

Respecting Our House

Objectives

Children will:

- learn the many dynamics of a watershed through reading an excerpt of a traditional Coast Salish story from *One with the Watershed*, discussions, and a science experiment
- understand that all people live in a watershed
- understand how runoff water accumulates various materials (including pollutants) and collects in larger bodies of water
- gain a sense of place, in relation to where and how they live today and become aware of the roles we play in our watershed
- become aware that there were and are Native families since time immemorial, living today where they live
- learn the importance of stewardship and about the stewardship of natural resources that Native families have practiced since time immemorial

Materials

Water	Marker	Green Jello Mix
Garbage bag, white	Small craft cups	Cocoa powder
Newspapers	Spray bottle with water	Chocolate sprinkles
Paper for charting		Colored drink powder
Oil (cooking or some other nontoxic oil)		

*Optional - Add people, animal, and automobile figurines to areas around the watershed. You can also add small houses or community places to the landscape.

Story

Excerpt from [One With the Watershed](#) Presented by The Tribal Communities of the Pacific Northwest, The Northwest Indian Fisheries Commission, and The Seattle Aquarium. This curriculum is a great resource for Puget Sound watersheds and sustainability.

Vocabulary

Introduce these words and phrases and use them in the explanation of the activity and during the process of making the watershed.

Watershed	Pollutants	Upstream
Runoff	Stream	Downstream
Rainwater	Stewardship	Crumple
Landscape		

Preparing for the Lesson

- Begin gathering materials before implementing the lesson.
- Customize the *Letter to Families* template explaining the activity you are doing and send home long strips of construction paper. Invite families to write an intention to help the watershed on the “cedar” strip that will be added to the mural/ cedar mat. You can also invite families to attend the day of the watershed activity. Be sure to include a date and time on the letter if you do invite parents in to participate.
- For your information and to gain some perspective of Native peoples’ role in stewardship, please read through this excerpt from *One with the Watershed*: “WITH CAREFUL WORK WE CAN RESTORE OURSELVES TO BALANCE- Much of Native American environmental activity is ceremonial. This is conscious community action that acknowledges the basic harmony of the natural world and the unique ability human beings have to get out of balance with that existence. The two steps are to recognize when we are not connected and then restore ourselves to stability,” (page 54, *One With the Watershed*).

Let’s Get Started

- After reading the excerpt handout from *One with the Watershed* to students, explain to children, “When it rains some of the rainwater soaks into the ground. The rest of the rainwater is called runoff because the water stays on top of the ground until it finds a ditch, hole in the ground (or depression), or a drain to fall into. Runoff is water that follows tiny streams or drainage systems that flow into bigger streams and rivers. Some of it flows into lakes and wetlands. Everywhere where the water flows is called a watershed and we all live in a watershed. We are going to build a watershed together and see what happens to water and other things on the ground when it rains.” **Note:** *You may want to use hand gestures while explaining and or use the Story Card for “watershed” while you are explaining this piece.*
- Before beginning:
 - Cover a table and or the floor with several layers of newspaper or plastic drop cloth
 - Put the chocolate sprinkles, cocoa powder, colored drink powder, and green jello mix into separate small craft cups and label what they each represent: chocolate cake sprinkles – animal waste, cocoa powder – vehicle exhaust and oil, colored drink powder – chemical runoff, green jello mix – fertilizer. Display cups on a tray.
 - Cut out the bottom of the white garbage bag, and straight up one side so that it opens into one large piece of rectangular plastic. You may also use a plastic table cloth instead of a garbage bag. White works best as it will be hard to see the colors on dark plastic.
- Tell students, “I have some materials on my tray that represent different things that might fall on the ground outside every day. These things are not made from the earth, so when they touch they earth, they are called a pollutant.” Hold up or point to each cup and describe what the substance represents and also point to the label on the cup as you read it. Say, “We are each going to take a turn placing these materials, or pollutants, on our watershed and see what

happens when it rains. But first we need some mountains and hills.” Hold up the newspaper and show students how to “crumple” newspaper and have a student(s) crumple and lay the newspaper on top of the table. You may also lay out an assortment of upside down plastic containers to create mountains and hills. Next spread the opened up garbage bag on top of the newspaper. Have students observe what the plastic looks like over the newspaper. Ask, “Do you see where the high places of our landscape are (point to)? What about these low places (point to)? I wonder what will happen down here when we add rain to our landscape.”

- Have students spray water on the watershed. Say “Here comes the rain on our watershed! What do you see happening? Where is all the water going?” Guide children to notice where the water accumulates, and point out that there are now “rivers” and “lakes” on their watershed. If needed, note that water always moves from high areas to lower areas.
- Have students add each pollutant to the watershed wherever they would like. While they are adding a certain pollutant ask “How did that _____ get there? What put it there?” Guide students to think of cars, dogs, cows, plant fertilizer/ food, etc.
- Ask “What do you predict, or guess, will happen to all of these pollutants when we add rain to this watershed?” Have a teacher chart each students’ name and prediction. Make sure to leave room to write the outcome of the experiment on the chart, or create a second chart of students’ responses of what they observed. Hang this chart in the classroom at eye level after the experiment is complete.
- Have a student(s) spray the water onto the watershed. Say, “Here comes the rain again on our watershed! What do you see happening now? -What is happening to all of the pollutants we added to the land?” Guide children to notice where the water accumulates, and point out that there are now “rivers” and “lakes” on their watershed. If needed, note that water always moves from high areas to lower areas.
- Here are some discussion questions to help guide the conversation with children:
 - ✓ Were your predictions or guesses right?
 - ✓ Where did the water go?
 - ✓ Why do you think it went there?
 - ✓ What happened to the pollution?
 - ✓ Where did the pollution move to?
 - ✓ What do you think happens when the pollution moves to other areas in the watershed?
 - ✓ How do you think the salmon people feel if they had all of these pollutants in their home?
 - ✓ What other beings or animals might be affected by all of this pollution in the water?
 - ✓ How would you feel if you lived downstream from the pollution? (point to)
 - ✓ How would you feel if you lived upstream from the pollution? (point to)
 - ✓ What can we do to stop pollution from getting in our watershed?
- Say to children, “We all live downstream from another place (unless you’re on top of a mountain, of course) and we all live in a watershed. Watersheds are connected to one another.

Things we do to the land and water in one area affect the land and water many miles away, so it is important to keep our salmon eyes on and always take care of our watershed. “

Nature Extension

Make a rain garden or miniature rain garden.

When you plant a rain garden you are helping to reduce pollution and preserve our water systems. In urban areas when it rains, the rainwater runs off our yards, roofs, sidewalks and driveways and flows directly to the street and down the storm drain. Many storm drains take the untreated water directly to our rivers and lakes and oceans. It will carry oil, pesticides, fertilizer, pet wastes, sediment salt, and oil into our freshwater. When large amounts of water pours into an aquatic ecosystem the balance and nutrients are disturbed.

A rain garden it will catch the runoff. The water is soaked deep into the ground. The native plants with deep roots help soak up the water and break up hard soil and will infiltrate water and nutrients deep into the soil. The plants, soil and mulch break up the pollutants and make them inert, not harmful.

When you create a rain garden it will be a beautiful space and become a wonderful habitat for birds and beneficial insects. It will also reduce pests and harmful insects. A rain garden can be as small as a container next to a downspout or a large part of yard. Whatever the size, the fundamentals of constructing a rain garden remain the same.

- It needs to be constructed so it will drain within four hours of a 1” rainfall. This will protect the plants while absorbing the water.
- Native plants work best because they are well-adapted to local conditions. Check this website to find native plants for your region:
http://www.wnps.org/plant_lists/exploring_native_plants.html
- Soil must be lightweight and porous. It most likely will need to be amended prior to planting. Also it is beneficial to add leaf compost, sand, vermiculite, and loamy soil additions.
- It is important to select an area where water naturally collects or drains from a gutter or downspout.

Movement Extension

What would it feel like to become a watershed?

Have children sit at a table and explain that we will pretend our bodies are hills and mountains in a rainstorm. You might want to find some thunder or rain storm music on YouTube to play during this activity. Hand out two pieces of paper towels to children to place underneath their elbows and instruct them to interlock their hands and place their elbows on the table (on top of the paper towels) to create a peak or triangle. Next ask students to close their eyes and take three deep breaths. You might say, "I want you all to think of a mountain or a large hill. Think about what it looks like. Does it have trees? Animals? Rocks? Plants? Think about how it smells. What if you are a part of the mountain? (Cue rainstorm music) Now you see storm clouds coming and they're very dark and huge." At this point, begin to spray children's mountain tops (top of their hands). They will be surprised if they kept their eyes

closed up until now and probably become talkative, which is ok! Continue to spray the top of each student's hands until water reaches the paper towels on the table and collects. Once complete, have students share how it felt being a mountain and to have rain fall on them. Chart their answers and display in the classroom.

Mural Extension

Cut long strips of brown construction paper to represent cedar strips. Tell the students that we will be weaving cedar to add to our mural. Have each child think of something they can do to help protect our watershed. Write each intention on a piece of "cedar". Have children weave the pieces together. Include pieces that their families write intentions on also. Add these woven cedar strips to your mural.

Washington State Early Learning and Development Guidelines Alignment

(Washington State Early Learning and Development Guidelines Birth through 3rd Grade 2012)

Ages 4 to 5 years

1. About me and my family and culture

Learning to learn

- Be curious; interested in trying things out.
- Stay with a task for more than five minutes and attempt to solve problems that arise.
- Use imagination to create a variety of ideas.

2. Building relationships

Social behaviors

- Be able to think about behavior, being cooperative and nonhurtful. Able to talk about the best ways to do things.
- Cooperate with other children, share and take turns.

Problem solving, conflict resolution

- Make decisions and solve problems with other children, with adult help.
- Observe that others may have ideas or feelings that differ from the child's own.

3. Touching, seeing, hearing and moving around

Using the large muscles (gross motor skills)

- Move with purpose from one place to another using the whole body. This might include walking, running, marching, jumping, hopping or climbing. For child in a wheelchair, skills might include steering the chair into different spaces.

Using the small muscles (fine motor skills)

- Show increasing skill with small materials. Screw and unscrew jar lids, and turn door handles. Use zippers, buttons and snaps. String large beads; fold paper; open and close containers.

Using the senses (sensorimotor skills)

- Delight in playing with materials of different texture (such as sand, water, fabric) and conditions (wet, dry, warm, cold).

4. Growing up healthy

Daily living skills (personal health and hygiene)

- Participate easily and know what to do in routine activities (such as meal time, bed time) with brushing teeth.

Nutrition and health

- Know what self-care items are used for (such as comb and toothbrush).

Safety

- Follow safety rules indoors and outdoors.

5. Communicating (literacy)

Speaking and listening (language development)

- Know when it is appropriate to ask questions and whom to ask. Ask questions to get information or clarification.
- Listen to others and respond in a group discussion for a short period. Remember what was said and gain information through listening.

6. Learning about my world

Knowledge (cognition)

- Ask adults questions to get information (as appropriate in the family’s culture).
- Apply new information or words to an activity or interaction.
- Seek to understand cause and effect (“If I do this, why does that happen?”).

Math

- Compare size (such as, “I’m as tall as the yellow bookshelf.”)
Describe objects using size words (big, small, tall, short).
- Compare two objects using comparison words such as smaller, faster and heavier.

Science

- Ask questions and identify ways to find answers. Try out these activities and think about what to do next to learn more.
- Predict what will happen in science and nature experiences. Consider whether these predictions were right, and explain why or why not.
- Investigate the properties of things in nature. Begin to understand what various life forms need in order to grow and live.
- Take responsibility in taking care of living things, such as feeding the fish, watering plants, etc.
- Participate (with adult direction) in activities to preserve the environment, such as disposing of litter properly, saving paper and cans to be recycled, etc.

Social Studies

- Talk about the past and the future, such as what the child did this morning and what his or her family will do this weekend.

K-12 Since Time Immemorial Alignment

Elementary Washington State History

 Being Citizens in Washington-Boldt Decision

Elementary U.S. History

 Legacy for Us Today-Elwha

Middle School Washington State History

 Contemporary Washington State – Boldt I and II

High School U.S. History

 Our Foundations-Foundational Documents & the Boldt Decision

High School Contemporary World Problems

 Environmental Issues-The Boldt Decision