**LPS Mathematics: Year 9 Unit 1 – Ratio Application**

**Enquiry Question:** How do we know whether two drinks of squash are the same strength if they have different volumes?

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| **Key Topics and Learning Sequence**  |
| **= First Steps** |  **= Moving On** |  **= Stretch** |  **= Challenge** |
| **1. Representations of Ratio and Equivalence**1. Can order mixtures of juice according to “strength” and use the language of **“parts”**
2. Can use **colon notation** to describe a ratio of two or more thing
3. Can recognise some **equivalent ratios**
4. Can find a **range** of equivalent ratios including with **decimals** and **fractions**
5. Use a range of **visual representations** to show ratios
 | **2. Fractions from Ratios**1. Can express parts of a ratio as a **fraction the whole**
2. Can express one part of a ratio as a **fraction of other parts.**
3. Cam understand fractions within ratios as **reciprocal multipliers**
4. Can use fractions to find range of **equivalent ratios** and draw a **graph** comparing parts
5. Can explain how a ratio can be written as a **linear function** and relate this to a graph.
 | **3. Comparing ratios**1. Can **simplify** ratios fully
2. Can find **unitary ratios** and use these to compare
3. Can **compare** ratios by finding common multiples
4. Can use **equivalence** to solve problems where parts of a ratio change.
 | **4. Solving problems with ratio**1. Use a range of **visual representations** to solve ratio problems
2. **Share a given quantity** in a two part or three-part ratio
3. Find the parts of a ratio given the **difference between the parts**
4. Solve ratio problems when given two different ratios with **one thing in common**
5. Solve ratio problems in a range of **contexts such as geometry**
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| **How does this unit fit into your mathematical learning journey?** | **Further Exploration, Enrichment and Cultural Capital** |
| This unit builds on the introductory ideas of ratio you meet in **Year 8** which link ratios to **multiplicative relationships**. This unit takes these ideas further using **equivalence, linear functions, and graphical forms of ratios** to develop your understanding of ratios. These new ideas are further developed in **Year 10 and 11** when we explore **algebraic forms.**  | **Reading: ‘The Dangerous Ratio’** [**https://nrich.maths.org/2671**](https://nrich.maths.org/2671)**Enrichment:** You have explored **ratio in context** by investigating the **dilution series on Nrich** using the interactive applet on <https://nrich.maths.org/6164>**Cultural Capital:** Visit the National History Museum for free and work out the ratio of the skeleton of the blue whale in the main hall to yourself! Can you write this in the form **1:n?**  |

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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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