

# Collecting information using the statistical enquiry cycle.

COLLECT AND COMMUNICATE DATA FOR A NZ DAIRY INDUSTRY ENQUIRY.

## ESSENTIAL QUESTION

### Can statistics be informative and mindbending?

#### WHAT ARE WE LEARNING?

- To understand and use the statistical enquiry cycle.
- To investigate ways of collecting and presenting data.
- To conduct a statistical enquiry that relates to the dairy industry.

#### TRY THIS WITH

- Years 11-12
- Students who have an ability to make sense of numbers.
- Students who love asking questions.

## FIND

- Identify
- Classify
- Label
- Give examples
- Locate
- Compare

Collate twenty graphs that present DairyNZ information on [Pinterest](#).  
 Watch 'fun' and 'amazing' statistics.  
 Create a YouTube playlist of [the best clips](#) that present statistics.  
 Watch 'If...a MindBending New Way of Looking at Big Ideas and Numbers'.  
 Drag DairyNZ's raw data into [DataCracker](#).  
 Use this data to create charts, graphs and reports.  
 Compare DataCracker's and 3Ddairy's presentation of the same data.  
 Find interesting NZ dairy industry figures.  
 Ask: Which figures would work well as visual representations?  
 Explain: You have been contracted to collect local information about the dairy industry.  
 Give ten examples, e.g. population of cows vs. people in a region, how many litres of milk would you buy/sell a week if the price was \$2, \$3 or \$5 per litre.



## APPLY

- Discuss
- Plan
- Problem
- Investigate
- Collect
- Question

Unpack PPDAC (the statistical enquiry cycle) using examples.  
 Decide on a local 'problem (P)' to use as your social enquiry.  
 Brainstorm questions such as: 'how many glasses of milk does community X drink a day?' and 'how long does it take milk to get from the farm to the glass?'  
 Discuss the information required, sample size and sources.  
 Plan to collect evidence from primary sources, e.g. farmers, retailers, consumers.  
 Ensure that each source is only contacted once.  
 Collate class questions on a [Google Doc](#).  
 Consider using apps and [questionnaires](#) to collect information, e.g. SurveyMonkey.  
 Conduct the enquiry.  
 Import the [Data \(D\)](#) from SurveyMonkey into [DataCracker](#) or [iNZight](#).  
 Follow the instructions and video tours to convert the data into reports.



## PRODUCE

- Transform
- Convince
- Modify
- Persuade
- Support
- Influence

Start analysing the data on DataCracker.  
 Make statements about the [relationships between variables](#) and differences in [distributions](#).  
 Find [patterns and connections](#) between the local and DairyNZ data.  
 Make statements such as "if 1000 glasses represent all of the milk produced in NZ, 950 of them are exported".  
 Match this data with three different ways of presenting information, e.g. [visual representations](#) and graphs.  
 Set up an [Easel.ly infographic](#).  
 Choose images to represent statements.  
 Combine statements, visuals and graphs in a final [Easel.ly](#).  
 Judge: Is the infographic correct? Does it display the information in a easy to read way?  
 Transform the Easel.ly into an interactive [Thinglink](#).  
 Embed your sample data and graphs in Thinglink.  
 Link relevant [DairyNZ data](#) and graphs.



## SUCCESS CRITERIA

Students can check they have completed the task successfully by:

- Compiling a questionnaire that will inform an enquiry.
- Conduct an enquiry using the statistical enquiry cycle.
- Creating an infographic that accurately represents the selected data.

PRINCIPLES	VALUES	KEY COMPETENCIES	LEARNING AREAS	WORD BANK	KEY CONCEPTS
Learning to learn High expectations	Excellence Innovation, inquiry and curiosity	Thinking Using language, symbols and text	Economics Mathematics and Statistics	Enquiry Analysis Inference Trends	Statistical data Statistical enquiry cycle External factors Statistical report