identify that four is a common factor for the numerator and denominator of $8/12$ and divide by it to get $2/3$. I can change $1/3$ to twelfths by multiplying both the numerator and denominator by four, and $3/4$ to twelfths by multiplying both the numerator and the denominator by three.	I can identify the common factors for the numerator and denominator of a fraction, realising that the highest common factor is needed to reach the simplest form in one step. I can express $2/3$ and $4/5$ as fifteenths, knowing that 15 is a common multiple of 3 and 5.
6	To know and identify simple fractions, decimals and percentages that have the same value.	I can recall the decimal and percentage equivalents of halves, quarters and tenths, with prompting.	I can recall the decimal and percentage equivalents of halves, quarters, thirds, fifths and tenths in a variety of contexts.	I can recall the decimal and percentage equivalents of halves, quarters, thirds, fifths and tenths in a variety of contexts, selecting the most appropriate form to use for that context and the numbers involved.
7	To add and subtract fractions and mixed numbers with different denominators.	I can add and subtract fractions with different denominators using supporting diagrams.	I can add and subtract fractions with different denominators using written methods.	I can add and subtract fractions and mixed numbers with different denominators.
8	To multiply pairs of fractions in simple cases.	I can multiply fractions using appropriate images and with prompts.	I can multiply fractions using written methods or appropriate diagrams and images.	I can show how to multiply fractions using a written method or an appropriate array.
9	To use coordinates in all four quadrants.	I can locate a point in any quadrant of a co-ordinate grid and describe the horizontal and vertical movement from the centre.	I can plot a point in any quadrant of a co-ordinate grid and describe the horizontal and vertical movement from the centre.	I can plot a point in any quadrant of a co-ordinate grid and describe the horizontal and vertical movement from the centre. I know that a change in origin would change the coordinates of any point.
10	To draw and translate simple shapes on a coordinate grid, and reflect them in the axes	I can draw the image of a shape following a translation or reflection on the coordinate grid, with prompting.	I can draw the image of a shape following a translation or reflection on the coordinate grid.	I can draw the image of a shape following a combination of translations and reflections on the coordinate grid.
11	To find percentages of quantities.	I can work out a percentage of an amount, e.g. 5% of 200 kg.	I can compare percentages and fractions of quantities, e.g. work out whether 20% off £15 is a better deal than $1/3$ off £15.	I can increase an amount by a given percentage, e.g. increase £24 by 15%.
12	To generate and describe number sequences.	I can continue a growing sequence of shapes such as T-shapes made with five squares then eight squares then 11 squares, describing how to continue the sequence.	I can continue a growing sequence of shapes such as T-shapes made with five squares then eight squares then 11 squares, describing how to continue the sequence and being able to answer questions such as 'Will there be a T-shape with 100 squares in the sequence?'	I can continue a growing sequence of shapes made of squares or triangles, describing how to continue the sequence and being able to write down a formula for the nth term.
13	To use simple formulae expressed in words.	I can work out the area of a rectangle using the formula $\text{area} = \text{length} \times \text{width}$.	I can work out the area of a rectangle using the formula $a = lw$.	I can deduce from the formula $a = lw$ that the formula for the width, if you know the area and length, is $w = a/l$.
14	To convert between standard units of length, mass and time from a smaller unit of measure to a larger unit, and vice versa.	I can solve problems using measures expressed using decimals with one decimal place, with prompting.	I can solve problems using measures expressed using decimals with up to three decimal places.	I can solve problems using measures expressed using decimals with any number of decimal places.
15	To calculate the volume of cubes and cuboids.	I can estimate the size of a cubic metre using my knowledge of the length of a metre. I can solve problems such as 'A cube measures 2 cm by 2 cm by 2 cm. How many fit inside a cube with internal measurements of 6 cm by 6 cm by 6 cm?' with prompting.	I can estimate the volume of a cuboid by comparing it with a known volume such as a cubic metre. I can solve problems such as 'A cuboid measures 4 cm by 10 cm by 3 cm. How many cubic centimetres is its volume?'	I can estimate the volume of a cuboid by comparing it with a known volume such as a cubic metre and use this to estimate its weight. I can work out how many cubic centimetres there are in one cubic metre. I can calculate the volume of a cuboid.
16	To use simple ratio to compare quantities	I can convert a recipe for two people to a recipe for four people.	I can convert a recipe for four people to a recipe for 12 people.	I can convert a recipe for four people to a recipe for ten people.
17	To solve missing angle problems involving triangles, quadrilaterals, angles at a point and angles on a straight line.	I can solve some missing angle problems that require use of 'angles at a point sum to 360° ' and 'angles on a straight line sum to 180° ', with prompting.	I can solve missing angle problems that require use of 'angles at a point sum to 360° ' and 'angles on a straight line sum to 180° '.	I can solve a wide variety of missing angle problems that require use of 'angles at a point sum to 360° ' and 'angles on a straight line sum to 180° '.
18	To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	I can solve problems such as 'There are 30 pupils in the class. One third are boys. How many boys are there in the class?'	I can solve problems such as 'Two-thirds of the class are girls and there are 18 girls. How many boys are there in the class?'	I can solve problems such as 'Three-fifths of the class are girls. There are six boys. How many girls are there in the class?'
19	To interpret and construct simple pie charts.	I can answer questions such as 'Which is the most popular pet?' from an appropriate pie chart. I can collect data and construct a pie chart to represent the results, with support and prompting. I answer questions about changes over time by interpreting line graphs.	I can answer questions such as 'There are 60 people represented on the pie chart. Estimate how many had 'dogs as pets' from an appropriate pie chart. I can construct a pie chart to represent appropriate data. I can collect data and represent it in a pie chart and interpret it. I can ask and answer questions about changes over time by interpreting line graphs.	I can write some questions that can be answered from a pie chart and some that cannot unless additional information is given. I can write some instructions for constructing a pie chart to represent appropriate data. I can collect data and represent it in a pie chart and interpret it. I can investigate questions about changes over time by interpreting line graphs.
20	To calculate and interpret the mean as an average of a set of data.	I can calculate the mean of a set of data collected from real life situations.	I can calculate the mean of a set of data collected from real life situations and draw conclusions based on my answers.	I can calculate the mean of a set of data collected from real life situations and draw conclusions based on my answers. I recognise when a result is not in line with expectations.