

A long dinner

Purpose:

The purpose of this activity is to engage students in identifying a (simple linear) pattern and using this to solve a problem.

Achievement Objectives:

NA2-6: Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols.

NA2-8: Find rules for the next member in a sequential pattern.

Description of mathematics:

In readiness for this problem, the students should have familiarity with each of the following components of mathematics. The problem may be solved with different combinations of these components.

- counting strategies
- basic addition facts
- drawing a diagram to represent a problem
- using materials to represent a problem
- finding a pattern
- explaining a pattern
- using a pattern

This activity may be carried out with guidance, or by allowing the student to follow their own method of solution. The approach should be chosen in sympathy with students' skills and depth of understanding.

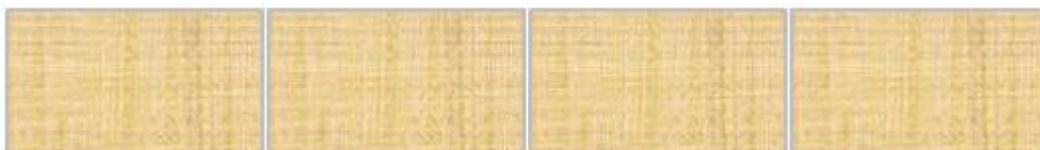
Activity:

A restaurant makes a super-long table by placing 4 normal tables end to end for a big party.

Each normal table usually seats 6 people around it.



How many people can sit down to eat at the long table?

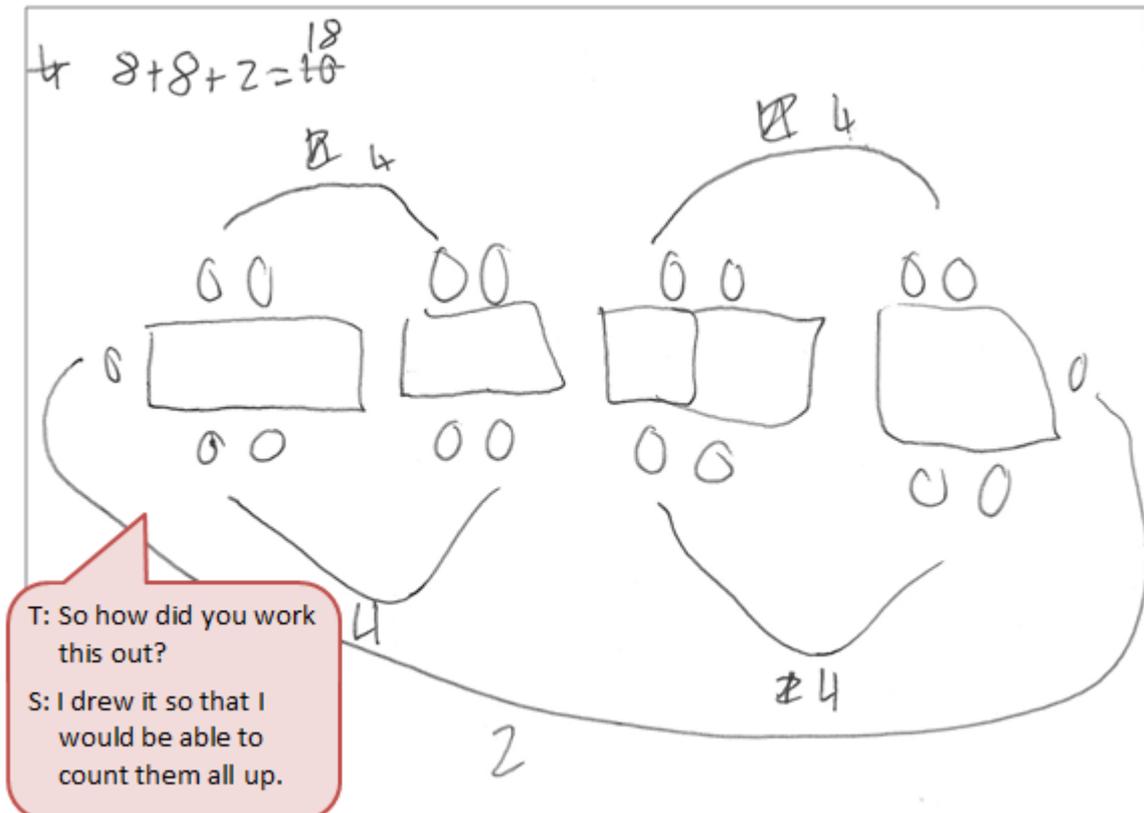


The visual approach

The student is able to represent the problem in a way that leads to a solution.

Prompts from the teacher could be:

1. What will the long table look like?
2. Where can the people sit?
3. How many people can fit around the long table?

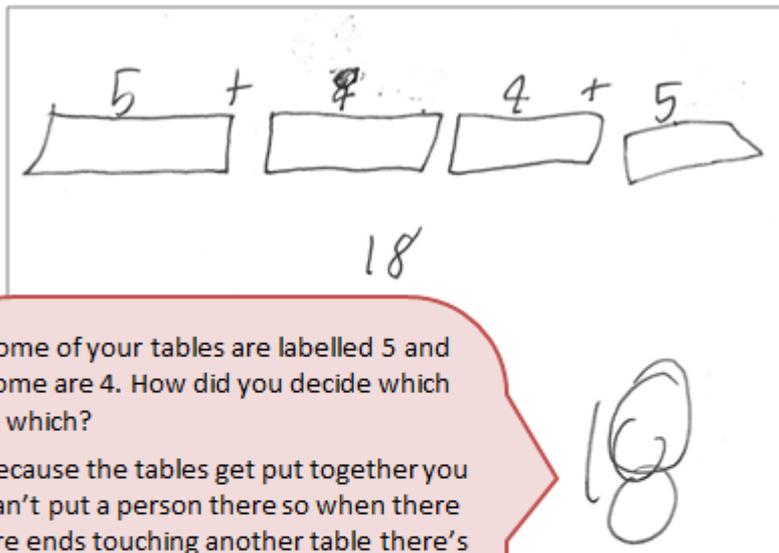


The conceptual approach

The student is able to find a pattern and use this to solve the problem.

Prompts from the teacher could be:

1. How many people sit around one table?
2. What happens when 2 tables are pushed together? How many people fit around?
3. How many people fit around 3 tables?
4. What pattern can you see?
5. How many people will fit around four tables placed end to end?



T: Some of your tables are labelled 5 and some are 4. How did you decide which is which?

S: Because the tables get put together you can't put a person there so when there are ends touching another table there's no seat, so when the table is in the middle there's only room for 4 and the end tables have room for 5.

T: So how many people could you seat if there was one more table added?

S: 5 more ... no 4 more 'cos it would go in the middle, so... 22.