

Cleansing, Sparkling *Koos*

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Summary

Students explore the importance of water conservation and investigate how plants clean water.

Grade level

Kindergarten

Time required

One hour, plus a fieldtrip

Materials

[The Nez Perce story “Why the Columbia River Sparkles”](#)

Paper, crayons and markers

Stream table tray or other tray

Sod or soil and grass seed

Clear plastic cups

Equipment for examining wetland debris – trays, magnifying glasses, spoons, cups, etc.

Goals

By completing this lesson, students will

- 1) gain awareness of the importance of water conservation,
- 2) learn how plants can help clean water,
- 3) develop inquiry process skills and
- 4) gain awareness of the significance of water to the Nez Perce people.

Science standards addressed

National Science Standards

- Abilities necessary to do scientific inquiry
- Types of resources
- Changes in environments

American Indian Science Standards

- Observations and understandings of nature and ecological relationships traditionally formed an essential base of knowledge among American Indian cultures
- Elements of the pre-contact North American environment and how changes to them were brought on by the arrival of Europeans in North American, such as the effects of the fur trade on animal populations and its subsequent effect on Indian life

Teacher tips

During the teacher demonstration, students will observe the ability of plants (grass in the model) to clean water by trapping sediments. Obtain three large clear plastic cups for the demonstration. Make dirty water for the investigation by mixing water, dirt, grass clippings, leaves, small rocks, etc. Fill two of the cups with the dirty water sample, trying to make them as uniform as possible.

A stream table tray is ideal for this investigation, but any rectangular tray such as a cat litter tray or aluminum baking pan will work. Drill a drain hole in the center of the lower edge on one of the short ends.

The demonstration utilizes a section of grass in the tray. Use pre grown sod cut to cover half the tray; it should fit snugly so water will not run off the sides. Alternatively, grow your own grass. Fill half the tray with about two inches of soil and throw in grass seed. Place in a sunny spot and water regularly until you have a thick bed of grass. A hearty grass with dense stems works best.

Obtain trays or bowls for students to use in collecting and examining wetland debris. Have them scoop up cupfuls of debris from around the base of cattails and other plants on the edge of wetlands, and use instruments such as spoons and magnifying glasses in order to observe firsthand how plants clean water by trapping debris. Make sure students wash their hands after the investigation.

Background information

Koos is the Nez Perce word for water. Water is a very important part of Nez Perce culture. Much of the traditional Nez Perce lifestyle was centered around the waters of the Columbia River and its tributaries. The Chinook salmon was the main element of the Nez Perce traditional diet. Many of the Nez Perce stories talk about the rivers and the salmon. The arrival of non Indians to the Columbia River Valley in the early 1800's brought with it development in the form of agriculture, building of towns, and the construction of dams, to name a few examples. These activities resulted in large changes not only in the rivers and streams, but also in the Nez Perce lifestyle. To the Nez Perce people, no environmental issue is greater than the degradation of the waterways and the impacts it has on the salmon.

Procedure

Engagement

- 1) Ask an elder to tell your class the story "Why the Columbia River Sparkles" and talk with students about the significance of water to Nez Perce people.
- 2) Brainstorm with students and make a class list of ways that they use water (bathing, toilet, drinking, etc.). Ask them what happens to the water after it is used.

Exploration

- 1) Obtain two dirty water samples, an empty cup and a stream table tray. Place the tray so that the drain hole extends off the edge of the table. Place a 1" book under the other end of the tray in order to tilt the tray slightly.

- 2) Tell students that, since no new water is made, Earth's water is cleaned and reused. Tell them that Nature has ways to clean water. Show them the stream table set up and dirty water sample. Ask students to *predict* what will happen to the water when you pour it over the grass model.
- 3) Slowly pour the water over the high end of the grass, while a student holds the drain cup beneath the hole at the other end. Show students the water that drains out, and ask them to compare it to the unused sample. Ask students to draw pictures of the two samples.

Explanation

Ask students to share their pictures of and observations about the samples. Ask them to explain what happened to the sample. Discuss the idea that plants can help clean water by trapping debris that is in the water.

Elaboration

- 1) Take students on a fieldtrip to a wetland area. Invite a tribal natural resource professional to accompany the class and talk about the wetland. Have students collect and study debris from around the base of plants on the water's edge.
- 2) Introduce the word *conserve* and ask students how they can conserve water. Have students draw a picture of one way to conserve water and keep it clean.

Evaluation

- 1) Assess students' understanding of the demonstration through their pictures and explanations.
- 2) Talk with students as they draw their water conservation pictures. Assess their understanding of Earth's limited water supply and how important it is to take care of it.

Vocabulary

conserve

predict