


Subject	Year	Month	
Mathematics	8	January	

Topic:

APPLYING RATIOS AND PROPORTION 7 LESSONS

Content (Intent)

<p>Prior Learning</p> <p>Y7 Feb:</p> <ul style="list-style-type: none"> Understand and use ratio notation <p>Divide an amount in a given ratio</p>	<p>Future Learning</p> <p>Y9 :</p> <ul style="list-style-type: none"> Direct and inverse proportion Any topic that links a question with ratios (e.g. algebra, angle problems, similar shapes, etc.)
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<p>Objectives</p> <ul style="list-style-type: none"> Understand the connections between ratios and fractions Find a relevant multiplier in a situation involving proportion Solve problems involving ratios and/or proportion in a real-life context (and apply a consistent method →) <ul style="list-style-type: none"> conversion (exchange rate), comparison (best buy / unit pricing), recipes scaling Understand and use compound units (speed and density), solve problems involving speed Convert between units of speed 	<p>For teaching purposes</p> <p>Possible questions</p> <ul style="list-style-type: none"> convince me that this information shows a proportional relationship <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">10</td> <td style="text-align: center;">15</td> </tr> <tr> <td style="text-align: center;">14</td> <td style="text-align: center;">21</td> </tr> </table> <ul style="list-style-type: none"> Which is the faster speed: 60 km/h or 10 m/s? Explain why. <p>Misconceptions</p> <ul style="list-style-type: none"> may want to use an additive relationship between two quantities may think that a multiplier always has to be greater than 1 When converting between times and units, some pupils may base their working on 100 minutes = 1 hour 	6	9	10	15	14	21
6	9						
10	15						
14	21						

Pedagogical notes (implementation) **How will understanding be assessed & recorded (Impact)**

*find the multiplier in situations involving proportion
Mention units and other narrations in the ratio*

$$\begin{array}{l} \times 1.17 \\ \hline \text{€1} : \text{€1},17 \\ \hline \text{€50} : ? \\ \hline \times 1.17 \end{array}$$

$$\begin{array}{l} 1 \text{ cm} : 200 \text{ km} \\ \hline 7 \text{ cm} : ? \end{array}$$

Best Value?

$$\begin{array}{l} \text{€4},75 = 5 \text{ l} \\ \hline ? : 1 \text{ l} \end{array}$$

$$\begin{array}{l} \text{€4},16 = 4 \text{ l} \\ \hline ? : 1 \text{ l} \end{array}$$

$$\begin{array}{l} \div 5 \quad 500 \text{ g} : 5 \text{ people} \\ \hline : 1 \text{ person} \\ \hline \times 8 \quad ? : 8 \text{ people} \end{array}$$

Further reading/discussion

<p>Reading / Enrichment</p> <p>KM: Proportion for real</p> <p>KM: Investigating proportionality</p> <p>KM: Maths to Infinity: Fractions, decimals, percentages, ratio, proportion</p> <p>NRICH: In proportion</p> <p>NRICH: Ratio or proportion?</p> <p>NRICH: Roasting old chestnuts 3</p> <p>Standards Unit: N6 Developing proportional reasoning</p>	<p>Literacy</p> <p>Ratio</p> <p>Proportion</p> <p>Proportional</p> <p>Multiplier</p> <p>Speed</p> <p>Unitary method</p> <p>Units</p> <p>Compound unit</p>	<p>Numeracy Links</p>	<p>Careers Links</p> <p>Stock analyst</p> <p>Retail banker</p> <p>Real estate agent</p> <p>Finances</p>
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