

Whano whano

Updated June 2026

Year level: 3

Approximate number of lessons: 1

Learning goals

- Engage in chance-based investigations about games and everyday situations to:
 - anticipate and then identify possible outcomes
 - collect and record data
 - create visualisations for frequencies of outcomes (e.g., lists, picture, graphs)
 - describe what these data visualisations show
 - answer chance-based investigative questions
 - notice variations in outcomes

Resources

- How to play Whano whano [instructions](#)
- If you wish to play an alternative version you can begin with two movement options only and then build up to selecting from the four moves once confident with the way to play the game. The full game is needed for this probability lesson.
- This Scratch Garden Mini Maths Movie [video](#) shows how to record using a tally chart
- Large paper and vivids for making a class table
- Paper or something for ākongā to record their results in
- Optional - counters to represent the different possible outcomes

Activity

Introduction

This chance based game is based on the idea of the game of **whano whano** having several different outcomes. Explain the rules to ākongā and practice in slow motion before you play competitively. Make sure you have a few 'test' games before you begin recording the results so that you work out any problems and can say everyone is playing to the agreed rules. By playing these test games it means you do not have any disagreement or unnecessary distractions when beginning to collect the data and all ākongā have the time to grasp how to play in a safe and supportive environment.

? PROBLEM:

Explain to ākonga that they are going to play several games of **whano whano** and at the end of this lesson they will be able to answer the investigative question **‘What is the chance of getting a match for each movement option?’**

Elicit ideas from ākonga prompting them as needed to respond using the language of possible, impossible, certain when they are predicting the answer to the investigative question. Ask them to consider what they think the ‘probability’ of getting a match is. The kaiako records these thoughts or statements for the class to return to later in the lesson and discuss whether what they anticipated has proved to be correct.

Kaiako can also ask ākonga which outcome they think will be more likely, a match or no match. Record how many think match and how many think no match. Ask them to share with their **Talk Partner** why they think it is more likely to be a match or no match.

PLAN:

The kaiako now helps ākonga to plan how they will collect and organise the data. It is very useful to agree upon a class symbol for recording each of the ‘moves’. For example symbols could be



No match



Feet together



Feet apart



Right foot forward



Left foot forward

By having class agreed symbols ākonga will be able to view another group's data and understand it more easily without explanation as to what each symbol means.

Each pair of ākonga will play 10 games so that they have data to see whether their anticipated outcomes.. Remind ākonga they can count their tally marks to see if they have played 10 games or not. It is helpful to use the no match symbol as they record to help sort their data.

DATA:

Ten games are played by each pair of ākonga. As each game is played the pair of ākonga record their results on a table using the symbols.

After playing, ask the questions again:

- Is it possible, or impossible that we might get the same outcome next time we play?
- Is it more likely that we get a match or that we do not get a match when we play this game.
- What does your data show?
- Is there anything that shows you that you can be certain that you will get a match?

Repeat for another 20 games and see if the data keeps the same pattern as when you played 10 games.

ANALYSIS:

Bring all ākonga back together so that the class data can be collated. Get each pair of ākonga to bring their table of results so they can share their results with the class.

To collate the class data the kaiako can use a large copy of the recording table. The kaiako supports each pair of ākonga to come and add their collected data as a tally mark in the correct part of the class table.

Total the number of tally marks in each part of the table. Write the number of total tally marks on each section of the chart so ākonga do not need to recount.

The kaiako guides ākonga to write two statements about what they notice. One statement about what they noticed about their results and one statement about what they noticed about the class results. If needed the class statement could be modelled by the kaiako as a 'think aloud' or by eliciting the information from strategic guided questioning before having ākonga look at their group data.

The guided questions and think aloud could be questions and statements such as

- When I look at the table I notice that ... (there were more... there were less ...there were no...)
- I wonder if my chart of results shows all the possible outcomes? How could I check to see if it does?
- I notice that ... (any other things to notice, for example if the first 10 tally marks went into one part of the table etc. It depends on your specific class data as to what you might say here)

Now the kaiako guides ākonga to identify and list possible outcomes using the symbols of



No match



Feet together



Feet apart



Right foot forward



Left foot forward

Alternatively, kaiako could provide coloured counters and have one colour for no match, one for feet together, one for feet apart and one for one foot forward & one back. Ākonga can use the counters to see the possible combinations in a way that allows for movement of each piece. This practical use of materials can help some ākonga ‘see’ the maths more clearly.

As the discussion continues the kaiako helps make the statistical talk visible by having the pairs draw the possible outcomes using the agreed symbols. This helps ākonga to be able to see how many possible outcomes there are and visually be able to count out of all possible outcomes how many can be a match. Encourage ākonga to be systematic about exploring the possible outcomes and answering the investigative question **‘What is the chance of getting a match for each movement option?’**

In this situation we have two ākonga, each of whom can choose from the three movements - feet together, feet apart, one foot forward and one foot back.

A table can help ākonga think about the possible outcomes. They can then shade all the matches. They can consider how many possible outcomes there are all together and then describe how many of the possible outcomes are matches and how many are not a match.

For example, there are sixteen possible outcomes, four of the sixteen are matches, twelve of the sixteen are not a match. Using the ‘no match’ symbol could help some ākonga see more clearly what is a match on the table.

		Player 2			
					
Player 1		 	  	  	  
		  	 	  	  
		  	  	  	   
		  	  	   	  

Ask the questions again:

- Is it possible, or impossible that we might get the same outcome next time we play?
- Is it more likely that we get a match or that we do not get a match when we play this game.

- Each ākonga has four things to choose from, how are outcomes affected by this?
- Is it possible to be certain when predicting which action each ākonga will choose?
- What does your data show?
- Is there anything that shows you that you can be certain that you will get a match?
- Are the chances of a match the same for each of the four movement options? What is the chance of getting a match for each?

CONCLUSION:

The kaiako supports ākonga to complete these statements:

- We played whano whano _____ times.
- We got _____ matches and _____ no match.
- The outcome _____ happened more often than the outcome _____ because _____.
- We think based on our results that _____ is more likely when this game is played because _____.
- This is/is not (choose one) supported by what we found when we listed the possible outcomes.

Bring the completed statements to a class discussion to ensure ākonga hear the ideas of their peers and have many opportunities to sense make.

Reflecting on our outcomes

Now the kaiako supports ākonga to identify whether their predictions for what they expected the results to be is actually correct. What have they noticed about their results? Expected or unexpected? How do they explain this? Explore the question - Is it more likely that we get a match or get no match when we play this game. The kaiako then says 'I wonder if we would get the same outcome if we played this again tomorrow?' This question prompts ākonga to think about the idea of chance.

Notes for teachers

When planning to support ākonga with diverse needs you may choose to use coloured counters as representations of each action, rather than having them draw each outcome, so the recording can be more literal. There is the option to record the results on a table using a digital device if this is more appropriate for your ākonga.

You could have a large piece of paper with the class table on it for ākonga to keep adding data to as they play whano whano throughout the coming days (in their own time). This would give some much bigger number of data to discuss. This demonstrates that maths does not only take place in 'maths time' and promotes the idea that maths is part of our everyday life.

You could have a class shared data recording sheet (e.g. a google doc) that you share with whānau for them to play whano whano at home and add their whānau data to the class set of data.

Whano whano is a very popular game in many kura. As kaiako it is important to acknowledge that whano whano is played in several different ways (depending on the iwi) so make sure you are clear on what version you are going to play in your classroom for this lesson. There is the opportunity for ākonga to

create their own versions of this game using their first language, with the dual purpose of building strength, stamina or fitness for a specific part of their tinana (body). Ākonga may wish to create their version of whano whano with a different number of possible 'moves' and this would affect the table to create and further reinforce this systematic thinking in mathematics. If your ākonga create versions of this game we encourage you to send them in to Census at School with the game instructions and photographs of ākonga playing so your mahi can be added to this lesson as a note for teachers.

If you wish to send this game home for an enjoyable way to strengthen learning partnerships that have their foundation in quality mathematics exploration then the following resources can support you

- [How to play the game](#) (or to send digitally or as a printed out sheet)
- Suggested [message](#) to send home
- Blank [template for recording](#) the whānau results of their whano whano games



[Data Detective Poster - CensusAtSchool New Zealand](#)