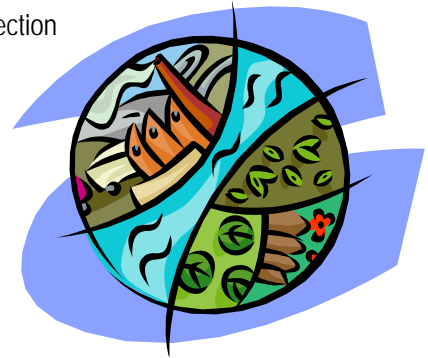


Groundwater Flow Model

Loan Application Instructions

Groundwater is an important source of drinking water in West Virginia. Groundwater is a valuable resource vulnerable to contamination from local land use activities. Because these contaminants can cause detrimental health effects, it is important for the public to be aware of how to protect their groundwater supply. West Virginia teachers are in a unique position to empower their students (and potentially students' parents) with knowledge of groundwater protection.

In an effort to support these teachers, the Source Water Assessment and Protection (SWAP) Program, a section of the WV Department of Health and Human Resources, Bureau for Public Health (BPH), is developing a program to loan groundwater flow models to teachers statewide. By teaming with the WV Department of Environmental Protection, Project WET program, the BPH has identified a number of teachers who are already aware of the importance of groundwater protection. The BPH is extending to these teachers the opportunity to borrow a groundwater flow model.



What is a Groundwater Flow Model?

A groundwater flow model has been likened to an ant farm in appearance. But instead of watching ants, students will be able to "see" water underground. The BPH considers these models valuable teaching tool, because they can illustrate:

- The potential to contaminate drinking water from relatively common activities, through point and non-point sources.
- The effects of a pump on groundwater. Pumps are used in many public water systems to bring groundwater to the surface for use.
- How quickly contaminants can enter a groundwater source via karst geology, common in eastern portions of West Virginia.

How do teachers qualify to receive a Groundwater Flow Model?

There are currently a limited number of groundwater flow models available, so teachers are asked to complete an application describing how they would use the model in their classroom. This application process is intended to identify those teachers who can and will effectively use the groundwater flow model.

While this announcement has been sent primarily to those teachers who have already attended the Project WET program, any teacher interested in presenting the importance of groundwater protection to their students is encouraged to complete an application. In fact, creative teachers from disciplines outside of science may find that the social implication of groundwater protection can pertain to their subject areas.

What benefits are there to schools who participate in the program?

- Schools will receive a sand-tank groundwater flow model to use for 3 years. After 3 years, the model can be renewed for another 2 years with a written request. These models and accessories are valued at \$625.
- Teachers will receive materials and training on groundwater concepts and use of the groundwater model.

- Teachers will share ideas with others and return to the classroom ready to teach groundwater topics.

What commitments must teachers make who participate in the program?

The BPH is loaning the groundwater flow models to interested teachers. If the awarded teacher finds that they cannot complete the following activities, the model should be returned to The BPH. This will insure that the models are used most effectively.

- The teacher must first fill out the groundwater flow model loan application.
- On the application, indicate other teachers with whom you are willing to share the model. In an effort to reach the maximum number of students the loan program may place a limit of one model per school. Thus, sharing a model is encouraged. In this case **each teacher should submit a separate application, specific to their classes and students**. This will improve the likelihood for your selection.
- Finally, complete and submit a written summary of the activities you implemented.

How will model recipients be selected?

The BPH staff will select recipients of the groundwater models by evaluating applications submitted. Criteria will include:

- classes, grade levels, and number of students who will benefit;
- availability of models locally;
- intent to infuse groundwater information into existing curriculum, and to include an activity that will involve parents as well; and
- commitment to attend a training workshop (If multiple teacher from one school team together, each should attend the training session).

The teachers chosen to receive the models will be notified. In addition, some teachers may be invited to attend the workshop in order to be placed on a waiting list for addition models as they become available.

Who is the contact for this program?

If you have any questions about the loan program, please don't hesitate to contact:

Rick Shaver,

Environmental Resource Specialist

Source Water Assessment and Protection Program

Environmental Engineering Division

Office of Environmental Health Services

Capitol and Washington Streets

1 Davis Square

Charleston, WV 25301

Telephone: 304-558-6744

richard.k.shaver@wv.gov