

LIFE ON THE MURRAY RIVER

Level: 7 & 8

Activity: 2

Overview

The Murray River is an amazing resource that has helped sustain life for tens of thousands of years. Today it plays an important role in Australia's lifestyle and economy. Many farms depend on it to provide water for irrigation. However, irrigation and land clearing can contribute to an increase in salinity which may impact negatively on the ecosystem and threaten the water supply for people and livestock. During this activity, students will learn about the water cycle within the Murray-Darling Basin and investigate some of the issues that threaten the health of the river. Students will analyse and interpret river data, including water levels, flow rates and salinity levels.

Resources

- Computer access for students
- Smartboard or projector

Activity

ENGAGE

Watch [The Water Cycle in the Murray-Darling Basin](#) together as a whole class.

EXPLORE

Have students complete a PMI chart in their workbooks. They will need to divide their page into three sections; *Plus*, *Minus* and *Interesting*. They can then fill in their chart with facts and ideas from the video. Share some of these as a class and collate students' ideas on a large PMI chart on the board. Look at the *Minus* section and ask students what they think are the main threats to the health of the river.

EXPLAIN

Look at the [Map of Topographic Drainage Divisions and River Regions](#) from the Bureau of Meteorology. Encourage students to make observations and draw conclusions using the information presented by asking:

- Can you locate the Murray-Darling Basin? Can you identify any of the other regions?
- Which of these regions do you think would get the most/least rain? Why?
- What role does topography play in defining these water catchment areas? For example, what significant geological feature separates the Murray-Darling Basin from the South East Coast?
Answer: The Great Dividing Range – Water runs off to the east and west into the two different catchment areas.
- Looking at the other regions, can you explain any of these drainage areas based on the geographical features of the area? For example, water drains into Lake Eyre as it is the lowest natural point in on the mainland of Australia.

ELABORATE

With a partner, students will need to access the [River Data](#) website. They need to choose one location along the river and look at the graphs showing the various measurements over time (eg. Water level, flow rates, salinity etc). By comparing these graphs, students need to make some statements about what might have happened at certain points in time. For example:

At Tocumwal on the 24th of August, 2017 the water level rose to 4.359m. Flow rates were also much higher on this day. This might have contributed to the drop in salinity that occurred over the following week.

EVALUATE

Each pair of students can now present their observations to the class. Encourage students to ask questions and discuss the observations made. Ask students to identify some times when it might not have been safe to swim in the river based on the data they have seen and explain why. Discuss the importance of checking the conditions, such as rainfall and currents, before entering the water.

Curriculum Links



| Level 7 | | |
|-----------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GEOGRAPHY | <u>Geographical Knowledge:</u> Water in the World | Ways that flows of water connect places as they move through the environment and the ways this affects places (VCGGK106) |
| | | The quantity and variability of Australia's water resources compared with those in other continents and how water balance can be used to explain these differences (VCGGK107) |
| | <u>Geographical Concepts and Skills:</u> Data and Information | Analyse maps and other geographical data and information using digital and spatial technologies as appropriate, to develop identifications, descriptions, explanations and conclusions that use geographical terminology (VCGGC104) |
| Level 8 | | |
| GEOGRAPHY | <u>Geographical Knowledge:</u> Water in the World | Ways that flows of water connect places as they move through the environment and the ways this affects places (VCGGK106) |
| | | The quantity and variability of Australia's water resources compared with those in other continents and how water balance can be used to explain these differences (VCGGK107) |
| | <u>Geographical Concepts and Skills:</u> Data and Information | Analyse maps and other geographical data and information using digital and spatial technologies as appropriate, to develop identifications, descriptions, explanations and conclusions that use geographical terminology (VCGGC104) |

Sample Report Comments

{Name} has learnt about the water cycle within the Murray-Darling Basin. {He/She} is beginning to explain the movement of water through the landscape in relation to topography and other geological features.

{Name} analysed and interpreted graphs showing data regarding water levels, flow rates, temperature and salinity in the river over time. {He/She} compared these graphs, identifying changes and was able to make some reasonable assertions about what might have caused these changes.

References

Bureau of Meteorology. *Australian Hydrological Geospatial Fabric (Geofabric)*, http://www.bom.gov.au/water/geofabric/documents/BOM002_Map_Poster_A3_Web.pdf [viewed 12 July 2018]

Murray-Darling Basin Authority. *River Murray Data*, <https://riverdata.mdba.gov.au/system-view> [viewed 12 July 2018]

FUSE, 2017. *The Water Cycle in the Murray-Darling Basin*. [online video] Available at: <https://fuse.education.vic.gov.au/Resource/LandingPage?ObjectId=d726e7cf-bab2-4ac8-be41-99f5cfa434c7> [Accessed 12 July 2018]