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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.
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| **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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