
“Water” You Doing with Hydrology? (A Water Inventory)

Activity Overview: Students assess the potential risks to water from storm water runoff coming off their school or home properties. Additionally, students evaluate water usage at home or school.

Source: Adapted from Home*A*Syst storm water management assessments in *Home*A*Syst*. Developed by National Farm*A*Syst/Home*A*Syst program in Cooperation with the Northeast Regional Agricultural Engineering Services (NRAES). Ithaca, NY.

Objectives: Students will:

- ➔ Understand how activities at home and school affect surface and ground water in their local watershed
- ➔ Examine and evaluate possible impacts on the local environment
- ➔ Make decisions on what impacts may be of greatest concern in their community
- ➔ Develop knowledge and skills to identify best possible solutions to the impacts

Subjects Covered: science, environmental science, health, social studies

Grades: 4 through 12

Activity Time: In class: 10 minutes introduction, 30 minutes analysis and discussion of options. Homework: 30 minutes

Season: Any, Fall and Spring are best

Materials: Student inventory sheets, inventory summary page

State Standards: Science: A.4.1., A.4.2., A.4.3., A.4.4., A.4.5., A.8.1.,A.8.3., A.8.6., A.8.7., A.12.1., C.4.1., C.4.2, C.4.4., C.4.5., C.4.6., C.4.7., C.4.8., C.8.3., C.8.4., C.8.6., C.12.3., C.12.4., E.4.8, E.8.1., F.8.8., F.12.8. Social Studies: A..4.1., A.4.4., A..4.6., A.4.8., A.8.5., A.8.6., A.8.8., A.8.11.,A.12.4, A.12.6., A.12.12., E.4.1. E.8.1., E.8.4., E.12.4.

Note: See Governor’s Council on Model Academic Standards. (1998). *Wisconsin’s Model Academic Standards*. Madison, WI: Wisconsin Department of Public Instruction for detailed descriptions.

Activity Description: One way to learn about the health of local watersheds is to take an inventory of the existing practices community members do that have an impact on water quality and groundwater supply. In this activity, students will assess potential storm water pollution sources and current water conservation habits in the community. Examples of factors they will evaluate include automobile and yard care practices, downspout connections, amount of impervious surface, and water usage. They will implement the inventory where they live. The results from their small sample will give them a general picture of potential watershed concerns in the community. They can use

this information to develop outreach materials that will educate their community about the health of their watershed and how citizens can actively help make improvements.

Activity Directions:

1. Hand out inventory sheets, and review the process for filling out the forms.
2. Review information collected when students return with completed inventory sheets. Fill out the class summary sheet to calculate the class' findings. Mark each student's score for the individual problem (i.e., if Johnny circled a three for "Automobile Wastes," then make three tic/tally marks in the column next to the listed problem and continue for each student). At the end add up each mark, and write the sum in the last column of each row. This will inform students which problems were the most common or troublesome for the class sample. Then add this last column's numbers and write the sum in the row below the last problem. This final score is the class' overall score. Suggestion: If students multiply twelve by the number of students there are, this will give them the best possible score that could be achieved. Then multiply thirty-six by the number of students to give the worst possible score. Have the students see where their class' score is relative to this range of numbers in order to give them a perspective on how well the sites rate as a whole.
3. Next, have students answer the summary questions, and have a brief discussion based on the question sheet. Also discuss the students' experiences doing this activity; what they learned, what was difficult, if they see any flaws in the inventory, or possible solutions to the class' highest scoring problems.
4. Use the data collected as a source for outreach material development in the Earth Partnership for Schools activity: *Outreach Materials: Creating Solutions to Storm Water Pollution*. The creation of outreach materials offers students a service-learning opportunity to address the class' areas of watershed concerns to the larger community.

Assessment:

- ➔ Explain how activities at home affect surface and ground water in their local watershed.
- ➔ What storm water impacts are the greatest concern in the community and why?
- ➔ Identify three activities community residents can implement to improve water quality and/or groundwater supplies.

Resources:

Andrews, Elaine. 1996. *Give Water A Hand Leader Guidebook*. UWEX Environmental Resources Center. Madison, WI.

Eagan, David (Ed.). 1997. *Home*A*Syst*. National Farm*A*Syst/Home*A*Syst program in Cooperation with the Northeast Regional Agricultural Engineering Services (NRAES). Ithaca, NY.