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| **Key Topics and Learning Sequence**  |
| **= First Steps** |  **= Moving On** |  **= Stretch** |  **= Challenge** |
| **1. Rational numbers and equivalence**1. What is a **rational number**- representing fractions with diagrams and on number line
2. **Equivalence**- writing rational numbers in different but equivalent form and ordering and **simplifying** them
3. **Mixed numbers** and **improper** fractions
 |  **2. Arithmetic with fractions**1. **add/subtract fractions** and how do we know
2. **multiply fraction**s, how we do know, and the importance of the word **OF**
3. **Dividing** fractions - understanding using equivalent fractions and how do we know
4. **Strategies for ordering and comparing decimals**
5. All arithmetic with mixed numbers
6. Solving problems with fractions
 |  **3. Connecting fractions with decimals**1. Decimals as a way of writing fractions
2. Understanding **place value** - powers of 10.
3. Decimal arithmetic – adding and subtracting
4. Decimal arithmetic- multiplying and dividing
5. Problems with decimals in context- money
 |  **4. Connecting fractions with percentages**1. What is a **percentage**?
2. Finding percentages using equivalent fractions
3. **Converting** fractions, decimals and percentages.
4. Using fractions to solving problems with percentages.
 | **5. Irrational numbers (extension)**1. Are all numbers **rational?**
2. The square root of 2
3. A whole universe of **irrational numbers**
4. Approximating irrational numbers.
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| **How does this unit fit into your mathematical learning journey?** | **Further Exploration, Enrichment and Cultural Capital** |
| This unit extends work you have already done on whole numbers in the unit **Integers**, to **fractions, decimals and percentages** and helps you understand the connections between these. In **year 8**, we meet more of these ideas and become **fluent in arithmetic** with them. You will use these skills in almost all the maths you do later. | **Reading: The Dangerous Ratio (article)** <https://nrich.maths.org/2671>**Al Uqlidisi and the origin of decimals** <https://mathshistory.st-andrews.ac.uk/Biographies/Al-Uqlidisi/>**Enrichment:**  Visit the London Eye and see if you can work out what fraction, percentage and decimal one pod represents of the whole wheel. |

**LPS Mathematics: Year 7 Unit 4 – Rational numbers: fractions**

 **Enquiry Question:** **What’s between the integers on a number line?**

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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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