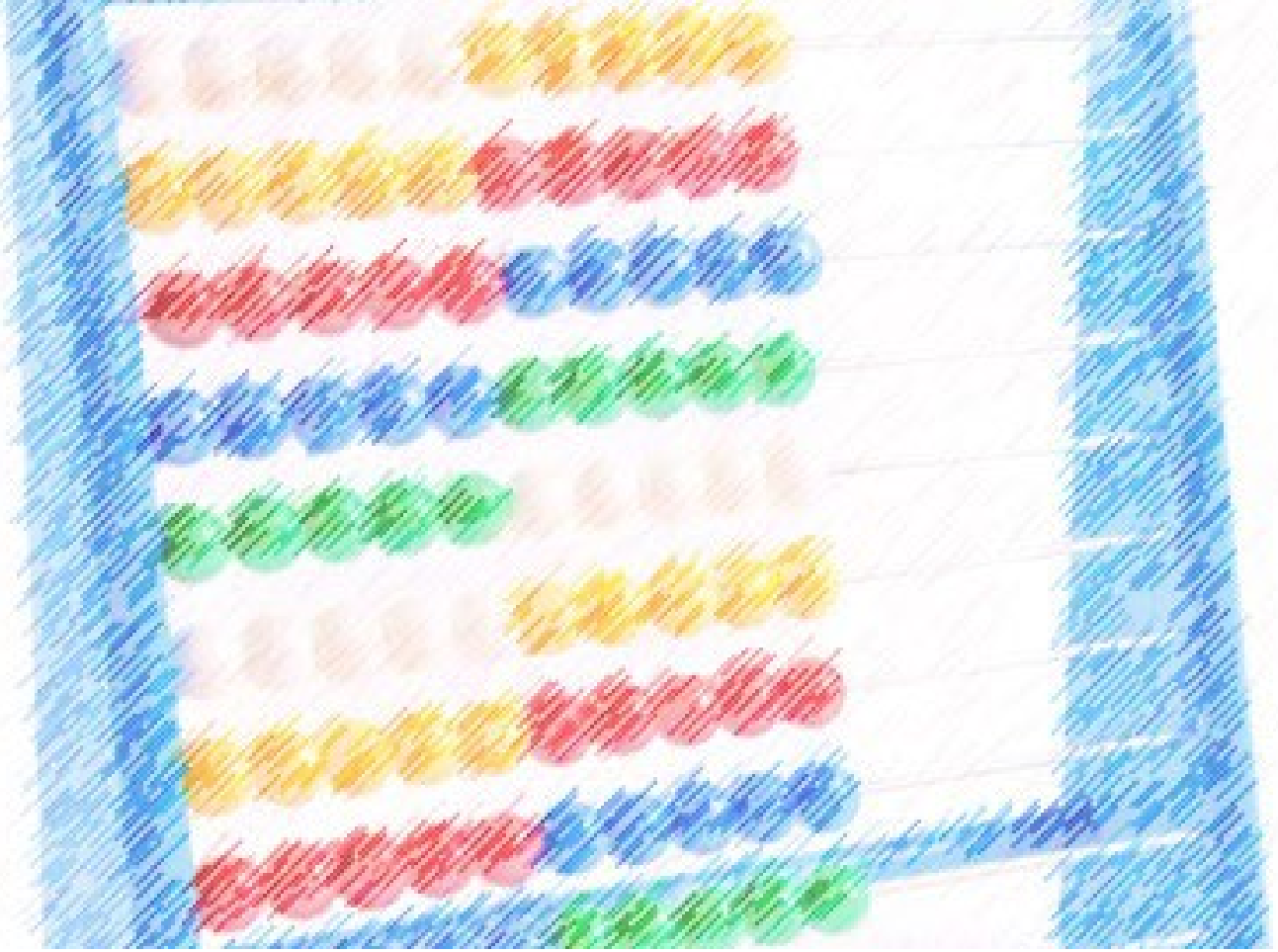
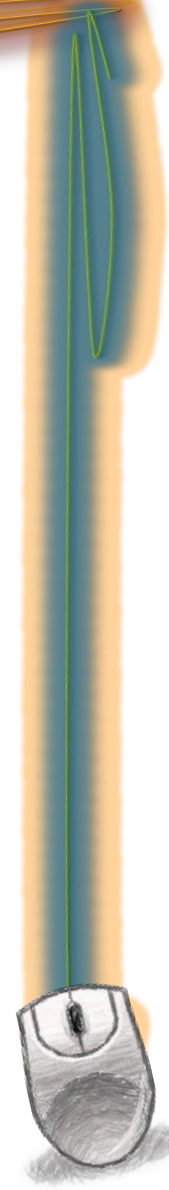


RATIO AND PROPORTION

By Mark Gillan

SUB-TOPICS COVERED

- Understanding Ratio and Proportionate Scaling
- Examples of Ratio including use and importance
- Common Use
- Example of Ratio: Car Salesroom
- Ratio as a Fraction or Percentage
- Quiz Question
- Answer and Summary Explanation



UNDERSTANDING RATIO AND PROPORTIONATE SCALING

A **ratio** is a way to compare two or more quantities. It tells us how much of one thing there is compared to another.

A **proportion** is when two ratios are equal or when something is divided in the same ratio across different contexts.

EXAMPLE USE AND IMPORTANCE

- Television or film broadcast
- Different proportions of pixels across x pixels high
- Older TV was 4:3
- Modern is more 16:9
- If ratio is not employed for proportionate changing of screens, newscasters looked very wide faced and incorrect human proportions
- Note the use of a colon between the numbers to indicate a ratio

COMMON USE

- Ratio describes the relative relationship between categories
- A ratio compares one item to another in respect to size or quantity
- Organisations might use to maintain a uniform number of employees per department or for economical purpose
- Individuals might use a ratio within cooking or even at work mixing concentrate
- An example, at home, decorating a bathroom with tiles and needing to know quantities based upon a design
- A design of 3 red tiles next to 4 blue tiles throughout the bathroom

For example,

3 red tiles to 4 blue tiles:

is... 3 : 4

EXAMPLE OF RATIO : A CAR SHOWROOM

A car salesroom has 5 cars

2 of them blue in colour

3 red in colour

The difference in colours is due to local buyer trends in sales.

For every 2 blue cars, there's 3 red cars.

The proportion of blue cars to red cars is 2:3

RATIO AS A FRACTION OR PERCENTAGE

You can express a ratio as a **fraction** by writing one part over the total.

- Given the ratio $2:3$

- Part to whole (as a fraction):

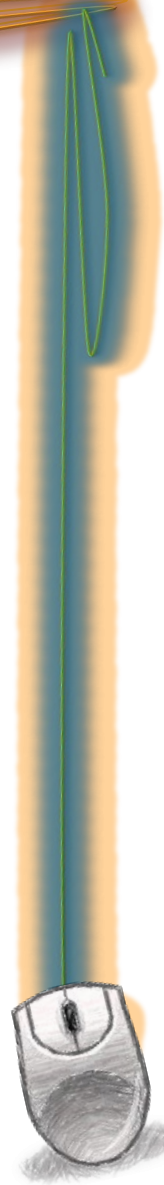
$$\text{Blue} = \frac{2}{2+3} = \frac{2}{5}$$

- In other words, there's 5 parts in total. Blue accounts for 2/5ths of the total of all cars.

- As a percentage:

$$\frac{2}{5} \times 100 = 40\%$$

- So, 40% of the total is Blue, 60% of the total is Red.

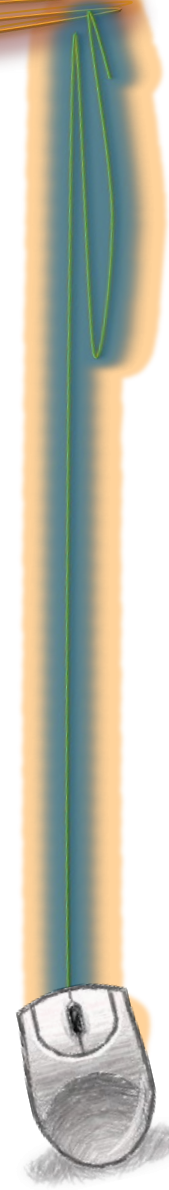


WHAT DO YOU THINK?

- Diluting orange suggests a ratio of one part concentrate orange to three parts water
- In other words, a ratio of 1:3
- If you have about 10 ml of orange juice concentrate, how much water is required?

ANSWER

- 1 part diluting juice to 3 parts water
- In other words, a ratio of 1:3
- If you have about 10 ml of orange juice concentrate, how much water is required?
- **ANSWER: 30 ml of water is required**
- **Total liquid will be 40 ml**



TRY SOME OF YOUR OWN

Mark Gillan