

# Y5 Multiplication and division Knowledge organiser

## Division (÷)

**Division** (÷) – An operation in which a number is shared or grouped equally into a number of parts. Division is the inverse (opposite) of multiplication.

**Divide** – This means to carry out the process of division.

- $15 \div 3 = 5$

**Remainder** – If a number cannot be divided exactly by another number, then there is a whole number answer with an amount left over.  $23 \div 4 = 5$  remainder 3

**Factor** – A whole number that divides exactly into another number without leaving a remainder.

- 4 is a factor of 12 as it divides exactly into 12. 12 has six factors: 1, 2, 3, 4, 6 and 12

**Common factor** – A number which is a factor of two or more numbers. These are factors of 12 and 18:

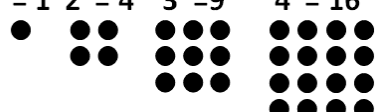
- 12: 1, 2, 3, 4, 6, 12
- 18: 1, 2, 3, 6, 9, 18
- The common factors are 1, 2, 3, 6

**Prime number** – Any whole number, apart from 1, that can only be divided by itself and by 1 without leaving a remainder. This means it only has 2 factors, itself and 1. Prime numbers to 100 are: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

**Composite numbers** are whole numbers that have more than two factors. Whole numbers that are not prime are composite numbers.

**Square number** – A square number is formed when a number is multiplied by itself. A square number can be arranged as a group of dots in the shape of a square. To show a number is squared, a small number 2 is written above the number.

$1^2 = 1$     $2^2 = 4$     $3^2 = 9$     $4^2 = 16$



## Multiplication (X)

**Multiplication** – Multiplication is the operation of adding a number to itself a given number of times (repeated addition). With multiplication you multiply two numbers together.

**Multiply** – This means to carry out the process of multiplication.

- $5 \times 4 = 20$
- 5 multiplied by 4, or 5 times 4, can be calculated by adding 5 four times
- $5 + 5 + 5 + 5 = 20$

**Multiple** – A multiple is a number made by multiplying together two other numbers. If one number divides exactly into another number, the second is a multiple of the first.

15 is a multiple of 5 because  $3 \times 5 = 15$

All multiples of 5 end in 0 or 5

**Common multiple** – If two or more numbers have some of the same multiples, the multiples they both have are known as common multiples.

- Multiples of 3 include: 3, 6, 9, 12, 15, 18, 21, 24
- Multiples of 4 include: 4, 8, 12, 16, 20, 24, 28
- Common multiples of 3 and 4 include: 12 and 24

**Product** – When two or more numbers are multiplied together, the answer is the product of those numbers. The product of 3 and 5 is 15 ( $3 \times 5 = 15$ )

**Cube numbers** – The product of three equal numbers. To show a number is cubed, a small number 3 is written above the number.

$$4^3 = 4 \times 4 \times 4$$

$$4^3 = 64$$

**Related calculations**

$8 \times 9 = 72$	$9 \times 8 = 72$
$80 \times 9 = 720$	$90 \times 8 = 720$
$72 \div 9 = 8$	$72 \div 8 = 9$
$720 \div 9 = 80$	$720 \div 8 = 90$