

KIDS PAGE

Learn About Ground Water – The Fun Way!

Ground water, the water we pump from the earth through wells or which flows naturally from springs, is one of Nebraska's most valuable resources. It is not new water, but "recycled" water that is related to all the other water on earth by a process called the hydrologic cycle.

The source of ground water is precipitation. When rain, snow, sleet, fog, or any moisture falls on the surface of the ground, some of it travels on the land into lakes and streams (runoff), and some soaks into the ground (infiltration) and reaches the saturated zone or aquifer, a holding place for ground water. The top of the saturated zone is the water table.

Ground water moves slowly down gradient between grains of soil or in cracks in rocks until it reaches a point where it can discharge at the surface, such as a lake, stream, or wetland, or until it is withdrawn from a well. It then becomes surface water again. It then evaporates to become precipitation, and thus, the cycle begins again. The ground water we

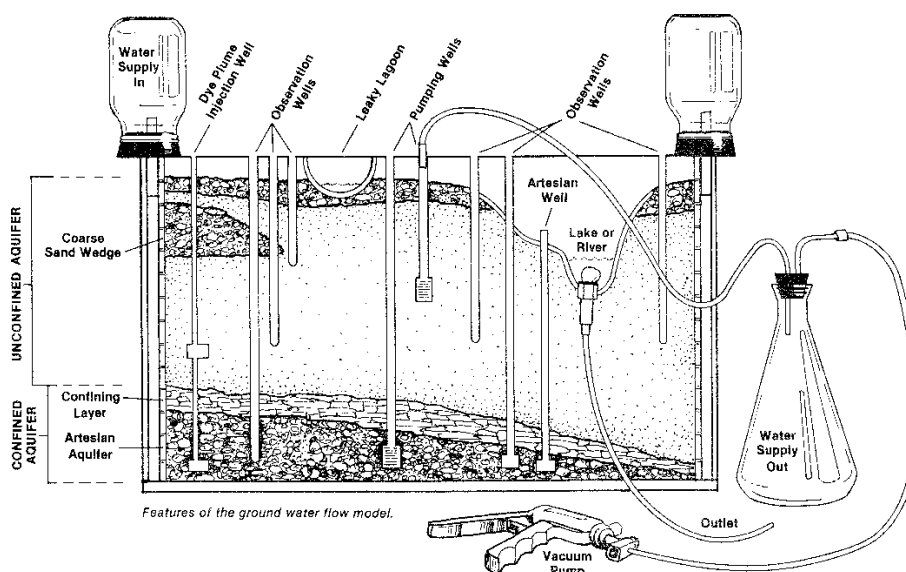
use today may have traveled through the hydrologic cycle hundreds or thousands of times since the earth was formed.

The ground water flow model is used to demonstrate ground water movement principles. It demonstrates two types of aquifers: an unconfined aquifer of sand located just below the surface and a confined aquifer of gravel located near the bottom. The aquifers are separated by a clay/sand layer.

Water is introduced into the model through jars located at each end. A vacuum pump is used to draw water from the wells and dyes serve as visual tracers to show how contaminated water migrates.

A surprising number of concepts can be demonstrated with the model. Twenty-eight, in fact. Here are just a few:

- Ground water is part of the hydrologic cycle.
- Ground water is contained in pore spaces and cracks.
- Ground water can be withdrawn from wells.
- Ground water is recharged by precipitation.
- Human activities can contaminate



- ground water,
 - Contaminated surface water can pollute ground water.
 - Contaminated ground water can pollute surface water.
 - Pollutants travel with the ground water.
- Through the 4-H School Enrichment program Water Riches, fifth-grade

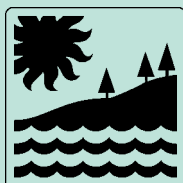
students in Lancaster County are learning about ground water by using this model. Resource personnel at University of Nebraska Cooperative Extension in Lancaster County can present basic ground water information to you too. Just ask and learn the fun way! (ALH)

Educating Future Stewards of the Earth

earth wellness festival (ewf) is an innovative and exciting environment education event for youth. The festival is celebrating its ninth year on Friday, March 21, 2003 at Southeast Community College-Lincoln. How did the festival come about? In the spring of 1994, over 325 Lincoln Public Schools teachers signed a petition identifying the need for a local water festival.

A 15-member steering committee, representing 11 local educational resource agencies, organized the **ewf**. The major focus of the festival is to educate future stewards of the earth. The committee has identified the following objectives. Youth will:

- recognize the relationships and



interdependency of land, water, air and living resources.

- identify the human impact on our planet.
 - determine steps of action to enrich our environment.
- Each year, approximately 3,000 fifth-graders attend earth wellness festival and in eight years, over 24,000 youth have participated. In October, pre-festival learning kits are delivered to each school attending the event. Each kit contains 20+ hands-on activities, all the materials, supplies and equipment to



Fifth graders learn about runoff at the earth wellness festival.

complete these lessons, plus a computer game and more. Kits provide year-round learning opportunities for the teachers and students attending **ewf**.

earth wellness festival is truly a committee effort.

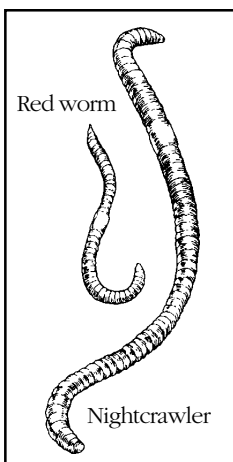
- To date, nearly \$806,464 cash and in-kind services support the festival.
- More than \$78,000 in grants have been awarded to the festival.
- Community volunteers have donated over 11,200 hours of service at the event. This support is valued at more than \$126,000.

Presenters and their respective agencies donated nearly \$233,328 in staff support, office supplies and services, site facilities and educational programs.

An award winning event, **ewf** has received the 1995 Ventures in Partnerships Pioneer Award for outstanding and innovative programs for Lincoln Public Schools students, the City of Lincoln's 1995 Environmental Award, the 1997 University of Nebraska Cooperative Extension Team Programming Award and the 1999 Institute of Agriculture and Natural Resources Team Effort Award. If you wish to volunteer or be a part of this important education program, call Arlene or Dave at 441-7180. (ALH)

Worms Eat your Garbage!

When "red wiggler" worms eat your garbage, it's called vermicomposting and this process takes place in a bin. These bins can be wood boxes or any containers with lids that provide worms with a dark and moist environment in which to live and eat vegetative food wastes. Worms are bedded within these boxes in shredded and moistened newsprint, corrugated cardboard or other high-cellulose materials. Selected kitchen garbage is buried in this bedding and burial spots are rotated in an orga-



nized progression. Worms turn the food wastes and bedding into a high quality soil amendment suitable for use on houseplants, vegetable seedlings, and flowers.

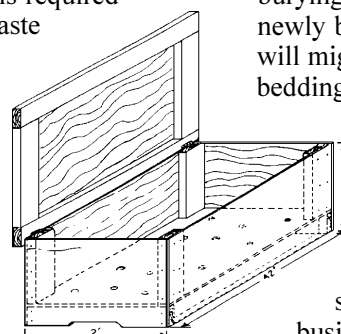
With some understanding of what red wiggler worms' need, vermicomposting systems are simple to maintain. Two or three times each year, a few hours are spent preparing bedding, and harvesting compost, and worms.

Vermicomposting is an interesting way to compost non-fatty kitchen wastes. In addition, it composts the newsprint, cardboard or other wastes used as bedding. Worm bins are most

efficient if sized and stocked according to the amount of waste to be handled. Surface area is more important than depth in sizing a worm system; generally, one square foot of surface is required for every pound of food waste to be composted per week.

To start a vermicompost system, red wiggler worms (not earthworms) must be purchased or taken from another worm bin to stock the new bin. When most of the contents of the bin have become dark "worm castings," the contents may be harvested and used. The finished compost will be greatly reduced from the original volume, and should only fill one

half or less of the bin. The compost may be harvested by moving it all to one side and adding fresh bedding to the empty side. Once you begin burying food waste in the newly bedded side, the worms will migrate to the fresh bedding, restocking the bin and allowing the finished compost to be removed.



For more information about vermicomposting, send a self-addressed, business sized, stamped envelope to: Worms – NEBFACT 107, Lancaster County Extension Office, 444 Cherrycreek Road, Suite A, Lincoln, NE 68528. (ALH)