

1) Times Tables

$7 \times 1 = 7$

$7 \times 2 = 14$

$7 \times 3 = 21$

$7 \times 4 = 28$

$7 \times 5 = 35$

$7 \times 6 = 42$

$7 \times 7 = 49$

$7 \times 8 = 56$

$7 \times 9 = 63$

$7 \times 10 = 70$

$7 \times 11 = 77$

$7 \times 12 = 84$

2) Ratio

Ratio is a part to part comparison.
The ratio of a to b is written as a:b

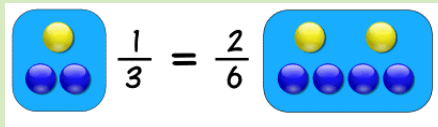
You say the ratio 2:5 as “two to five”
This means for every 2 **parts** of one thing, there are 5 of another.

“:” is called a **colon**.

A **unit ratio** is in the form 1:n
Unit ratios are useful for making comparisons.

In ratios, all parts are of **equal size**
This allows us to **share** quantities into given ratios.

Ratios can also be written as fractions



1:2

2:4

“For every one yellow counter there are two blue counters” or “there are twice as many blue counters as yellow counters”
This diagram also shows **equivalent ratios**.

Ratios are often written in their **simplest form**
e.g. 15:20 would simplify to 3:4

4) Proportion

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

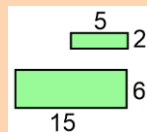
Currency is the money used by a country.
Sterling is the British currency .

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

Similar shapes have corresponding sides that are proportional and corresponding angles are equal.

The **scale factor** is the ratio of two corresponding sides.

e.g. the scale factor between these two rectangles is 3, as $15 \div 6 = 3$ and $6 \div 2 = 3$



5) Fractions 1

The **numerator** is the top number in a fraction. It tells us how many parts we have.

The **denominator** is the bottom number in a fraction. It shows how many parts the item has been split into.

$$\frac{3}{5}$$

← numerator
← denominator

Unit fractions have a numerator of 1 e.g. $\frac{1}{4}$

Non-unit fractions have a numerator that is greater than 1
e.g. $\frac{5}{7}$

A **mixed number** has a whole part and a proper fractional part
e.g. $5\frac{3}{7}$

An **improper** fraction has a numerator that is greater than the denominator e.g. $\frac{7}{4}$

Equivalent fractions have the same value. E.g. $\frac{3}{5} = \frac{9}{15}$

3) Circles

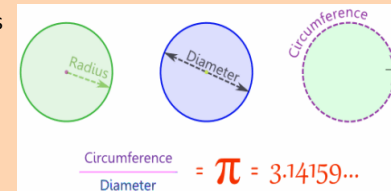
Perimeter is the sum of the side lengths of a shape.

Circumference is the perimeter of a circle.

An **arc** is a section of the circumference.

The **diameter** of a circle is the distance from one part of the circumference to another, passing through the centre.

The **radius** is the distance from the centre of the circle to the circumference. It is half the diameter.



π Pi is how many times bigger the circumference is compared to the diameter.

π = 3.14 to two decimal places.

A **semi-circle** is half of a circle.

6) Fractions 2

A **product** is made by multiplying two or more numbers together.

e.g. $5 \times 7 = 35$ 35 is the product

The **square** of a number is the product of a number and itself.

e.g. $7^2 = 7 \times 7 = 49$

Commutative means a calculation can be done in any order to give the same result.
Multiplication is **commutative** as $3 \times 5 = 15$, and $5 \times 3 = 15$

The **quotient** is the result of a division e.g. $70 \div 10 = 7$, 7 is the quotient.

Two numbers whose product is 1 are **reciprocals** of each other.

e.g. the reciprocal of 3 is $\frac{1}{3}$ because $3 \times \frac{1}{3} = 1$