Maths Week/ Wiki Pāngarau 2025

MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

NZAMT
Te Rōpū Kaiako Pāngarau o Aotearoa
New Zealand Association of Mathematics Teachers
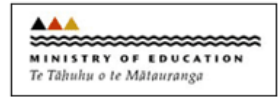
Survivor Series/Kia Mōrehurehu

Day 5 Set A: Parts 1 and 2

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

PART 1

Task 1 Tic-tac-toe

You will think about and then play this game with a partner. It is called Tic-tac-toe. You will need a pencil and a 3 x 3 grid (your teacher will show you how to draw the grid or may give you a copy to work on).

Instructions

- Decide who goes first and take turns to start after that.
- One player marks their squares with x and the other player marks their squares with o.
- Each player places their mark, x or o, in an empty square.
- The winner is the first to create a line of three - horizontally, vertically or diagonally.
- If all squares are full, and no-one has made a line of three, then the game is a draw.
- At the end of a game, record the winner of each game and if the winner played first or second.
- The overall winner is the player who wins the most games.

Question 1

(a) Who do you think will win - the player who goes first, the player who goes second, or will it not matter?

Answer

(b) Play six games.

Complete the following table for the results of these games.

Player 1 (name):	Player 2 (Name):
Wins going first:	Wins going first:
Wins going second:	Wins going second:

(c) Looking at your results in (b), is the winner more likely to be the person who goes first, the person who goes second, or doesn't it matter?

Answer

Task 2 Toe-tac-tic

Now we're going to think about and then play Toe-tac-tic! In Toe-tac-tic, you win by losing!!

<u>Instructions</u>

- Decide who goes first and take turns to start after that.
- One player marks their squares with x and the other player marks their squares with o.
- Each player places their mark, x or o, in an empty square.
- The loser is the first player who makes a line of three horizontally or diagonally. The other player is the winner of that game.
- If all squares are full, and no-one has made a line of three, then the game is a draw.
- At the end of a game, record the winner of each game and if the winner played first or second.
- The overall winner is the player who wins the most games (by not making 3 in a row).

Question 2

(a) Who do you think will win - the player who goes first, the player who goes second, or will it not matter?

Answer

(b)   Play six games.

Complete the following table for the results of these games.

Player 1 (name):	Player 2 (Name):
Wins going first:	Wins going first:
Wins going second:	Wins going second:

(c)   Looking at your results in (b), has the winner changed from when you played Tic-tac-toe? Why do you think that is?

Answer

PART 2

Task 1 Wild Tic-tac-toe

Many of you will have played Tic-tac-toe which is also known as noughts and crosses. Did you know there are many different versions?

Here is a version you may not have played. You will think about and then play this version which is called Wild Tic-tac-toe.

Instructions

- Decide who goes first and take turns to start after that.
- Each player places marks, x or o, in an empty square.
- On your turn, you can choose to mark either an x or an o. It's your choice.
- The winner is the first player who makes a line of three of either symbol, horizontally, vertically or diagonally.
- If all squares are full, and no-one has made a line of three, then the game is a draw.
- At the end of a game, record the winner of each game and if the winner played first or second.
- The overall winner is the player who wins the most games.

Question 1

(a)   Who do you think will win - the player who goes first, the player who goes second, or will it not matter?

> Answer

(b)   Play six games.

Complete the following table for the results of these games.

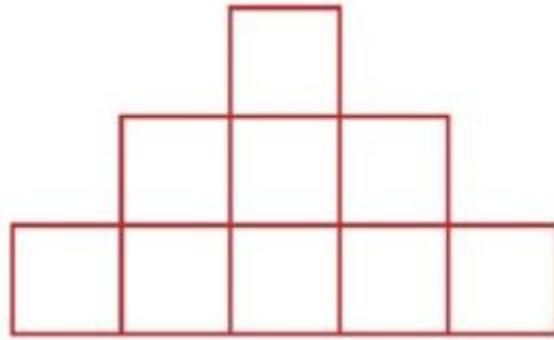| Player 1 (name):	Player 2 (Name):
Wins going first:	Wins going first:
Wins going second:	Wins going second:

Question 2

Is it better to be the first or second player? Why?

> Answer

Task 2 Pyramid Tic-tac-toe

Our next variant is called Pyramid Tic-tac-toe. You will think about and then play this version, which uses a different board.

Instructions

- Decide who goes first and take turns to start after that.
- One player marks their squares with x and the other player marks their squares with o.
- Each player places their mark, x or o, in an empty square.
- The winner is the first player who makes a line of three horizontally, vertically or diagonally.
- If all squares are full, and no-one has made a line of three, then the game is a draw.
- At the end of a game, record the winner of each game and if the winner played first or second.
- The overall winner is the player who wins the most games.

Question 1

(a) Who do you think will win - the player who goes first, the player who goes second, or will it not matter?

Answer

(b) Play six games.

Complete the following table for the results of these games.

Player 1 (name):	Player 2 (Name):
Wins going first:	Wins going first:
Wins going second:	Wins going second:

Question 2

Is it better to be the first or second player? Why?

Answer

Task 3 Multi Player Tic-tac-toe

Did you know Tic -tac-toe can be played with three or four players? You will think about and then play this version next.

Instructions

- Form a group of three or four players.
- Draw up a grid 4 x 4, 5 x 5 or 6 x 6 (your choice).
- Decide who goes first and take turns to start after that.
- Each player has their own symbol to mark the square they have chosen with.
- Each player places their mark, x, o, a, or ▲ , in an empty square when it is their turn.
- The winner is the first player who makes a line of three or more of their mark horizontally, vertically or diagonally.
- If all squares are full, and no-one has made a line of three or more, then the game is a draw.
- At the end of a game, record the winner of each game and if the winner played first or second.
- The overall winner is the player who wins the most games.

Question 1

(a) Who do you think will win - the player who goes first, the player who goes second, third, fourth, or will it not matter?

Answer

(b) Play six games.

Complete the following table for the results of these games.

Player 1:	Player 2:
Wins going first:	Wins going first:
Wins going second:	Wins going second:
Wins going third:	Wins going third:
Wins going fourth:	Wins going fourth:
Player 3:	Player 4:
Wins going first:	Wins going first:
Wins going second:	Wins going second:
Wins going third:	Wins going third:
Wins going fourth:	Wins going fourth:

Question 2

Is it better to be the first, second, third or fourth player? Why?

Answer