

# Use Simple Formulae

Formulae = Plural of **Formula**

A **formula** is a rule written with mathematical symbols.

The **formula** for finding the area of a rectangle:  $\text{Area} = w \times h$   
(width  $\times$  height)

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# Generate and Describe Linear Number Sequences

4    7    10    13

Linear number  
sequence.

1<sup>st</sup> term is 4.

Step is 3.

1<sup>st</sup> term = step + 1

nth term = 3 + 1

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# Express Missing Number Problems Algebraically

This is a missing number problem:

What number has fourteen subtracted from it to make twenty-three?

Algebraically, it is expressed as:  $n - 14 = 23$

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# Find Pairs of Numbers that Satisfy an Equation with Two Unknowns


This means that you may see an equation, like the one below, with two unknown numbers.

$$x + y = 31$$

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# Enumerate Possibilities of Combinations of Two Variables

This means to specify and name all of the possibilities an answer could be.

$$x + y = 9$$


Two Variables

$$\begin{array}{ll} 0 + 9 = 9 & 4 + 5 = 9 \\ 1 + 8 = 9 & 6 + 3 = 9 \\ 2 + 7 = 9 & 7 + 2 = 9 \\ 3 + 6 = 9 & 8 + 1 = 9 \end{array}$$

etc.

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# Algebra

A strand of mathematics that substitutes letters for numbers.  
It becomes a puzzle in which you have to find the value.

$$x + 5 = 17$$

$$x = 12$$

$$2 + y = 4$$

$$y = 2$$

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# Functions

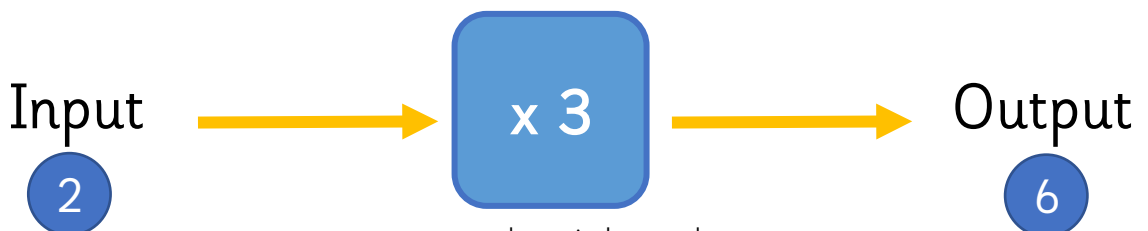
A special relationship or rule.  
It is like a machine that has an input and output.  
A function performs the calculation.

Multiplying by 5 is a function.

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# Function Machine

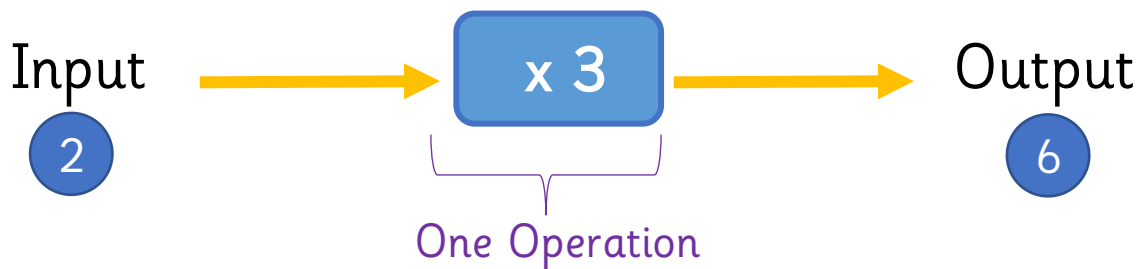
A way of visualising functions and their inputs and outputs.



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# One-Step Function Machine

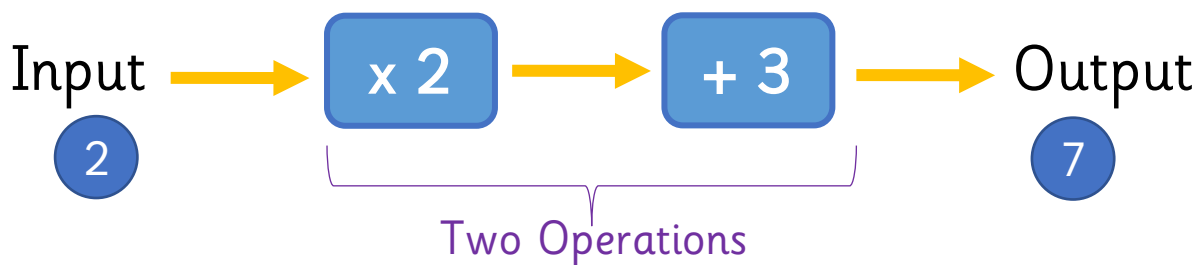
When you perform just one operation on the input.



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# Two-Step Function Machine

When you perform *two* operations on the input.



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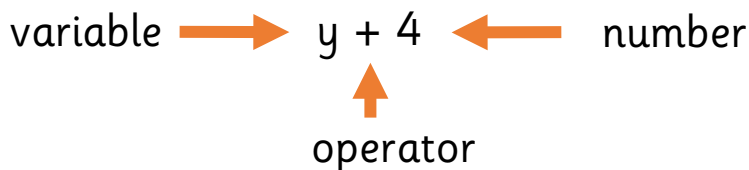
# Operator



An operator is a symbol:  $+$   $-$   $\times$   $\div$



It shows an operation (what we want to do with the numbers).



# Value

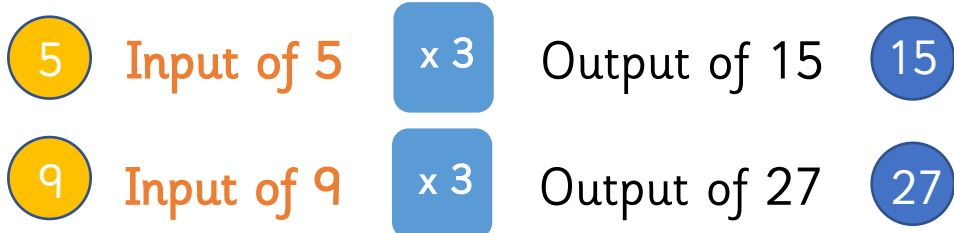
A number or the result of a calculation which tells you how much something is worth.

$9 \times 3$  gives the **value of 27**.

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# Input

A variable of a function that affects the output.



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# Output

A variable of a function that affects the input.



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# Equation

An equation says that two things are equal.

$$y - 5 = 15$$

What is on the left ( $y - 5$ ) needs to equal what's on the right (15).

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# One-step Equation

An equation that takes one step to solve.

$x$	$x$	$x$
12		

$$3x = 12$$

$$x = 4$$

$$3 \times 4 = 12$$

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# Two-step Equation

An equation that takes two steps to solve.

$$2y + 1 = 5$$

Step 1: Subtract 1

Step 2: Divide by 2

$$2y = 4$$

$$4 \div 2 = 2$$

$$y = 2$$

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# Variable

A symbol or number that is not yet known.

Variables can change.

$$x + 34 = 40 \quad 15y - 22 = 13$$

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# Formula

A rule or fact written with mathematical symbols.

$$P = 2l + 2w$$

$$E = 20 + 1.4k$$

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# Algebraic Expressions

A mathematical phrase that can contain ordinary numbers, variables, and operators.

variable  $\longrightarrow$   $y + 4$   $\longleftarrow$  number

$\uparrow$   
operator

$a \times 5$  becomes  $5a$

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Algebra Year 6

## Algebra

A strand of mathematics that substitutes letters for numbers. It becomes a puzzle in which you have to find the value.

$$x + 5 = 17 \quad 2 + y = 4$$

$$x = 12 \quad y = 2$$

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Algebra Year 6

## Functions

A special relationship or rule. It is like a machine that has an input and output. A function performs the calculation.

Multiplying by 5 is a function.

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Algebra Year 6

## Function Machine

A way of visualising functions and their inputs and outputs.

Input  $\rightarrow$   $\times 3$   $\rightarrow$  Output

2  $\rightarrow$  6

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Algebra Year 6

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Algebra Year 6

## One-step Equation

An equation that takes one step to solve.

x	x	x
12		

$$3x = 12 \quad x = 4 \quad 3 \times 4 = 12$$

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Algebra Year 6

## Two-step Equation

An equation that takes two steps to solve.

$$2y + 1 = 5$$

Step 1: Subtract 1  
Step 2: Divide by 2

$$2y = 4$$

$$4 \div 2 = 2$$

$$y = 2$$

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Algebra Year 6

## One-Step Function Machine

When you perform just one operation on the input.

Input  $\rightarrow$   $\times 3$   $\rightarrow$  Output

2  $\rightarrow$  6

One Operation

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Algebra Year 6

## Two-Step Function Machine

When you perform two operations on the input.

Input  $\rightarrow$   $\times 2$   $\rightarrow$   $+ 3$   $\rightarrow$  Output

2  $\rightarrow$  7

Two Operations

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Algebra Year 6

## Operator

An operator is a symbol:  $+$   $-$   $\times$   $\div$

It shows an operation (what we want to do with the numbers).

variable  $\rightarrow$   $y + 4$   $\leftarrow$  number

operator

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Algebra Year 6

## Variable

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Variables can change.

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Algebra Year 6

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A rule or fact written with mathematical symbols.

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Algebra Year 6

## Algebraic Expressions

A mathematical phrase that can contain ordinary numbers, variables, and operators.

variable  $\rightarrow$   $y + 4$   $\leftarrow$  number

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a  $\times$  5 becomes 5a

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Algebra Year 6

## Value

A number or the result of a calculation which tells you how much something is worth.

$9 \times 3$  gives the value of 27.

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Algebra Year 6

## Input

A variable of a function that affects the output.

5 Input of 5  $\times 3$  Output of 15 15

9 Input of 9  $\times 3$  Output of 27 27

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Algebra Year 6

## Output

A variable of a function that affects the input.

2 Input of 2  $\times 3$  Output of 6 6

7 Input of 7  $\times 3$  Output of 21 21

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## Year 6 – Algebra Vocabulary Assessment

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Algebra		Functions		Function Machine	
One-step Function Machine		Two-step Function Machine		Operator	
Value		Input		Output	
Equation		One-step Equation		Two-step Equation	
Variable		Formula		Algebraic Expressions	

## Year 6 – Algebra Vocabulary Assessment

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