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| **Key Topics and Learning Sequence** | | | | | |
| **= First Steps** | **= Moving On** | | **= Stretch** | **= Challenge** | |
| **1. Using the Grid**   1. Explore how the grid works in **all directions.** 2. Know that the numbers on the outside correspond to **factors**. 3. Can write multiple journeys with **number** from a given starting point. 4. Can write multiple journeys with a variable from a given starting point | **2. Equivalence**   1. Write **equivalent** calculations 2. **Translate** between **algebraic expressions** and worded descriptions 3. Write equivalent **algebraic expressions**   Understand the **identity** | **3. Simplify expressions**   1. Collect **like terms** involving one or more **variable** or a combination of a **variable** with a number 2. Collect like termsinvolving **negatives** 3. Collect like termsinvolving terms with different **powers** 4. Collect like termsin **context** | **4. Factorising**   1. **Factorise** a single bracket when the factor is the same as the **coefficient** 2. Factorise a single bracket by taking out a numerical **HCF** 3. Factorise a single bracket by taking out an **algebraic HCF** 4. Factorise an **expression** when the **common factor** is non single term | | **5. Substitution**   1. Substitute with **positive** integers 2. Substitute with **negative** integers 3. Substitute with **decimals** and **fractions** 4. Substitute with expressions involving **powers** and **negatives** |
| **How does this unit fit into your mathematical learning journey?** | | | **Further Exploration, Enrichment and Cultural Capital** | | |
| You had an insight into Algebra, in the **Language of Maths** unit earlier in the year. You will now explore this further to secure your knowledge on the basics of Algebra to help you make **logical** decisions and **solve problems** mathematically. This is developed further in **Year 8** when we learn about more algebra in the unit called **Grid Algebra II.** | | | **Reading:**  [**https://nrich.maths.org/6485**](https://nrich.maths.org/6485)(article on origins of algebra)  **Enrichment:**  Can you use your knowledge of problem solving and logic to develop real world maths skills in the beautiful countryside? [**https://www.audley-end-railway.co.uk**](https://www.audley-end-railway.co.uk) | | |

**LPS Mathematics: Year 7 Unit 5 – Grid Algebra I (Expressions)**

**Enquiry Question:** **What is the point of algebra?**

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**Date: Initial Thoughts:**

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**Date: New Thoughts:**

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**Date: Final Thoughts:**

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