



We work with the people who work the land.



Headwaters Soil & Water Conservation District

2018 Science SOL-Based Environmental Education Programs for Sixth Grade

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Or use Google Form to request a lesson: <https://forms.gle/4bA3NF4jeXpM6aCd8>

- **Augmented Reality Sandbox (6.8, 6.9)** The Augmented Reality Sandbox provides an hands-on visual approach to understanding the areas of the land that encompass a watershed. Students will be able to shape the sand inside the sandbox and make it rain to identify key land features and watershed boundaries Students will be able to use the Augmented Reality Sandbox to learn to read and interpret topographic maps. The sandbox also allows students to gain an understanding of how conservation professionals rely on maps to help conserve our natural resources.
- **Blue Planet (6.6)** Students estimate the percentage of Earth’s surface is covered by water and, by tossing an inflatable globe, take a simple probability to check their estimates. Students estimate how long water remains in locations such as rivers, lakes, ground water and the ocean. *An excellent warm-up activity to Is There Water on Zork? Lesson*
- **Conservation Poster Contest (K-12 6.9)** Poster contest held every spring and following the rotating natural resources theme set by the National Association of Conservation Districts (NACD). Open to all K-12 students. An introductory presentation and lesson on the theme is available if requested. Contact the SWCD office for more information and entry forms.
- **Enviroscape Watershed Model (6.8)** The Enviroscape Watershed is an interactive table-top model used to demonstrate watersheds and the human impact on water quality. Students participate in contaminating the watershed through non-toxic ‘pollutants’ and create a rainstorm to illustrate the movement of water and pollutants through the watershed. Students will also learn their watershed address.
- **Erosion Model Demonstration (6.6, 6.9)** A demonstration showing the effects different types ground cover has on controlling soil erosion. Students will learn about what soil erosion is, how it occurs, and the various conservation practices available to reduce erosion from agriculture and urban areas. Students will be able to understand the importance of soil conservation for both soil and water quality.
- **Is There Water on Zork? (6.6) Help!** A friendly alien from Zork has landed on Earth and he brought with him some clear liquids from his home planet. Can you help scientists determine if there is water on this new planet? Students will design their own experimental investigations to test the characteristics of water. Using the results of their investigations, students will be able to distinguish water from other clear liquids. Afterwards, students will be able to analyze the efficiency and effectiveness of the investigation.

Continued on Page 2



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- **Macroinvertebrate Mayhem (6.8)** Students play a game of tag to simulate the effects of environmental stressors on macroinvertebrate populations. Students will be able to explain how population diversity provides insight into the health of an ecosystem. Students will discover how biological monitoring of macroinvertebrates can be used to determine water quality.
- **Poison Pump (6.6, 6.9)** Through a series of clues, students solve a mystery to discover that water can also produce negative health effects for people. Students will apply investigative methods used by epidemiologists to trace the source of the deadly cholera disease and how the disease spreads through a small town in 19th century London.
- **Sum of the Parts (6.8, 6.9)** A interactive demonstration to help students learn that ‘We all live downstream’. By creating their own river-front property, students demonstrate how everyone contributes to the pollution of a river as it flows through a watershed and recognize that through individual and group action, the amount of pollution can be reduced.
- **Virtual Water (6.9)** Students create a ‘water web’ to illustrate their dependence on water and the interdependence among water uses, producers, and people worldwide. This demonstrate is used to help students understand the importance of water conservation the complexity of water shortages.
- **Water Quality Monitoring (Science 6.8, 6.9)** This is introduction to water quality parameters include physical, chemical and biological monitoring of a body of water. Students will have the opportunity to perform tests for: Temperature, pH, alkalinity, nitrogen, phosphorous, turbidity and dissolved oxygen tests. Students will also get the opportunity to collect, identify and count macroinvertebrates as a biological assessment of a body of water. *This lesson works best when conducted as a field investigation at a local water body. See below for a list of nearby locations we recommend for field trips. This lesson can be adjusted for a classroom setting if needed.*
- **We All Need Trees (6.9)** Students are often surprised to learn how many different products we gets from trees. Students identify and categorize products we depend on that come from trees. Students will also discover the ways trees are used to make products and the way these products can be conserved.

On-Site Field Trip Locations (SOL’s that can be covered: 6.8, 6.9) Topics: Watersheds, Wetlands, Water Quality, Pollution, Conservation Practices, VA Natural Resources.

Below are a list of nearby locations best suited for field trips on environmental education. Headwaters SWCD staff are willing to provide on-site support, presentations, and activities at the following locations. These sites are also excellent field trip destinations for MWEE (Meaningful Watershed Educational Experience) outdoor field experiences. Staff are also willing to assist in coordinating with other natural resource agencies (Dept. of Forestry, USDA, Dept. of Environmental Quality etc.) to provide additional field trip presentations at these locations.

- **Marl Creek Trail at Cyrus McCormick Farm** Address: 128 Cyrus McCormick Cir, Raphine, VA 24472
- **Augusta Springs Wetlands Park** Address: 2735 Little Calf Pasture Hwy, Augusta Springs, VA 24411
- **Natural Chimneys Park** Address: 94 Natural Chimneys Ln, Mt Solon, VA 22843
- **Constitution Park and South River Greenway** Address: 101 Short St, Waynesboro, VA 22980
- **Grand Caverns Park** Address: 5 Grand Caverns Dr. Grottoes, VA 24441
- **Gypsy Hill Park** Address: 600 Churchville Ave, Staunton, VA 24401