

What is A Watershed? Outline

Grades: 2-6

Time: 45-60 minutes

State Standard Connections: OR: Physical Science: Matter; Life Science: Organisms, Diversity/Interdependence; Earth and Space Science: The Dynamic Earth; Scientific Inquiry
WA: Science EALR Components: 1.2, 1.3, 2.1, 3.2

Materials: Watershed model, watershed poster activity, map of school-specific watershed map, LCR map

Objectives: Students will understand the term ‘watershed’ and how watershed boundaries are defined. Students will know the name of their local watershed and understand how their activities impact the Lower Columbia River.

Vocabulary: watershed, non-point pollution, point pollution, impervious, pervious

Pre-class Activities: During a few days or for the week preceding our visit please have your students observe or discuss where water goes when it rains (Does it stay in one spot? Does it run like a river down a street?). Have them make observations from as many places as possible -- on the school grounds, at home, at the grocery store, etc. Also, have them observe if rainwater carries anything with it, and if it does, what?

Discussion (5-10 minutes): Introduce the concept of a watershed. Discuss how students are in their local watershed and show slides of the area. Talk about where water goes when it rains. Discuss the journey of rainfall from their school. Introduce pervious and impervious surfaces. Talk about how streams and rivers are connected.

Activity 1 - Watershed Model (20 minutes): Have students gather around the watershed model. Depending on class size it may work best to put the model on the floor or a low table. Let students take turns guessing which one spot on the model is in a different watershed than the rest of the model (they should point at the exact spot). Spray water where students guess to see if they are correct. Show that where the water flows determines if two areas share the same watershed. Begin adding items to the model (cars, roads, farms, etc) and discuss how these items might impact the streams and rivers in the watershed. Dust pollution (Kool-Aid, chocolate, etc.) in the appropriate areas and spray water over the model while students make observations. Show students the pipe from the factory as an example of point-source solution. Explain that this type of discharge into streams is usually regulated. Define and discuss non-point source pollution and the challenges of reducing non-point source pollution. Using examples in the model, ask students what they can do to reduce non-point source pollution.

Activity 2 - Watershed Poster (15-20 minutes): Each student will get one piece of paper representing a portion of a watershed. Collectively, all the pieces make an entire watershed. Each piece is labeled with a particular land-use. Depending on grade level, students may not understand a few types of land-use. In this case, explain, or provide a different land-use. Students will draw appropriate pictures for their type of land-use. After students have had time to draw, piece the papers together five per row from left to right and top to bottom (1 is at the top left, 30 is at the bottom right). Make sure to use all the numbers; either have a few students make two drawings or leave some blank for the class to draw later. Discuss or prompt students to write about how activities in one part of the watershed affect other parts of the watershed.

Wrap-up (5 minutes): To conclude, a few students can share something that they (and their family and or classmates) can do to reduce impact in their watershed.

Extension Ideas: If you have space in your classroom or hallway, it would be great to display the watershed poster the students create and refer back to it occasionally. Students could track some of their behaviors to try to reduce their impact in the watershed. Some ideas for behaviors include: riding bikes instead of asking for rides; cleaning up pet waste, helping weed the garden instead of spraying herbicides; washing the car on grass or gravel with non-toxic soaps, etc.