



higher education  
& training

Department:  
Higher Education and Training  
REPUBLIC OF SOUTH AFRICA



**SUBJECT: MATHEMATICAL LITERACY**

**LEVEL: 3**

**MODULE 1 NUMBERS**

# RATES AND DIRECT PROPORTIONS

After completing this topic, you will be able to: Determine rates from given values/relationships

- Identify different units in an expression
- Demonstrate knowledge, skill and value solve sums with confidence.

# Rates and direct proportions.

## Content

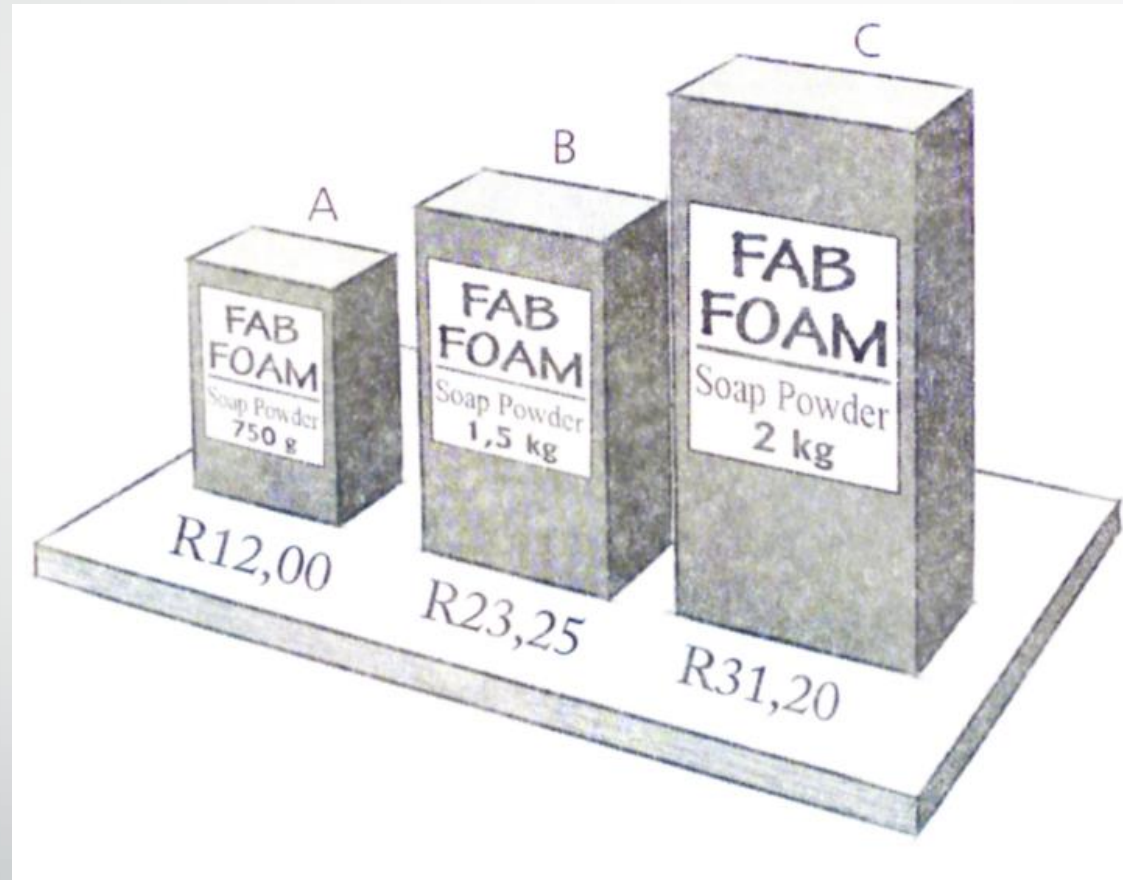
- Density compares *mass* and *volume*.  
(the density of gold is  $19,3 \text{ g/ cm}^3$ ).
- Speed compares *distance* and *time*.  
(120km/h).
- Rate of pay often compares *money* and *time*.  
(R35/ h).
- Petrol consumption compares volume and *distance*.

# RATES AND DIRECT PROPORTIONS



– **Cheese Muffins** –  
(makes 30)

550 g flour  
50 ml baking powder  
300 g grated cheese  
750 ml milk



# CLASS ACTIVITY

Use the diagrams in slide 4 to answer the following questions.

1.1. Nkone has a recipe for 30 cheese muffins.

She needs 50 muffins. How much of each ingredient will Nkone need? (6)

1.2. How many litres of paint is required to cover a total area of  $198 \text{ m}^2$ ? (2)

1.3. Determine which container with soap powder is the best buy. (5)

[13]

# Rates and direct proportion.

- Solve the following questions.
- 1.1 511 000 tons of tomatoes with a value of R1 557.9 million were produced in 2011. Calculate the value of tomatoes per ton. (R3 048.73)
- 1.2 North West province has a population of 3 509 953 people in an area of 140 882  $km^2$ . How many people will live in an area of 26 438  $km^2$  if the same rate is applied? (658 680 people)