(Year 6)

INTRODUCTION TO RATIOS

— Number

1. What Is a Ratio?

- A ratio compares two or more quantities of the same kind.
- Written with a colon: 3 : 2 (read as '3 to 2').
- Example: A recipe uses 3 cups flour to 2 cups sugar --> 3 : 2.

Ratio 3 : 2 means 'for every 3 of the first, there are 2 of the second'.

2. Simplifying Ratios

- Divide all parts by the highest common factor (HCF).
  - 12 : 8 --> HCF is 4 --> 3 : 2
  - 15 : 25 : 10 --> HCF is 5 --> 3 : 5 : 2
- Ratios should be expressed as whole numbers.
  - 0.5 : 1.5 --> multiply both by 2 --> 1 : 3
  - 1/2 : 3/4 --> multiply both by 4 --> 2 : 3

3. Equivalent Ratios

- Like equivalent fractions, ratios can be scaled up or down.
  - 2 : 3 = 4 : 6 = 6 : 9 = 10 : 15
- Multiply or divide ALL parts by the same number.

2 : 5 = ? : 20
5 x 4 = 20, so multiply both by 4
2 x 4 : 5 x 4 = 8 : 20

4. Dividing a Quantity in a Given Ratio

- Find the total number of parts, then share the quantity.
- **Example:** Divide $60 in the ratio 2 : 3:
  - Total parts = 2 + 3 = 5
  - One part = $60 / 5 = $12
  - First share = 2 x $12 = $24
  - Second share = 3 x $12 = $36

Steps: 1. Add ratio parts
2. Divide total by number of parts
3. Multiply each ratio part by the value of one part

5. Ratios vs Fractions

- A ratio of 2 : 3 means 2 out of every 5 total, or 3 out of every 5 total.
  - In a class with boys : girls = 2 : 3, boys are 2/5 of the class.
- Ratios compare part to part; fractions compare part to whole.

Always check: do the shares add up to the total?
$24 + $36 = $60. Correct!