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| **Key Topics and Learning Sequence** | | | | | | |
| **= First Steps** | **= Moving On** | | **= Stretch** | | **= Challenge** | |
| **1. A maths classroom (embedded throughout sequence)**   1. **Discussion** in a maths classroom-talk partners. 2. Working in the middle- effective **teamwork**. 3. Asking questions, giving explanations- contributing to the team. 4. **Communicating mathematical thinking- oracy and vocabulary**.   Working **systematically**. | **2. Order of operations**   1. Addition and subtraction as **inverses** with equal precedence. 2. Multiplication and division as **inverses** with equal precedence. 3. Understanding the order of **arithmetic operations**   Brackets and grouping. | **3. Types of number.**   1. **Odd** and **even** numbers 2. **Square**, **cube** and **prime numbers** 3. **Factors** and **multiples** 4. **Triangular numbers** 5. The origin and meaning of **zero**   Investigations and **reasoning** with number. | | **4. Understanding negative numbers**   1. **Negative, minus, subtract, difference**- what is the difference? 2. Negatives on a number line. 3. Adding and subtracting with negatives. 4. Multiplying and dividing with negatives. | | **5. The Fundamental Theorem of Arithmetic**   1. What is special about **prime numbers?** 2. The building blocks of all numbers-**the Fundamental Theorem of Arithmetic.** 3. Finding the **prime factorisation** of any number. 4. Using **index form** to write the **prime factorisation** of any number. 5. Thinking with primes. |
| **How does this unit fit into your mathematical learning journey?** | | | **Further Exploration, Enrichment and Cultural Capital** | | | |
| This unit of work will deepen your understanding of whole numbers, building on what you learned at primary school. In particular, it will help you understand the special importance of **prime numbers** and develop your understanding of the **order of operations** and **negative numbers**. You will use this in almost all the maths you go on to study afterwards. Throughout you will also build your skill in **working in teams** in a maths classroom- skills which will help you throughout your learning journey in maths. | | | **Reading:**  **The history of negative numbers:** <https://nrich.maths.org/5961>  **Enrichment:**  **Origins of zero and negatives in Indian mathematics:**  <https://www.youtube.com/watch?v=pElvQdcaGXE&index=5&list=PLlxVFemWlyMJauDiYgfoRzA_vAQFOCEoB>  **Cultural Capital:** rooms 55 and 56 in the British museum (free) showing some of the first mathematics ever written down. | | | |

**LPS Mathematics: Year 7 Unit 1 – Integers and building a Maths classroom**

**Enquiry Question:** **What are the elements that all whole numbers are made of?**

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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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