



Blue Planet: Water Washing

GRADE 8

LESSON DESCRIPTION

Freshwater is essential for human well-being, but any source needs to be treated before drinking. Making a home-made water filter and trying to clean muddy water is a great way to illustrate the process involved to make water safe to drink.

SUGGESTED CURRICULUM LINKS

Water Systems - 8-4-15, 8-4-19

LESSON

Students can use simple items and materials found around the home to build a swamp water filtration system and test it following design and scientific method principles.

Materials

- Empty pop bottles (2 or more depending on how many filters you test), with top $\frac{1}{3}$ cut off
- Nylon stocking or coffee filter
- Elastic bands
- Cotton balls
- Pebbles or sand, various coarseness
- Leaves or peat moss
- Muddy water (from outside) in a container
- Clean tap water in a container (for comparison)



AT HOME CLASSROOM RESOURCES

OLDER YEARS

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Directions

The objective of the activity is to compare different water treatment techniques in an attempt to clean swamp water.

Note: Any water from the outdoor environment contains microbes: bacteria and parasites from animal feces, which will not be removed by this filtration method. Do NOT drink any of the water you are testing. Boiling or chemical disinfection would need to follow the filtration step.

1. After understanding the objective, have students collect what they need for the activity. This includes all filter materials, muddy and clean water samples.
2. Have students prepare two or more filters for comparison, detailing which materials were used and in what order. Ideas can come from online research.
[Simple Filter from Instructables](#)
[More Advanced: Home Science Tools Filter](#)
3. A hypothesis should be made about which filter will produce the clearest, best water. To record results, students can use the template provided from FortWhyte's Blue Planet Program.

[FortWhyte's Water Washing Data Sheet](#)

Discussion

1. Which of your filters worked the best? What would be some reasons why it worked well? Why did the poorer filter not work?
2. Research what the City of Winnipeg uses to treat our drinking water, which comes from Shoal Lake, over 130km south-east of the city. Compare this process to your filtration unit.
[City of Winnipeg Water Treatment](#)
3. Chemical methods were not used in our treatment. Is the water safe to drink? What are chemicals that can be used to make the water safe to drink?
4. Would this treatment remove oil or pesticides? (No)