

LAMINGTONS

Lesson 1: Where Will You Stand?

Australian Curriculum: Mathematics (Year 5)

ACMNA102: Compare and order common unit fractions and locate and represent them on a number line.

ACMNA103: Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator.

Lesson abstract

This task explores fractions as division through a whole class problem. Three tables of lamingtons are at the front of the room: the first table has one lamington, the second has two and the third has three. Ten students are asked, one at a time, to stand at the table where they will receive the largest share of lamington, knowing that they will need to share with the other students standing at that table. At the end, students calculate how much lamington each person receives.

Mathematical purpose (for students)

We will explore efficient strategies to determine fair shares where the result is a fraction.

Mathematical purpose (for teachers)

Students learn that fractions represent division. Students will represent fair shares as a fraction using visual representations and mental strategies. They will connect the number of items being shared, the number of shares to the numbers that comprise the fraction.

Suggested presentation One lesson of one hour

Vocabulary encountered

- division
- fair share
- fraction
- unit fractions

Lesson materials

- Lamingtons or pictures of lamingtons
- Chart paper and markers

Teacher Notes: This sequence uses lamingtons but chocolate bars, sandwiches, or something similar could be used. Pictures of these items may also be used.

We value your feedback after this lesson via our website.

Introduction

Place three tables at the front of the room. Put one lamington on the first table, two lamingtons on the second table, and three lamingtons on the third table.

Explain that this is a game where lamingtons will be shared, and the aim is to get as much lamington as possible.

Send ten students outside the room, or to the back of the room, so that they cannot see the tables.

Invite one student back and pose the following question: *if the lamingtons at each table are shared equally between the people standing at that table, which is the best table for you to stand at?* The student chooses a table and remains there.

Invite back a second student and pose the question again. This student also chooses a table and remains there.

Repeat for the other eight students, having them return one-by-one, posing the question, and having the student choose a table. Once a student has chosen a table they must remain at that table.

Ask the students observing to consider where they would choose to stand.

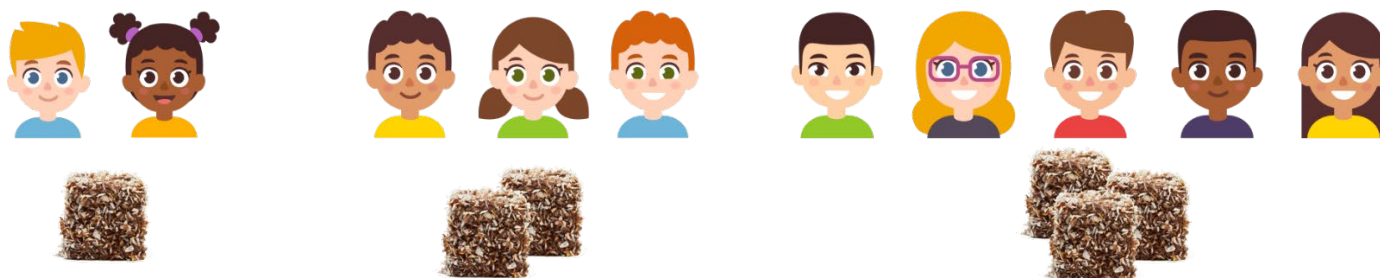
Once all ten students have entered and have chosen a table to stand at, pose the question to the class: *How much lamington does each student at each table get?*

Exploration

Have students work in pairs or threes to determine how much lamington students at each table would receive.

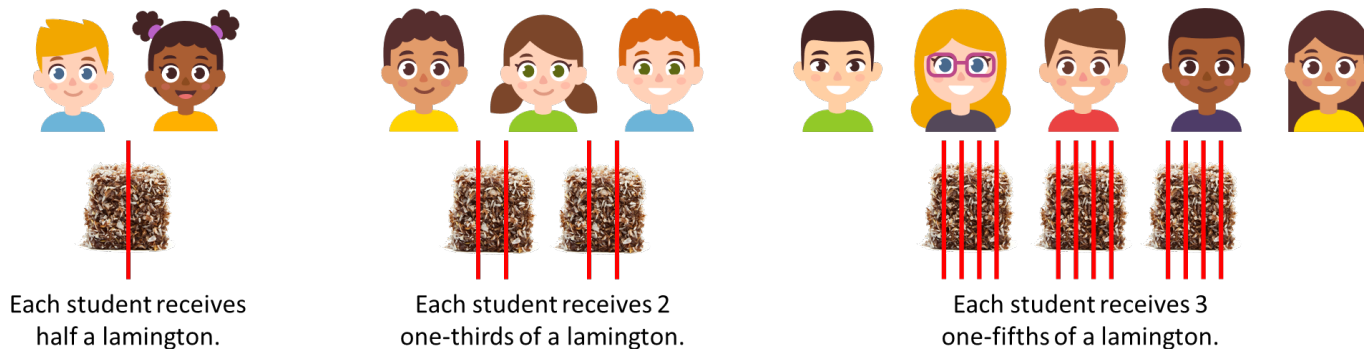
Possible strategies

Using the following distribution as an example:



Strategy 1

- Students divide each lamington into the same number of parts as children.



Strategy 2

- Students cut the lamingtons in half and share the halves equally. They then cut the remaining halves into smaller parts and share these parts



Each student receives half a lamington.



Each student receives 1 half of a lamington and 1 sixth.



Each student receives 1 half of a lamington and 1 tenth.

Class discussion

Select students who used different strategies to present to the class. Look at the similarities and differences between different strategies.

Connect strategies to important mathematical ideas:

- Strategy 1** shows that fractions represent division:

3 shared between 5 is equal to $\frac{3}{5}$

$$3 \div 5 = \frac{3}{5}$$

- Strategy 2** breaks the shares down into unit fractions, i.e. fractions with a numerator of 1. Unit fractions make it easy to compare who got the most lamington. Explore the idea that the **larger** the denominator, the **smaller** the piece.

Teacher Notes

- The Ancient Egyptians represented all fractions as the sum of unit fractions. Nrich has a lesson on this, available [here](#).

Discuss: *Was this the fairest way to share the lamingtons? Which group of students got the largest share of lamington?*