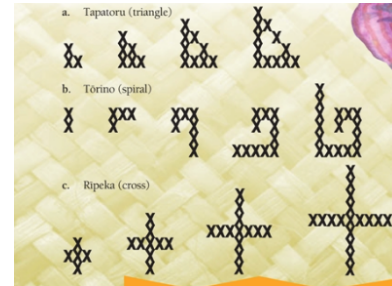


# Changing Places



This task requires you to investigate the concept “**Changing Places**” through using mathematical concepts and algebraic thinking. This is an in-class assessment.

Number patterns (Education Perfect related to 'Changing Places' task)	You have attempted to find and represent relationships in spatial and number patterns, using tables and graphs	You have found and represented relationships in spatial and number patterns, using tables and graphs	You are able to generate formula, calculate the gradient and find the 'y' intercept	You are able to sketch a graph on a given problem by forming rules and demonstrating your algebra knowledge
Algebra knowledge in context - 'Changing Places' task	You have attempted to use equations for linear relationships	You have used equations for linear relationships	You have used rational thinking in solving problem	You have generated and justified a pattern for a story then formulated a table and rule for a practical situation
Time management	You have not submitted the assessment	You have not submitted the assessment on time	You have submitted the assessment on time	You have submitted the assessment on time
Criteria	WORKING TOWARDS curriculum expectation	Working AT curriculum expectation	Working ABOVE curriculum expectation	Working BEYOND curriculum expectation

## Task Story

This task will explore our context, “**Changing Places**”. Your task is as follows:

Your friend is moving to Australia and you are planning to host a party for his/her friend. He/she starts by designing a decoration using bamboo sticks in a geometric pattern, and will then have to decide how the pattern will look and grow with each progression. This pattern will provide data for you to record onto a table with the calculations for the

number of sticks required. As he/she will need to predict how many sticks will be required, you will need to use your table to show the future values. Your table will also inform your drawing of a graph and the formulation of an equation for it.

He/she also decides to buy flowers at a local florist. Ormiston florist has a special offer whereby the purchase of a sendoff card at their shop (*compulsory*) will give consumers a discounted rate for each flower they buy. You can choose a card that costs \$5, \$6 or \$7 and the pricing of the flowers is as follows...

- Red flowers \$3.50
- Yellow flower \$2.50
- White flowers \$1.50
- You can buy up to 8 flowers of the same colour

### Task Description

1. Create a table to show the cost for the written problem/scenario which will give a base for a simple linear equation.
2. Plot the graph against the two variables for the problem/scenario provided.
3. Explain the relationship between the two variables.
4. Does this scenario/problem form a straight line? Explain more on this...
5. Explain what are independent and dependent variables. How? + Why?
6. Using your equation please show an easy way to calculate the price for 8 such flowers. Show the equation and your working steps.
7. Identify Y-intercept. (Clearly show this on your graph)
8. Calculate gradient. (Using coordinates and working, shown very clearly)
9. Generate an equation use the formula  $y = m x + c$
10. Use a correct scale to draw your graph.
11. Predict future values for more flowers using your equation and the working clearly shown.
12. Read the given graph and make a table of values for  $x$  and  $y$  coordinates. Write an equation for this line.

