

1. The first 12 prime numbers

2	17
3	19
5	23
7	29
11	31
13	37

2. Enlargement

Enlargement - A transformation which alters the size of a shape in a given ratio known as a **scale factor**

Scale factor - a multiplier which indicates how much a shape is enlarged by.

Enlargement by a **scale factor** greater than 1 **increases** in size

Enlargement by a positive **scale factor** less than 1 decreases in size

When one shape is an enlargement of another then the two shapes are **similar**.

Centre of enlargement - The point from which a shape is enlarged from and determines the **position** of the new shape.

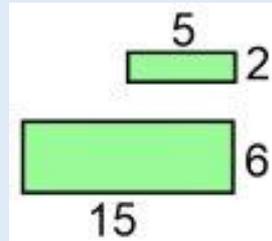
3. Similarity

Similar – Two or more shapes are mathematically similar if their corresponding sides are proportional and corresponding angles are equal

Similar Triangles – Triangles which are mathematically similar, they are in the same ratio

Corresponding Sides – sides that are between the same angles on two similar shapes. They are in the same ratio

Negative Scale Factor – when a shape is enlarged on the opposite side of the centre of enlargement



4. Proportion

Double means to multiply by 2
Treble means to multiply by 3

Currency is the money used by a country.
Sterling is the British currency

Exchange rate is the ratio between two currencies.
 e.g. £1 = \$1.20

Direct Proportion – as one amount increases, the other amount increases at the same rate

Inverse Proportion – as one amount increase, the other amount decreases

Unitary – one of something

5. Ratio

Ratio – A comparison of one part of a whole to another part. The ratio of a to b is written as a:b

Unit ratio – A ratio in the form **n:1** or **1:n**, where one side of the ratio is equal to 1

In a ratio all parts are of **equal size**.
 We can **share** a quantity into a given ratio

Ratios can also be written as fractions e.g. if the ratio of red to green counters is 3:5, then $\frac{3}{8}$ of the counters are red

Equivalent ratios - Ratios with the same proportion of items using different values e.g. 1:2 and 3:6

Simplify – Simplifying a ratio is achieved by finding an equivalent ratio which contains smaller integers. E.g. 3:12 can be simplified to 1:4

6. Compound measures

Compound measures – A combination of two or more different **units**
 e.g. **Speed** is measured using **distance and time**

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

The **units of speed** most commonly used are:
 mph – miles per hour
 m/s – metres per second
 km/h – kilometres per hour

Density is measured using **mass and volume**

$$\text{Mass} = \text{density} \times \text{volume}$$

The units of density most commonly used are:
 g/cm³ – grams per cubic centimetres
 Kg/m³ – kilograms per cubic metre