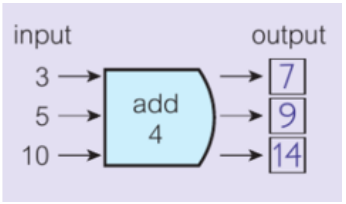
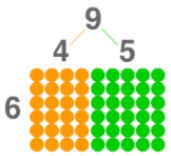
KS3 1: Unit 3 Expressions, functions and formulae **Knowledge Organiser**

Core Knowledge			
1	Function		A function is a mathematical relationship between 2 sets of numbers.
2	Function machine		A function machine is a visual representation of a function. It consists of inputs, rules and outputs.
3	Input		Numbers that go into a function machine.
4	Output		Numbers that come out of a function machine.
5	Variable	x	Any letter used to stand for an unknown number.
6	Term	$3x$	Part of an expression, it may be a number, a letter or a product of both.
7	Expression	$3(2x - 4)$	An expression is one or a group of terms and may include variables, constants, operators and brackets.
8	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.
9	Sum	3 + 5 = 8	To find the sum, you add.
10	Product	4 x 6 = 24	To find the product, you multiply.
11	Index form	$4 \times 4 = 4^2$ (4 squared)	The index is the small number written up and to the right of a number. It shows the power of the number.
12	Distributive law	6 x (4 + 5) = (6 x 4) + (6 x 5) 6 x 9 = 24 + 30 54 = 54 	The Distributive Law says that multiplying a number by a group of numbers added together is the same as doing each multiplication separately.
13	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.
14	Formula	$E = mc^2$	A formula shows the relationship between different variables.
15	Substitute		Replace variables with known values.
Depth			
16	Coefficient	3y has a coefficient of 3	The number which multiplies a variable
17	Equivalent expressions	4(a + 4) and 4a + 16 are equivalent For example, if a = 2: 4(2 + 4) = (4 x 2) + 16 8 + 16 = 8 + 16 24 = 24 *The value of both expressions is 24.*	Expressions which simplify to an equal value.