What Prior Knowledge should students have?

- 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;
- 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
- add and subtract fractions with the same denominator and multiples of the same number;
- complete, read and interpret information in tables, including timetables
- use the properties of rectangles to deduce related facts and find missing lengths and angles;

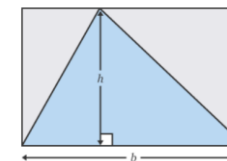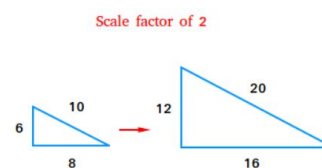## What Skills will students learn (Disciplinary Knowledge)

- How to draw 2D shapes accurately.
- How to estimate and check the answer.
- How to use the formal written method of long multiplication to calculate HTO x TO
- How to use the formal written method of division to calculate ThHTO ÷ TO
- How to use mental methods to multiply a decimal by a whole number.
- How to multiply a decimal by a 1-digit number using the formal written method of short multiplication
- How to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- How to use ratios to solve problems and solve scale factor problems
- How to interpret and draw pie charts and use them to solve problems
- How to use the formal written method to divide a decimal by a 2-digit number.

What key knowledge will be taught (Substantive Knowledge)

- To name angles meeting at a point, on a straight line or vertically opposite and find missing angles
- To convert between grams and kilograms, kilograms and tonnes
- To divide proper fractions by whole numbers
- To multiply simple pairs of fractions writing the answer in its simplest form
- To calculate and interpret the mean as an average of a set of data
- To be able to draw and name the parts of a circle
- To use the formula for the area of a rectangle to calculate the area of a triangle and parallelogram

Key Vocabulary	Definition
Proper fraction	A proper fraction is a fraction whose numerator is less than the denominator. A proper fraction always lies between 0 and 1 since the denominator is larger than the numerator.
Ratio	A ratio says how much of one thing there is compared to another thing. ratio 3:1. There are 3 blue squares to 1 yellow square
Scale factor	Scale factor is a number by which the size of any geometrical figure or shape can be changed with respect to its original size. It is used to draw the enlarged or reduced shape of any given figure. Scale factor helps in changing the size of the figure and not its shape.
Mean	Mean is a type of average used to calculate an average of a given data set. To find the mean average value or arithmetic mean, you must first add up all the numbers. Then you divide this sum of the values by the number of data points (or total number of numbers).
Simplest form	A fraction is in simplest form when the top and bottom cannot be any smaller, while still being whole numbers.
Formula	A formula is a mathematical rule or relationship that uses letters to represent amounts which can be changed – these are called variables.

Calculation Guidance

Scale factor of 2

$$\text{Triangle area} = \frac{bh}{2}$$