**7(3) NUMBER into ALGEBRA**

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| **Title** | Writing Equivalent Expressions |
| **Hours** | 1 |
| **Aims** | * Writing Equivalent Expressions * Simplifying Expressions * Expanding Brackets * Factorising * Substitution |
| **Pedagogy** | * Fluency |
| **Activity**  **(details)** | Starter  3n + 12  If n = 4 what is the value of this expression? How did you work it out?  If n = - 4 what is the value of this expression? How did you work it out?  What must n be if the value of this expression is 42? How did you work it out?  Use these questions to generate a discussion.  Main Activity  Show pupils the expression 3n + 12. Ask them to write an equivalent expression on their white boards. Record their responses on the board. Where there are mistakes as the class to suggest ways to correct the mistake, e.g. ask what could be added to the expression to make it equivalent. Ask pupils how many equivalent expressions they think there are. Lead into a discussion about what it means to simplify an expression. Also use this opportunity to introduce / remind pupils of the meaning of brackets in an expression.  Pupils to then create equivalent expressions spider diagrams, using substitution to check that their expressions are equivalent.  Pupils can choose the level of challenge by finding expressions equivalent to either  15n + 9 or 36n - 30 or 6n2 + 9  The task is differentiated further through the kind of expressions that pupils write:-  Task A  Using the symbols for addition and subtraction pupils write as many different expressions as they can for their chosen expression.  Task B  Using the symbols for addition, subtraction, multiplication and division pupils write as many different expressions as they can for their chosen expression.  Task C  Using the symbols for addition, subtraction, multiplication and division and using brackets and indices, pupils write as many different expressions as they can for their chosen expression.  *(The examples of pupils work can be used to demonstrate to pupils what is meant by an equivalent expressions spider diagram.)*  Plenary  Ask pupils to correct the mistakes in the following statements:-  12 – g – 3 = g - 9  a + a + a – a + 2 – 8 = 4a + 6  4b + 2 = 4b + 2  Ask pupils to reflect on their understanding. |
| **>H** | **Using the symbols for addition, subtraction, multiplication and division and also using brackets and indices pupils write as many different expressions as they can for 6n2 + 9** |
| **H** | Using the symbols for addition, subtraction, multiplication and division and also using brackets, pupils write as many different expressions as they can for 36n-30 |
| **M** | **Using the symbols for addition, subtraction, multiplication and division pupils write as many different expressions as they can for 36n-30** |
| **L** | **Using the symbols for addition and subtraction pupils write as many different expressions as they can for 36n-30** |
| **<L** | Using the symbols for addition and subtraction pupils write as many different expressions as they can for 15n + 9 |