

Year 7 science and geography

How can floods affect our water supply

Australian Curriculum links:

Year 7 Science

People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)

Year 7 Geography

Causes, impacts and responses to an atmospheric or hydrological hazard (ACHGK042)

Sustainability cross-curriculum priority

In this activity, students analyse a media article ([Water supplies critical in the valley](#)) about the water supply crisis in the Lockyer Valley during the 2011 floods. They explore some of the problems and solutions for providing safe drinking water to residents during floods and other natural disasters.

Equipment

For the class

- enlarged copy of the 'Water supplies critical in the valley' (resource 1)
- enlarged copy of the 'True or false?' (resource 2)

For each student

- a copy of the 'Water supplies critical in the valley' (Resource 1)

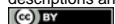
Activity steps


1. Display the title of the article and ask students to predict what they think the media article is about. Ask students to identify any words or phrases that are unfamiliar to them and to predict which words in the article are scientific words e.g. testing, e-Coli, water treatment plant. Discuss the words and phrases in the article, particularly the science-related phrases, and summarise the story.
2. Students read the 'Water supplies critical in the valley' article (resource 1).
3. Display the 'True or false' statements (Resource 2). Either individually or as a class, students respond to a series of true or false statements about the information solely in the article. Discuss the answers with the class.
4. Using a think-pair-share strategy, students identify the problems facing the communities and possible solutions.

Note: In a think-pair-share activity, students spend some time individually thinking about and recording their ideas. They then share their ideas with a partner and decide on the list for their pair. Two pairs of students form teams of four to develop a team list.

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Problems could include:

- The water treatment plant could be flooded and not operating.
- There could be additional sediment and contaminants in the water prior to or after treatment.
- There could be wash-outs with broken water pipes which cause leakages or contamination in the water distribution system.

Solutions could include:

- reducing water use
 - trucking drinking water (either bulk or bottled) into the community
 - fixing the water treatment plant
 - fixing the washed-out or broken supply pipes.
5. Discuss how science and technology is used in this context to provide safe drinking water to these communities.

Resource 1 Analysing a media article

Water supplies critical in the valley

A water crisis has enveloped south-west Queensland in the wake of the devastating floods.

The Lockyer Valley towns of Withcott, Helidon and Gatton have run out of water while only two to three days supply remains in Laidley.

A disaster management group is working closely with Queensland Urban Utilities to provide an alternative water supply.

Bottles of water are being distributed in Gatton and Hatton Vale, with a limit of three per person.

Lockyer Valley CEO Ian Flint said residents needed to cut their water use to an absolute minimum.

“We ask (Lockyer Valley) residents to please conserve water for absolute essentials, and we’re getting tanked water, and bottled water delivered this morning to alleviate the situation, but we’re really facing running out of water,” he said.

Meanwhile, advice for Toowoomba residents to boil their water before use which was issued on Tuesday morning was lifted yesterday. Deputy Mayor Paul Antonio said the advice was a precautionary measure.

“Testing indicates the water is fine,” he said.

“We were just recommending residents who didn’t feel comfortable about using the water to boil it.”

Chinchilla residents remain under strict instruction to boil their water for three minutes prior to consumption until further notice.

It came after e-Coli was detected in the town’s supply.

Dalby has remained on stringent water restrictions since the town’s water treatment plant was critically damaged by floodwaters.

While repairs have been carried out, a new rise in the Condamine River was yesterday threatening to again take the treatment plant off-line.

Resource 2 True or false?

Q1 The towns of Withcott, Helidon, Gatton and Laidley ran out of water.	True	False
Q2 Residents in the Lockyer Valley were asked to boil their water.	True	False
Q3 Floodwater from the Condamine River damaged Dalby's water treatment plant.	True	False
Q4 e-Coli can contaminate drinking water if the water treatment plant is damaged.	True	False
Q5 Queensland Urban Utilities is responsible for managing the disaster response.	True	False
Q6 Enough drinking water is stored after treatment to last for at least a couple of days.	True	False
Q7 Residents in flood-affected areas should water their gardens.	True	False
Q8 Water treatment plants are built high above flood height.	True	False
Q9 e-Coli can cause human health problems.	True	False
Q10 Water produced by water treatment plants is tested regularly to ensure that it is safe to drink.	True	False

Source: <www.thechronicle.com.au/story/2011/01/14/water-supplies-critical-in-valley-toowoomba>
Accessed 30 April 2011. Used with permission.