

Activity Sheet 3

“The growing demand for our water supplies”

Introduction

Whilst the previous two activity sheets were concerned with the supply of water resources, the next set of activities look at what is happening to the demand for our water supplies and the social, environmental and economic impacts that this is having.

The content of this activity sheet relates to the following Geographical Concepts and Skills and Geographic Knowledge.

Geographical Concepts and Skills:

Place, space and interconnection

- Identify, analyse and explain spatial distributions and patterns and identify and explain their implications

Data and Information

- Collect and record relevant geographical data and information from useful primary and secondary sources, using ethical protocols.
- Select and represent data and information in different forms, including by constructing appropriate maps at different scales that conform to cartographic conventions, using digital and spatial technologies as appropriate.
- 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.

Geographical Knowledge:

- 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
- Nature of water scarcity and the role of humans in creating and overcoming it, including studies drawn from Australia and West Asia and/or North Africa.

Introductory Activity

This introductory activity aims to show the demands that our various uses of water place on our water supplies.

Steps.

1. Divide the class into two even groups. (This activity could also work with three or four groups)
2. In the centre of a whiteboard write the topic “How do we use our water supplies?” You can choose whether this is for all of our water supplies including oceans or just fresh water supplies. Remember that fresh water supplies consists of glaciers, permafrost, ground water, lakes, rivers, wetlands, moisture in the atmosphere and plants and animals.
3. Explain the rules.
 - Each team takes it in turns to write on the whiteboard an example of how we use our water supplies.
 - Only one member from each of the teams needs to write their team’s answer on the whiteboard.
 - From the time the last group places the whiteboard marker down (select a designated spot) the next team has 5 seconds to commence writing their response (this could be reduced to 3 seconds after each group has had a few turns). If a group is unable to write a response they are eliminated from the contest.
 - If a group repeats an answer already listed then they will occur a time penalty (e.g. 2 seconds) and will need to write another response. If they are unable to do so they are eliminated from the contest.
 - Determine how broad you would like the categories of responses. For instance, will you allow answers such as irrigation for rice farming, irrigation for cotton etc. or are you going to only allow irrigation?
 - Decide if you will allow students to access text books or electronic devices.
4. Allow the groups 1-2 minutes to organise their tactics.
5. There is a possibility that this activity could continue for a length of time. Determine how many minutes that you want it to go for. Normally between 10 -15 minutes is adequate. If no team has won by your designated time determine the winner by a “rock off” i.e. a game of rock, paper scissors

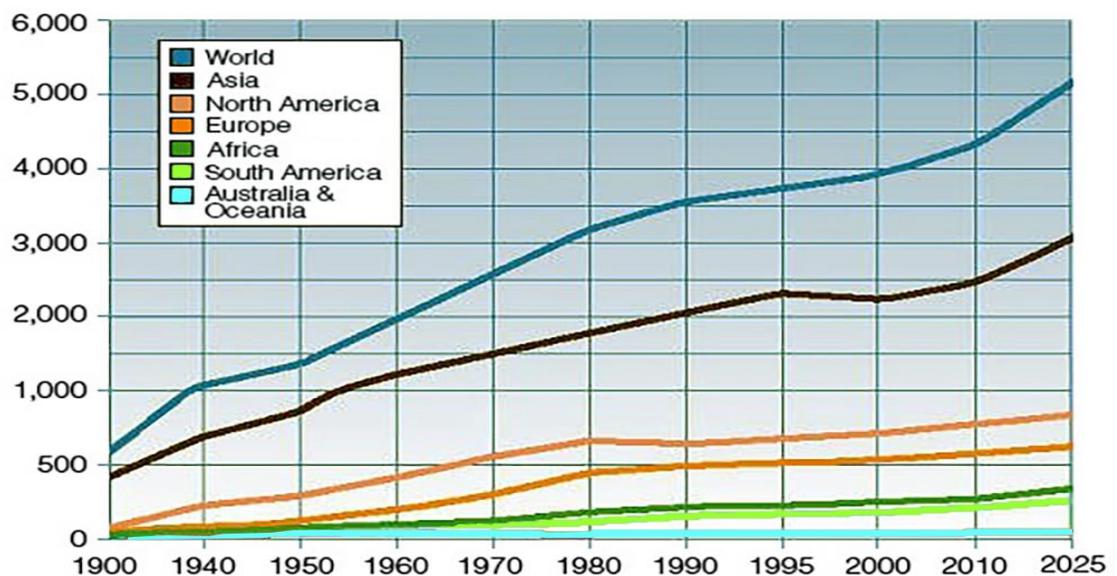
Alternative format:

If your school has a 1:1 device policy, then you may like to create a [Padlet](#) or [Answergarden](#) to integrate ICT. This reduces the kinaesthetic aspect of the game, but allows for a different type of interaction.

Follow Up Activities

1. It is likely that you will have a whiteboard full of responses that should generate some great class discussion about:
 - The variety of uses of our water supplies and the pressure placed on our water supplies.
 - How important our water supplies are to society and what it would be like if we did not have sufficient water
 - The need to protect and conserve this valuable resource.
2. Determine if you would like students to record the brainstorm responses and if so, the method. If you have used an electronic format then students can download this or it can be emailed/ shared with them.
3. Conduct the necessary research to find information about annual water withdrawal 1900- 2025. You could also refer to images such as that below

Global Water Consumption 1900 – 2025 (by region, in billions of m³ per year)



Graph taken from:

<https://commons.wikimedia.org/wiki/File:Annualglobalwaterconsumption.jpg>

More sites can be found here:

[Water Use 1](#)

[Water Use 2](#)

[Water Use 3](#)

Referring to the data obtained:

- In a paragraph describe the broad trends for the world water consumption between 1900 and 2025.
 - List the regions of the world have experienced the largest increase in water withdrawal between 1900 and 2025.
 - Suggest reasons why these regions have experienced an increase in water consumption. Link the responses to the next task.
4. As a class [watch the population clock](#). Some of the terms may need to be explained. With the rise in world population what will happen to the demand for and consequently the pressure placed on fresh water resources? Engage the class in a discussion and record these responses as a brainstorm. For this task you could also show the rising demand for water by going to www.worldometers.info/water.
5. As a class conduct research to discover the trends in Australia’s water consumption. For more specific details about the amount of water used per country and where Australia sits go to websites such as <https://www.statista.com> › [Energy & Environmental Services](#) › [Water & Wastewater](#) It is important to acknowledge that Australia has a high water use per capita yet apart from Antarctica we are the driest continent. (Specific countries are drier).
6. Using the answers contained in the introductory activity ask students to select what they believe would be the largest use of water supplies in Australia. After this discussion show students the following statistics. (More specific information about the use of water in Australia and other activities can be found in “Water and the World” found in the [GTAV website](#)).

Uses of Water in Australia

Irrigated Agriculture - 67%	Household – 9%
Water supply, sewerage and drainage – 7%	Manufacturing – 3%
Electricity and gas supply – 7%	Mining – 2%
Environmental Flows – 2%	Other – 3%

Source: GTAV “Water and the World” page 11

7. Using the statistics above complete the following tasks:
- Construct a graph showing the uses of water in Australia.
 - Comment on the importance of water to agriculture in Australia.
 - What reasons can you provide to explain why agriculture uses so much of our water supplies? If you wish to extend this question you could include map work such as comparing the location of different forms of agriculture and Australia's annual rainfall or temperature.

Extension Activity

1. Research how Australia uses water supplies to that of another country listed in <https://www.statista.com › Energy & Environmental Services › Water & Wastewater>.
2. List the similarities and differences of these uses. You could choose to complete this task in an individual, group or whole class setting.
3. Use the table below to record your research. Highlight the similarities and underline the differences)

Water Usage	Australia	Country:

4. Present the findings to your peers.