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| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Algebra** |
| 1. Expression | A mathematical statement written using **symbols**, **numbers** or **letters**, | 3x + 2 or 5y2 |
| 2. Equation | A statement showing that **two expressions are equal** | 2y – 17 = 15 |
| 3. Identity | An equation that is **true for all values** of the variables  An identity uses the symbol: | *2x ≡ x+x* |
| 4. Formula | Shows the **relationship** between **two or more variables** | Area of a rectangle = length x width or A= LxW |
| 5. Simplifying Expressions | **Collect ‘like terms’.**  Be careful with negatives.  and are not like terms. |  |
| 6. times | The answer is not . | Squaring is multiplying by itself, not by 2. |
| 7. | The answer is not | If p=2, then =2x2x2=8, not 2x3=6 |
| 8. | The answer is 3p not | If p=2, then 2+2+2=6, not |
| 9. Expand | To expand a bracket, **multiply** each term **in the bracket** by the expression **outside** the bracket. |  |
| 10. Factorise | The **reverse** of **expanding**.  Factorising is writing an expression as a product of terms by ‘**taking out’ a common factor**. | , where 3 is the common factor. |

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| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Equations and Formulae** |
| 1. Solve | To find the **answer**/value of something  **Use inverse operations** on both sides of the equation (balancing method) until you find the value for the letter. | Solve  Add 3 on both sides  Divide by 2 on both sides |
| 2. Inverse | **Opposite** | The inverse of addition is subtraction.  The inverse of multiplication is division. |
| 3. Rearranging Formulae | **Use inverse operations** on both sides of the formula (balancing method) until you find the expression for the letter. | Make x the subject of  Multiply both sides by z  Add 1 to both sides  Divide by 2 on both sides  We now have x as the subject. |
| 4. Writing Formulae | **Substitute letters for words** in the question. | Bob charges £3 per window and a £5 call out charge.  Where N=number of windows and C=cost |
| 5. Substitution | **Replace letters with numbers**.  Be careful of . You need to square first, then multiply by 5. | Find:  1.  2.  3. |

**Knowledge Organiser**