

Leave your lunchbox litter

NEW June 2024

Year level: 3

Statistical focus: summary investigations

Approximate number of lessons: 3 (to collect several days data)

Learning goals

- pose summary investigative questions about everyday situations
- anticipate what the data might show
- identify who and what the data measures
- discuss how the data-gathering process might affect other people
- collect, record, and sort data
- create and describe data visualisations
- choose statements that best answer the investigative question, reflect on findings, and compare them with anticipated outcomes

Resources

- Possibly a set of scales to weigh the litter depending on the data collection method chosen
- [Y3 Leave your lunchbox litter Google Slides](#)
- [Data detective poster](#)
- [Litter Intelligence website](#)

Activity

Introduction

These lessons empower ākonga to think about their own taha tinana and the mauri of Papatuanuku. Ākonga will view the litter in their lunchbox through the lens of being ‘rubbish’ or ‘compostable’ with the goal of increasing the percentage of compostable or reusable food wraps.

? PROBLEM:

We have the problem that our world population is increasing and the way that we live impacts Papatuanuku. We would like our impact to be as positive as possible. Ākonga have the opportunity to be rangatira in their kura/school and kaianga/home to live in more sustainable ways. To be able to do this we need data about some of our everyday practices.

Pose the investigative question **'Are our "lunches" litterless?'** and anticipate what the answer to this investigative question will be. Discuss the need to have some sort of count, percentage or fraction to show the answer as you will then want to try and improve your movement towards being litterless.

PLAN:

Decide what is included in "lunch" litter.

- Is it just what we eat for lunch, or do we mean all the litter from food we eat at school that day, including if we have anything for morning tea, or snacks at other times.
- What is litter in this context?
- Ākonga may hold differing viewpoints around the idea of 'rubbish', especially if the idea of 'recyclable' comes into the mix and it is valuable to tease these ideas out with the support of the kaiako.

Discuss the ways to "count" the lunch litter.

- This could be done by counting individual pieces, by weight or another way.
- Each different way to count the data has some pros and cons.
- There needs to be clarity around whether every single piece is counted (e.g. it took 15 pieces to peel the orange) or a total count per item (15 pieces of peel still counts as 1 as this is from one complete orange).

Plan and decide on your data recording sheet and whether data will be collected for

- ākonga's own lunchbox
- the lunchbox of a peer
- In small groups counting together and adding to data to the class dataset
- How many days will the lunch litter be collected - how many data points will we collect (one day is one data point)
- If the litter will be counted and/or weighed or some other method.
- Will you include recyclable items as another category or are these counted in the 'rubbish' count as they are not compostable?

The idea of 'lunch' litter could also be problematic as we actually wish to collect data for the whole day of school eating. So in your planning you may need to discuss that some ākonga bring their food for the day without a lunch box but we would still count this in our data. Refinement of your investigative question could be needed to communicate very clearly what you are investigating.

DATA:

You may want to collect the data as a whole class. Taking this approach means the data is looked at as a collective rather than by individual. The data points then are the days of the week. To get more data points you could collect the data over a longer period of time, e.g., over two weeks.

- If so you could create two (or more) collection points, one for compost items and one for rubbish (plus other categories decided).
- Consider how the litter is put into the data collection point, e.g., in a way that makes it easy to count and/or weigh.
- After the final eating time for the day, count up the two piles together discussing any dilemmas as they come to the fore.

Complete the data collection for the day and add all data to the class collation.

- As you are doing this problems may arise as to what the data is and how to ‘show’ it in a way that can be easily understood and used.
- Will the data be recorded in a table (see below)?
- Explore how the next day’s data could be added?
- The class might decide to count and weigh the lunch litter.
- Will we count/weigh for brain break food, morning tea and lunch eating breaks?

Day of the week	Compost items Count	Compost items Weight	Rubbish items Count	Rubbish items Weight	Add columns as needed
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					

Interesting discussions could be had about the different information a count or weighing the rubbish shows. It is worth taking the time to hear ākongā’s views about this as it is an opportunity to discuss different types of data and select to fit the intended purpose.

ANALYSIS:

Support ākongā to make a data display for the counts and the weights for the class data.

- They could put both the compost items counts and the rubbish items counts on the same set of axes, using different colours.
- This is an excellent opportunity to talk about labels, titles and different ways data can be displayed.

Look at the data from the perspective of noticing what has changed and thinking about possible explanations for this as data is added for each day. Support rich discussion by using prompts such as

- How do you explain...?
- Why might ...?
- What else might be helpful to know or collect data about?

Ask the question ‘How do these results affect people?’

Do you agree or disagree that our lunches are litterless?

Work together to write statements about the data collected over the complete period of time (one to two weeks). Are there any patterns emerging that you have further questions about?

CONCLUSION:

Now ākonga are ready to talk about ‘Do we have evidence to show there has been improvement in moving towards a litterless lunch?’

There is an opportunity to present the class data to the wider school taking up a rangatira role to promote and support each class to become more informed about simple ways that are sustainable to have less litter in their lunchboxes. A school wide statistical investigation could be begun with these ākonga taking the lead and collecting data once a month to present a school picture with data to see if as a collective they can move towards a litterless lunch model. Ākonga could decide that finer detail is needed about the sort of litter, for example, is it recyclable or does it go to landfill? which would lead them to looking at collecting different and more detailed data. The planning for the next collection to measure the impact of their action towards litterless lunches could include

- A school wide week for data collection and whether this should be the same week of every term
- The categories for the types of packaging or rubbish in lunchboxes
- The expectation that counts include all eating break rubbish not just ‘lunch’
- All classes will contribute their data to the school data and this will not be shown as individual class data
- The goal is to reduce the number of ‘rubbish’ items across the school

This statistical investigation could lead to a school wide focus on ākonga as change leaders using data to support their voice and share key messages with impact.

Notes for teachers

It is suggested you begin this statistical investigation on a Thursday so you can plan together as a class. Then Monday is the beginning of your data collection. Teachers select how many days they wish to collect data for. This can be done very simply once set up and could involve a couple of ākonga doing the count from the two collection boxes/containers.

One problem is that it is not always easy, convenient or within the financial means of whānau to have a ‘litterless lunchbox’. There are many reasons why people choose food that comes in packaging that is not compostable and some ākonga may feel whakama so please do think about the learners in your class and proceed with this in mind to create a safe and supportive space for this lesson.

Kaiako could support this learning without direct use of their ākonga lunches if this is deemed too controversial by using photographs of a range of lunches. Some kura do not have ākonga bring lunches in lunch boxes so the audit could be done to look at the packaging or containers that food delivered to school comes in.

If you would like to take the litter idea further you may wish to look at litter in the environment using information sourced from [Litter Intelligence](#).

To simplify this idea you might look at the food type in lunchboxes.

Or you could look at [types of lunches around the world](#) to link to your literacy oral language opportunities.



Data Detectives use PPDAC

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Data detective poster