

## Topic: Algebra

Topic/Skill	Definition/Tips	Example
1. Expression	A mathematical statement written using <b>symbols, numbers</b> or <b>letters</b> ,	$3x + 2$ or $5y^2$
2. Equation	A statement showing that <b>two expressions are equal</b>	$2y - 17 = 15$
3. Identity	An equation that is <b>true for all values</b> of the variables  An identity uses the symbol: $\equiv$	$2x \equiv x+x$
4. Formula	Shows the <b>relationship</b> between <b>two or more variables</b>	Area of a rectangle = length x width or $A = L \times W$
5. Simplifying Expressions	<b>Collect 'like terms'</b> .  Be careful with negatives. $x^2$ and $x$ are not like terms.	$2x + 3y + 4x - 5y + 3$ $= 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$
6. $x$ times $x$	The answer is $x^2$ not $2x$ .	Squaring is multiplying by itself, not by 2.
7. $p \times p \times p$	The answer is $p^3$ not $3p$	If $p=2$ , then $p^3=2 \times 2 \times 2=8$ , not $2 \times 3=6$
8. $p + p + p$	The answer is $3p$ not $p^3$	If $p=2$ , then $2+2+2=6$ , not $2^3 = 8$
9. Expand	To expand a bracket, <b>multiply</b> each term <b>in the bracket</b> by the expression <b>outside</b> the bracket.	$3(m + 7) = 3m + 21$
10. Factorise	The <b>reverse</b> of <b>expanding</b> . Factorising is writing an expression as a product of terms by ' <b>taking out</b> ' a <b>common factor</b> .	$6x - 15 = 3(2x - 5)$ , where 3 is the common factor.