

Lamington drive

Link to Australian Core Skills Framework:

Students performing at a Level 3, typically select appropriate strategies from a variety of everyday mathematical processes in familiar and some less familiar contexts. They interpret and comprehend mathematical information in written material, diagrams, charts and tables. They use large whole numbers in words and figures, and understand and convert routine fractions, decimals and percentages.

Link to Numeracy Learning Progressions:

Table 1 – Numeracy Learning Progressions and their descriptors

| Level | Indicator |
|-------|--|
| QuN9 | <p>Understanding place value</p> <ul style="list-style-type: none"> represents and flexibly renames three-digit numbers as counts of hundreds, tens and ones <p>Understanding decimal place value</p> <ul style="list-style-type: none"> recognises that the place value system can be extended to tenths and hundredths uses an understanding of the magnitude of decimals to compare them to two decimal places |
| OwD3 | <p>Understanding the effects of multiplication and division with decimals</p> <ul style="list-style-type: none"> understands that multiplying and dividing decimals by 10, 100 and 100 changes the positional value of the numerals connects and converts decimals to fractions to assist in mental computation involving multiplication and division recognises the equivalence of decimals to benchmark fractions |
| OwD4 | <p>Flexible strategies for multiplication and division of decimals</p> <ul style="list-style-type: none"> uses knowledge of positional value of numbers to multiply and divide decimals uses knowledge of approximate answers to check accuracy of solutions when using a variety of strategies |
| OwP2 | <p>Find percentage as a part of a whole</p> <ul style="list-style-type: none"> finds a percentage of a quantity multiplies to calculate a percentage of any amount |
| InF7 | <p>Using fractions</p> <ul style="list-style-type: none"> justifies the need for the same denominators to add or subtract fractions uses strategies to find a fraction of a quantity |

| Level | Indicator |
|-------|---|
| CoU2 | Ratios <ul style="list-style-type: none"> interprets ratios as a comparison between the same units of measure uses a ratio to increase or decrease quantities to maintain a given consistency |
| CoU3 | Applying proportion <ul style="list-style-type: none"> demonstrates how increasing one quantity in a ratio will affect the total proportion |
| UuM8 | Converting Units <ul style="list-style-type: none"> converts between formal units of measurement |

Learning intention

Students will learn to:

- do conversions of units
- calculate price per court
- complete a scale drawing
- communicate their reasoning and justify their responses

Resources required

- computer with access to internet
- paper or book to record results
- calculators

Part A: Determining how many?

Scenario: You belong to the Red Robin Sports Club. You have been asked to make some lamingtons to raise money. You must make between 2 and 10 batches of lamingtons to sell. The list of ingredients for one batch (15 lamingtons) is below:

| Ingredients for cake | Ingredients for icing |
|---|---|
| <ul style="list-style-type: none"> ○ 125g butter ○ 1 cup caster sugar ○ ½ teaspoon vanilla extract ○ 3 eggs ○ 1 ¾ cup self-raising flour ○ ½ cup milk | <ul style="list-style-type: none"> ○ 3 ½ cups icing sugar mixture ○ ¼ cup cocoa powder ○ 1 tablespoon butter ○ ½ cup boiling water ○ 2 cups desiccated coconut |

This ingredient list comes from Taste.com

1. State the number of batches of lamingtons you will be making.
2. Create a table with the column headings as below. Listing the ingredients for one batch and the adjusted list for the number of batches you are making.

| Ingredients for one batch | Ingredients for my number of batches |
|---------------------------|--------------------------------------|
|---------------------------|--------------------------------------|

3. Choose an online supermarket to get the size of the ingredients and the cost. Add the columns to your previous table as shown below.

| Ingredients for one batch | Ingredients for my number of batches | Size for one unit | Cost for one unit | How many units do I need to buy? | Cost to buy these units |
|---------------------------|--------------------------------------|-------------------|-------------------|----------------------------------|-------------------------|
|---------------------------|--------------------------------------|-------------------|-------------------|----------------------------------|-------------------------|

4. At the supermarket we need to do comparison shopping to determine the best value for us. Were options available when choosing the number of units, for example, I could buy a 1 kg packet of flour rather than 2 x 500g packets of flour. Explain why you made that particular choice when buying the ingredients.

Part B: Determining the cost

Scenario: The Red Robin Sports Club president has determined that each batch of lamingtons must make a \$5 profit for the club.

5. Calculate the total cost of the ingredients for the number of batches you will be making. This is the cost of your lamingtons
6. Calculate the cost for one batch of your lamingtons.
7. What is the price that you will need to put on each batch of your lamingtons? You can round to the nearest 50 cents.
8. Compare the cost of your lamington per batch with at least three other people. Who has the best value lamingtons? Can you explain why?
9. Did you have excess ingredients? Explain why or why not?