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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Ratio**  |
| 1. Ratio | Ratio compares the size of **one part** to **another part**.Written using the ‘:’ symbol. | ratio 3:1 |
| 2. Proportion | Proportion compares the size of **one part** to the size of the **whole**.Usually written as a fraction. | In a class with 13 boys and 9 girls, the proportion of boys is $\frac{13}{22}$ and the proportion of girls is $\frac{9}{22}$ |
| 3. Simplifying Ratios | **Divide** all parts of the ratio by a **common factor**. | 5 : 10 = 1 : 2 (divide both by 5)14 : 21 = 2 : 3 (divide both by 7) |
| 4. Ratios in the form $1 : n$ or $n : 1$ | **Divide** both parts of the ratio by one of the numbers to make **one part equal 1**. | 5 : 7 = 1 : $\frac{7}{5}$ in the form 1 : n5 : 7 = $\frac{5}{7}$ : 1 in the form n : 1 |
| 5. Sharing in a Ratio | **1. Add** the total parts of the ratio.**2. Divide** the amount to be shared by this value to find the value of one part.**3. Multiply** this value by each part of the ratio.Use only if you **know the total**. | Share £60 in the ratio 3 : 2 : 1.3 + 2 + 1 = 660 ÷ 6 = 103 x 10 = 30, 2 x 10 = 20, 1 x 10 = 10£30 : £20 : £10 |
| 6. Proportional Reasoning | Comparing two things using **multiplicative reasoning** and applying this to a new situation.Identify one multiplicative link and use this to find missing quantities. | Image result |
| 7. Unitary Method | Finding the **value of a single unit** and then finding the necessary value by **multiplying** the single unit value. | 3 cakes require 450g of sugar to make. Find how much sugar is needed to make 5 cakes.3 cakes = 450gSo 1 cake = 150g (÷ by 3)So 5 cakes = 750 g (x by 5) |
| 8. Ratio already shared | Find what **one part** of the ratio is worth using the **unitary method**. | Money was shared in the ratio 3:2:5 between Ann, Bob and Cat. Given that Bob had £16, found out the total amount of money shared.£16 = 2 partsSo £8 = 1 part3 + 2 + 5 = 10 parts, so 8 x 10 = £80 |
| 9. Best Buys | Find the **unit cost** by **dividing** the **price by the quantity**.The **lowest** number is the best value. | 8 cakes for £1.28 🡪 16p each (÷by 8)13 cakes for £2.05 🡪 15.8p each (÷by 13)Pack of 13 cakes is best value. |

**Knowledge Organiser**