

## Australian Curriculum YR 4

ACMSP097 Evaluate the effectiveness of different displays in illustrating data features including variability

- **Identify** and **evaluate** the effectiveness of various data displays found in media and in factual texts, where displays represent data using a scale of many-to-one correspondence
- **Identify** misleading data
- **Discuss** and **compare** features of data displays, including considering the number and appropriateness of categories used
- **Discuss** the advantages and disadvantages of different representations of the same categorical data eg. column graphs compared to picture graphs that represent data using scales of many-to-one correspondence

## Key Idea-

- Interpreting data representations in the media and other forums in which symbols represent more than one data value
- Suggesting questions that can be answered by a given data display and using the display to answer questions

## Resources

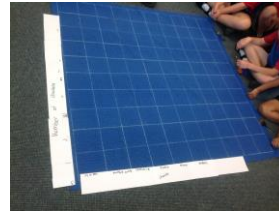
- FISH problem solving kit
- Blue floor mat (with grid pictured)
- Paper strips

## Introductory/Review Activity

Challenge what is in a box of chocolates

## Collection of Data/Display of Data

- Review with the students how data can be displayed. What is the best method? i.e. We can use a table, graph etc. Makes it easy to read, interpret and understand the data
- Review the different parts of a graph. Break it up into different elements or parts. Using the blue floor mat and strips of paper.
- Have students label the different elements or parts.



- Have students create a graph based on a topic that is relevant to them or includes their interests.



(image depicts Picture Graph of Funsize chocolate wrappers)

- Once completed as whole class, have students independently complete data collection and graph in their learning Journal.



This activity met a number of criteria around the Who, What and Where of data.

1. The learners understood what they were trying to find out.
2. The learners discuss what data is needed to help in the challenge.
3. There was discussion about efficient ways of collecting the data.
4. The displayed data can be interpreted satisfactorily.
5. Some conclusions were arrived at.
6. It was enjoyable

## Activity Process-Pose a question

You pose the following question

"What can you say about the child who will be the first one into the playground next Monday lunch time?"

Discuss what 'things' (attributes) could describe the child in question. For example, age, gender, what class they're in, colour of hair, eyes etc., height, shoe size, number of siblings, etc.

Next discuss the collection of information (data) so as to be able, after interpretation, to make a good description of the child. Incorporated in this discussion is the question

"Does it matter what order we collect, display and interpret the data from these different attributes?"

The class then decides upon the who, what and how.

If the children decide, for example, to look at data connected with number of siblings; gender; hair colour; eye colour etc.

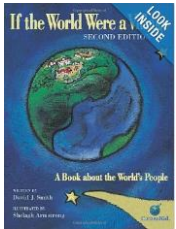
A learner might predict a student with 2 siblings who is a girl, has blonde hair, blue eyes and is in year 3, etc.

The collection of the data is of minor significance and has been done in an efficient way. The important aspect of this learning is the discussion of the possible data.

As a fun activity learners could create data sets and vote which ones are most likely (each student votes once) then on the appointed day they could check to see whether their prediction was right.

### Investigation

If the World was a Village



Ideally, you will need a copy of the book 'If the World Were a Village' by David J Smith and Shelagh Armstrong (published by A&C Black, ISBN 978-0-7136-6880-3).

Activity-What is the best way to represent 100 people?

<http://nrich.maths.org/7725>

Teacher Resource

<http://nrich.maths.org/7725/note>

### Key questions

- What does this data show?
- What does this tell us?
- What do you think about that?
- How is this different from ...?
- If you were in the village, where would you be?
- How many more/less ...?
- Approximately how many is this?
- How will you represent this information?
- Is there another way?
- Is this the clearest way for someone visiting the gallery?

### Assessment

- Uses appropriate terminology to describe, and symbols to represent, mathematical ideas
- Selects and uses appropriate mental or written strategies, or technology, to solve problems
- Checks the accuracy of a statement and explains the reasoning used
- Select appropriate methods to collect data and construct, compares and interprets and evaluates data displays, including tables, picture graphs and column graphs

### Background

A scale of many-to-one correspondence in a picture graph uses one symbol or one unit to represent more than one item or response.

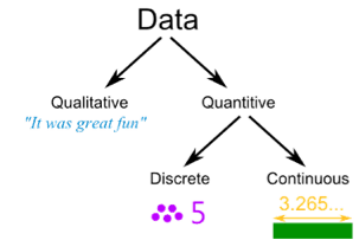
Data is a collection of facts, such as values or measurements.

It can be numbers, words, measurements, observations or even just descriptions of things.

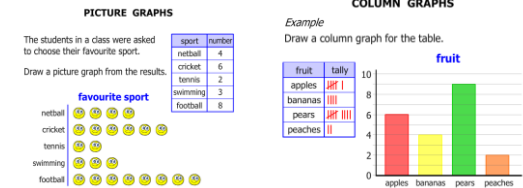
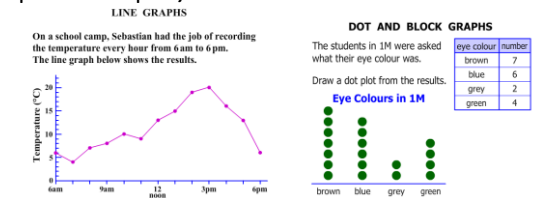
### Qualitative vs Quantitative

Data can be qualitative or quantitative.

- **Qualitative data** is descriptive information (it describes something)
- **Quantitative data**, is numerical information (numbers).



### Examples of Graphs/Data Collection



### 2-WAY TABLES

Example

Lissie asked some friends two questions: "Do you like apples?" and "Do you like oranges?" She recorded their answers in the 2-way table below.

	like apples	don't like apples
like oranges	9	3
don't like oranges	5	2