



# Run the river: The water cycle

## Lesson overview

In this activity students will use the *Run the river – a water sharing challenge* app to investigate:

- the components of the water cycle
- the connections between the elements of the water cycle
- how humans impact on the water cycle.

## Australian curriculum outcomes

Science (years 7 and 8)	ACSSU222/225, ACSHE121/136, ACSIS125 and science inquiry skills
Geography (year 7)	ACHGK038, ACHGK040 and gathering geographical information
Cross curriculum priority	Sustainability (systems, world views and futures)

## Lesson components

- mind mapping the water cycle
- playing *Run the River* and responding to questions
- further investigation.

## Notes

*Run the River – a water sharing challenge* is an interactive game designed for smart devices (iPads, iPhones and Android devices) and combines elements of the natural water cycle with the challenges of balancing water use between various water consumers including the river mouth, wetlands, farms, towns and cities. The app has been developed with historic and modelled data.

Depending on your students' familiarity with the water cycle, they might want to use the tutorial in the run the river app (it is on by default) to give them information about how the water cycle features in the game.

Students should be given enough time to progress through the game to 1977, where groundwater and bores are added to the game. These two elements of the water cycle are very important in Australian water management.

## Useful web links and resources

[Map of the Murray–Darling Basin, showing floods and droughts as well as rainfall variability](#)

[Map showing how rivers connect floodplains and wetlands](#)

[Understanding groundwater](#)

[Bureau of Meteorology rainfall in the Murray–Darling Basin](#)



# Run the river: The water cycle

## Part 1: mind mapping

What do you already know about the water cycle? What do you find interesting? Draw a knowledge diagram, mind map or a cycle diagram to outline what you already know.

Important things to explore are:

- elements of the water cycle
- what is happening when water moves from one part of the water cycle to another
- examples of the water cycle operating and its impacts on Australia, on the Murray–Darling Basin and in your local region
- what impacts do humans have on the water cycle.

## Part 2: play!

Individually or in small groups play *Run the river — a water sharing challenge* for about 20 minutes. Use your brain-power, as well as information presented in the game tutorial to answer the following questions.

1. Why do farms need water? Identify three reasons.

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2. At which time of year would farmers use most water? Why?

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3. Why do cities need water? Identify three reasons.

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# Run the river: The water cycle

4. At which time of year would the city use most water? Why?

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5. Why does the environment need water? Identify three reasons.

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6. At which time of year would the environment need most water? Why?

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7. Look at the picture on the next page. Indicate where you can observe each of the following features by writing the corresponding letters on the picture:

- a. evaporation
- b. clouds
- c. water tank
- d. dam
- e. ocean
- f. river
- g. groundwater
- h. bore
- i. transpiration
- j. precipitation



# Run the river: The water cycle



8. In the picture you can see a gauge on the lower left side. This shows the amount of groundwater left. What is groundwater?

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9. Why is groundwater important?

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10. Is groundwater a renewable or non-renewable resource?

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# Run the river: The water cycle

11. List three benefits and three impacts of dams.

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## Part 3: further investigation

1. Investigate some of the ways that we can save water in cities, farms or towns. Design an informative brochure outlining why water saving is important and how it can be done.
2. Take a close look at the water cycle where you live. Which part of the water cycle brings you the most water? (Hint: Is it rivers, rainfall, groundwater or even snow?)
3. Set up a weather station at school or at home. Plan a scientific investigation to monitor evaporation and rainfall for a school term.