Prior Knowledge			
1	Variable	x	Any letter used to stand for an unknown number.
2	Term	$3x$	Part of an expression, it may be a number, a letter or a product of both.
3	Expression	$3(2x - 4)$	An expression is one or a group of terms and may include variables, constants, operators and brackets.
4	Like terms	**2y 10y y -y**	Like terms are terms which have the same variable, they can have a different number or sign. Like terms can be collected together by adding or subtracting.
5	Expand brackets	Expand $3(x - 4)$ $3(x - 4) = 3 \times (x - 4)$ $= 3 \times x + 3 \times -4$ $= 3x - 12$	To expand expressions with brackets, multiply everything inside the bracket by the number outside.
6	Formula	$E = mc^2$	A formula shows the relationship between different variables. It is written with an equals sign.
Core Knowledge			
7	Index/indices	index, exponent, power or order $5^4 = 5 \times 5 \times 5 \times 5 = 625$ base expanded value	An index is a small number placed to the upper-right of a base number which shows how many copies of the base number are multiplied together.
8	Index form	$3 \times 3 \times 3 \times 3 = 3^4$ and $x \times x \times x \times x \times x = x^5$	Write a product using indices.
9	Factorise	Expand $5(a + 2) = 5a + 10$ Factorise	Factorising is the inverse of expanding brackets. To factorise an expression, find the HCF of the terms and write it outside of a bracket. Divide the terms by the HCF.
10	Inverse function	$2 \rightarrow \boxed{+3} \rightarrow 5$ $2 \leftarrow \boxed{-3} \leftarrow 5$	The inverse function reverses the effect of the function.
11	Equation	$5x + 10 = 35$	An equation contains an unknown number (variable) and an equals sign.
12	Solve	Solve the equation $x + 3 = 7$. Check your solution. $x \rightarrow \boxed{+3} \rightarrow 7$ $4 \leftarrow \boxed{-3} \leftarrow 7$ $x = 4$ Check: $x + 3 = 4 + 3 = 7$ ✓	To solve an equation, work out the value of the variable. Use inverse functions to solve and check your solution by substituting into the original equation.
13	Solving 2-step equations	Solve the equation $2a + 1 = 9$ using a function machine. Check your solution. $a \rightarrow \boxed{\times 2} \rightarrow \boxed{+1} \rightarrow 9$ $a \leftarrow \boxed{\div 2} \leftarrow \boxed{-1} \leftarrow 9$ $9 - 1 = 8$ $8 \div 2 = 4$ $a = 4$ Check by substituting $a = 4$ back into $2a + 1$. Check: $2a + 1 = 2 \times 4 + 1 = 8 + 1 = 9$ ✓	Write a 2 step equation as a function machine, the use inverse functions to solve.

| 14 | Balance method | Solve the equation $x + 3 = 8$.

$x + 3$ = 8

$x + 3 - 3$ = $8 - 3$

$x + 3 - 3 = 8 - 3$
$x = 5$
Check: $x + 3 = 5 + 3 = 8$ ✓ | The balance method is a powerful way to solve many equations.
Use the same inverse operation on both sides of an equals sign. This keeps both sides equal. |