

Making water drinkable—Water treatment

» Lesson overview

In the previous lesson, students investigated where water comes from and how it is treated. They also investigated some practical aspects of filtering water. A variety of systems are used to purify water for drinking. It is important to understand the stages involved in treating drinking water for the local area. In this lesson, students learn about the basic processes of water treatment.

The students will work through one of The Le@rning Federation's learning objects: 'Making water drinkable—Water treatment' (L3130)

» Lesson objectives

In this lesson, students:

- explore the stages in a water treatment plant
- identify a number of ways to make water drinkable.

» Opportunities for assessment

Monitoring of student journals will allow identification of student alternative conceptions and will provide evidence of student learning.

» Preparation

Organise access to computers and to the learning object. The learning object, 'Making water drinkable—Water treatment' (L3130), is available to Education Queensland schools, and schools that subscribe to Education Queensland's The Learning Place.

Go to <<http://education.qld.gov.au/learningplace/cx/?&showNotice=true>>

Preview the learning object and choose those additional activities (if any) you want students to do.

CD-ROM copies of The Le@rning Federation learning objects are also available under licence from some Queensland teacher professional associations, if you are a member.

If you are limited by the number of computers available, set up a number of workstations to provide alternative activities while some students are working on computers.

» Lesson steps

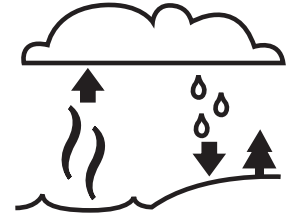
1. Review students' journal entries for the previous lesson. Ask them to share what they learned, and what they found challenging.
2. Ask students to work through the learning object, 'Making water drinkable—Water treatment' (L3130), and complete the work sheet.
3. Select the link, 'Making water drinkable—Water treatment'. Ask students to read the information paragraph and follow the links. Do not complete the 'To do' activity.
4. Discuss the answers with the class. On completion, students can glue the work sheet into their journals.
5. Make any new entries onto the class TWLH chart and discuss.

Resource 4

❖ Learning object: Making water drinkable—Water treatment

Click on the words 'Water Treatment' and then move the mouse to the words 'Next Page' and click.

Read the information and roll the mouse over the pictures for more information. Move through each page and answer the following questions:



1. List the steps involved in producing drinking water through a water treatment plant:
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.
 - g.
2. What is the purpose of filtering water? Answer in full sentences
3. How do filters work? Answer in full sentences
4. What is the process of boiling and condensing water to make it drinkable called?
5. What else can be used to create this method of making drinkable water?
6. This learning object was developed in Victoria so the water treatment process may be slightly different to the water treatment process in your town or city. Compare the learning object treatment process with your local treatment process.

Which steps are different?

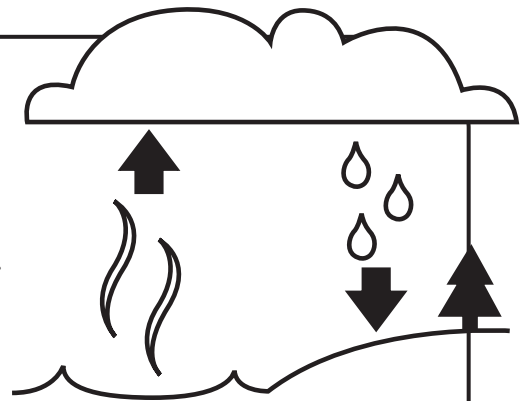
Resource 4 (continued)

❖ Learning object: Making water drinkable—Water treatment

Teacher answers

Click on the words 'Water Treatment' and then move the mouse to the words 'Next Page' and click.

Read the information and roll the mouse over the pictures for more information. Move through each page and answer the following questions:



1. List the steps involved in producing drinking water through a water treatment plant:
 - a. intake from reservoir
 - b. filters remove coarse material
 - c. pre-chlorination
 - d. flocculation and settling
 - e. sand filtration
 - f. fluoridation and post-chlorination
 - g. to storage and water users
2. What is the purpose of filtering water? Answer in full sentences. *The purpose of filtering water is to separate large particles from the water.*
3. How do filters work? Answer in full sentences. *The water containing the large particles is passed through grilles, which separate the larger particles from the water.*
4. The process of boiling and condensing water to purify it is called: *distillation*
5. What else can be used to create this method of making drinkable water? *solar still; plastic bag over a leafy tree branch*
6. This learning object was developed in Victoria so the water treatment process may be slightly different to the water treatment process in your town or city. Contrast the learning object water treatment process with your local water treatment process.

Which steps are different?

Usually Queensland water treatment processes do not have a pre-chlorination step and, until recently, they did not have a fluoridation step.