

Watershed World

Summary

Students create a model of a watershed that illustrates real world examples of activities that effect water quality. Students investigate ways of minimizing impact by suggesting changes in behavior or activities.

Materials

- Large sheet of heavy craft paper (~36-48 inches in length)
- Tape
- Spray bottles
- Cards with roles of community members
- Pens/Markers - various colors (*Blue and green markers should be permanent, all other colors should be wet-erase or water soluble*)

Procedures

1. Select a large sheet of heavy craft paper and crumple it into a semi-loose ball.
2. Gently shape the paper into a 3-D “landscape” that uses the paper folds to simulate hills, mountains, valleys and plains.
3. Using tape, fasten the corners and edges of the landscape to the table.
4. Select a permanent blue pen/marker. Starting in a mountain or hilly region, trace several stream networks that include **headwater streams** that join to form **midreach** streams. Connect some of these to form **large rivers**.
5. Still using the blue marker. Trace the outline of one or two **major watersheds** or **river basins** that are part of the landscape you created.
6. Using pens/markers of various colors, illustrate all the following types of human activity or **land uses** on your landscape. Use the permanent green markers for forests and park land. Use the *permanent blue ONLY to depict water (streams, rivers, lakes, ocean, pond).*

urban centers
suburban regions
rural communities
roadways connection regions
industrial activity (factories)
commercial properties (stores, gas stations)
others??

wastewater treatment system(s)
agricultural activity (crops & livestock)
mineral extraction (quarries, mines)
forestry activity (cutting and growing)
recreation activity (backcountry & parklands, golf courses)
drinking water supply system(s)

7. Select a “watershed Citizen Role” card from the envelope. With your work/lab group complete the following:

- a. Tell the group the role you selected and where on the landscape they might be located.
 - b. List the various ways this role might impact water quality (point and nonpoint sources).
 - c. Identify ways this role could behave differently to minimize the impact on water quality.
8. After the discussion, spray water on the watershed model to simulate rain. Observe what happens with the different land-uses. Which are the colors that “run” and which colors do not? What do each of those colors represent as a land-use? Discuss ways that pollution can be mitigated or “cleaned-up” with wetlands and trees. *(Use a sponge with younger audiences as a visual to show them how a sponge can clean up the current mess but also how wetlands are similar to sponges.)*