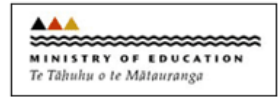


# Maths Week/ Wiki Pāngarau 2025



## Survivor Series/Kia Mōrehurehu

### Day 5 Set C

### For students

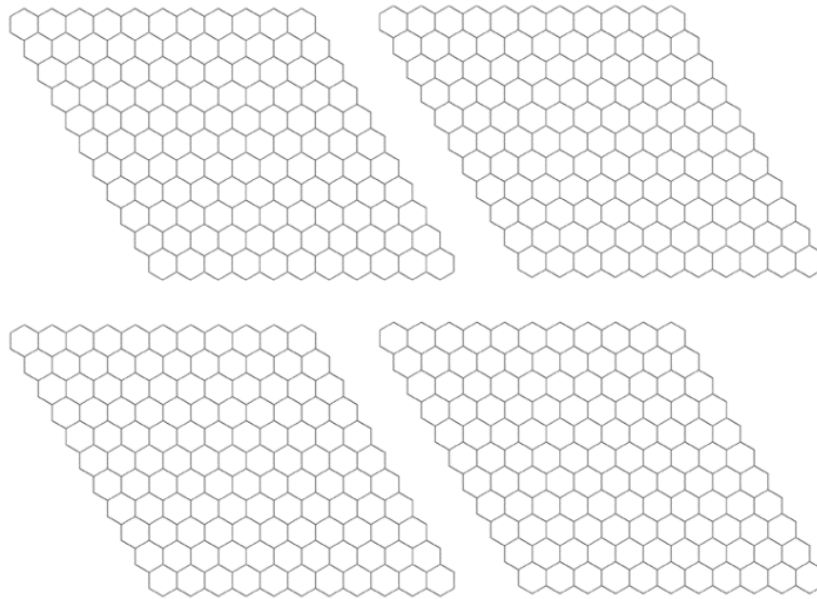
#### What to do for students

- 1 You can work with one or two others. Teams can be different each day.
- 2 Do the tasks and write any working you did, along with your answers, in your maths book.
- 3 Your teacher will tell you how you can get the answers to the questions and/or have your work checked.
- 4 When you have finished each day, your teacher will give you a word or words from a proverb. You could ask your teacher to explain what a proverb is.
- 5 At the end of the week, put the words together in the right order and you will be able to find the complete proverb! Your teacher may ask you to explain what the proverb means.
- 6 Good luck.



## THINKING STRATEGICALLY

### Task 1



**Hex** is a simple game for 2 players. Play takes place on a rhombus shaped hexagonal grid. Each player tries to **form an unbroken chain of their pieces** connecting their two opposite sides of the board. One player attempts to form a line from the top to the bottom. The other player is trying to create a line from left to right.

### Instructions

- Place one stone or marker in an empty cell on your turn, or shade one empty cell.
- Players take turns placing one marker of their colour on any empty hex.
- Once placed, markers cannot be moved or removed.
- The first player to form a continuous path connecting their two sides wins.
- Hex cannot end in a draw - the game will finish with a winner.
- The second player may choose to swap positions after the first move i.e. they become the first player. If you swap, then you are now player one, and your move is considered to have been the marker that has already been placed (you cannot shift it).
- Instead of stones/markers, the two players could use a small version of the game board and colour the empty hex using their own colour.

Play six games with a partner and then answer the following questions.

### Question 1

- (a) What is the advantage of playing first in Hex?
- (b) How does the "swap rule" affect fairness and strategy?
- (c) What are the best opening moves for each player?
- (d) What makes a move "strong" or "weak" in Hex?

Answer

(a)

(b)

(c)

(d)



### Task 2

**Misère Hex** is a variation where the first player to complete a connection loses. This variation works because it is not possible for Hex to end in a draw. The rules remain the same.

Play six times and record your results.

### Question 1

- (a) Was it easier or harder to play to lose?
- (b) Why do you think this is?

Answer

(a)

(b)

### **Task 3**

Form a group of four. You may choose to play either Hex, or *Misère Hex* (or you could play three games of each). You are playing in pairs and each player alternates taking their turn with their partner. You can communicate before playing a piece.

Play six games. May the best pair win!