LIFE ON THE MURRAY RIVER

Level: 3 & 4
Activity: 4

Overview

The water level of the Murray River can be affected by rain events that happen hundreds of kilometres away. Many inland river systems feed into the Murray River. If rain events occur at these systems, the water is carried hundreds of kilometres downstream to the Murray River. During this lesson, students will investigate rainfall in the Murray-Darling Basin over the past year and create a bar graph to visualise how much water this actually is.

Resources

- Smartboard or projector
- Computer access for students
- Poster paper
- Rulers

Activity

ENGAGE

Watch 1956 Murray River Floods (the first video on the webpage).

- How did the community respond to this disaster?
- Why did the flood spread so far across the land?
- Where did this water come from?
- What dangers do floodwaters pose?
- Explain why you should always check rainfall and conditions before swimming in the river?

EXPLORE

As a whole class look at the Murray Darling Basin map. Either allow students to choose, or assign them a town or city within the Murray-Darling Basin (the following task could be done either individually or in pairs depending on student ability). Students now need to collect data regarding total rainfall for the town/city for each month of the previous year. They should collate this data using Appendix A: *Monthly Rainfall Data*. A useful website is Climate Data Online from the Bureau of Meteorology.

EXPLAIN

Model to the whole class how to graph this data as follows:

- Draw the following sample data table on the board:

Town: Examplesville Year: 3000	
Month	**Total rainfall (mm)**
January	37.2
February	54.6
March	113.5
April	68.9

- Show students how to set up their graphs by ruling two axes. Label the horizontal axis with the months and the vertical axis with millimetres. Point out that the vertical axis needs to be at least as tall as their largest monthly rainfall measurement.
- Model how to build the bar graph, using the ruler to measure each total.

ELABORATE

Allow students enough time to create their own bar graphs, using the data they collected, on the poster paper provided. Remind them to include a title and label for each axis.

EVALUATE

Students now need to show their graph to a partner. They should compare their months of most and least rainfall. As a whole class, discuss:

- What would we need to do to change these measurements to cm? (Maybe try a few examples!)
- Which town had the most/least total rainfall for the whole year?
- What do you think the average rainfall for the entire year was across these towns?
- How do you think this might compare to towns/cities in other parts of the country?
- Which parts of Australia do you think would get more/less rain that the Murray-Darling Basin?

Curriculum Links

Victorian Curriculum
Foundation–10

Level 3		
MATHEMATICS	Measurement and Geometry: Using units of measurement	Measure, order and compare objects using familiar metric units of length, area, mass and capacity(VCMMG140)
	Statistics and Probability: Data representation and interpretation	Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (VCMSP149)
GEOGRAPHY	Geographical Concepts and Skills: Data and information	Represent data and the location of places and their characteristics by constructing tables and simple graphs and maps of appropriate scale that conform to cartographic conventions of border, scale, legend, title and north point (VCGGC075)
	Geographical Knowledge: Diversity and significance of places and environments	Main climates of the world and the similarities and differences between the climates of different places(VCGGK081)
Level 4		
MATHEMATICS	Measurement and Geometry: Using units of measurement	Use scaled instruments to measure and compare lengths, masses, capacities and temperatures(VCMMG165)
	Statistics and Probability: Data representation and interpretation	Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (VCMSP179)
GEOGRAPHY	Geographical Concepts and Skills: Data and information	Represent data and the location of places and their characteristics by constructing tables and simple graphs and maps of appropriate scale that conform to cartographic conventions of border, scale, legend, title and north point (VCGGC075)
	Geographical Knowledge: Diversity and significance of places and environments	Main climates of the world and the similarities and differences between the climates of different places(VCGGK081)

Sample Report Comments

{Name} understands that rainfall differs throughout the year and across the country. {He/She} knows that rainfall in one area can affect water levels in a river hundreds of kilometres away.

{Name} collected data regarding monthly rainfall in {Town}, analysing and comparing with other towns in the Murray-Darling region. {He/She} displayed this data accurately as a bar graph.

References

Discover Murray River, 1998-2018. *1956 Murray River Floods*. [online video] Available at: http://www.murrayriver.com.au/about-the-murray/1956-murray-river-floods/ [Accessed 15 July 2018]

Murray-Darling Basin Authority. *Murray-Darling Basin Boundary Map,* https://www.mdba.gov.au/sites/default/files/pubs/Murray-Darling_Basin_Boundary.pdf [viewed 15 July 2018]

Bureau of Meteorology. *Climate Data Online,* http://www.bom.gov.au/climate/data/?ref=ftr [viewed 15 July 2018]

Appendix A

Monthly Rainfall Data

Use the table below to compile data about your chosen town/city's monthly rainfall totals for the previous year.

Town/City: **Year:**	
Month	**Total Rainfall (mm)**

Now, using the data that you have collected, complete the following tasks:

1. Find the month with the **highest** total rainfall and colour it **green**.

2. Find the month with the **lowest** total rainfall and colour it **red**.

3. Can you think of any reasons why these months might have had the highest and lowest rainfall?

3. Estimate the total rainfall for the whole year:

4. Now calculate the total rainfall for the whole year:

5.How do you think this will compare to other towns in the region?