



WATERSHED WONDERS

VIRTUAL FIELD TRIP

ADDITIONAL RESOURCES

PROGRAM DESCRIPTION

These additional resources are part of a Lewis Ginter Botanical Garden virtual field trip package, called Watershed Wonders. This program provides an overview of the water cycle, explains the role plants play in healthy watershed systems and discusses human impact on these systems. This program meets the following Virginia Public Schools Standard of Learning Science Objectives that were updated in 2018: 3.7, 3.8, 4.8, 6.8, 6.9, LS.5, LS.9

MAKE A MODEL

- **Create a Watershed Model:** Build your own watershed model to demonstrate how water flows over land. The [Virginia Department of Environmental Quality](#) offers ideas about how to get started. They also provide a map that helps you find your watershed address. [PBS Kids](#) also has good ideas about building a model.
- **Make a Wetland in a Bottle:** Wetlands are amazing ecosystems. Learn about how they naturally filter our watershed systems. [The James River Association](#) provides directions for creating your own wetland in a bottle.

RESEARCH AND PRESENT

- **Calculate Your Water Footprint:** Be inspired to conserve water by using the [Water Footprint Calculator](#) to calculate an estimate of how much water you use every day. The calculation includes the water that comes out of your tap and the water it takes to make your food. It also estimates how much water you need to support the energy you use, and the products you buy.
- **Find Your Watershed Address:** The [Virginia Department of Conservation and Recreation](#) provides a map of the major watersheds of Virginia. The [Environmental Protection Agency](#) provides an overview of how watersheds connect at a community, state and national scale.

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- **Explore the Water Cycle:** [NASA](#) has some great ideas on their precipitation education webpage.
- **Follow How Waste Water is Processed in Central Virginia:** [RVAH2O](#) explains how the City of Richmond works to help keep its watershed healthy.
- **Learn More About the Chesapeake Bay Watershed:** The [Alliance for the Chesapeake Bay](#) and the [Chesapeake Bay Foundation](#) have a wealth of resources for students and teachers including maps and videos. Learn about the thriving ecosystem around the James River on the [James River Park System](#) Science-in-the-Park webpage.
- **Research How Wetlands Filter Water:** [The National Park Service](#) and [National Geographic](#) are good places to begin your investigation. [Water Rocks!](#) has a great video about wetland restoration.

PROTECT OUR WATERWAYS

- **Implement a Reduce, Recycle, Reuse Project:** Prevent litter from ending up in our waterways. The [Environmental Protection Agency](#) has ideas about ways to get started. [Litterati](#) helps track types of litter by asking participants to take photos of litter and upload them to a database. The data collected is used to help find sustainable solutions for companies and organizations.
- **Start a Compost Bin:** This is a great way to create organic fertilizer, minimizing runoff of other fertilizers into watersheds. [Do the Rot Thing](#) offers composting activities for younger students. [Composting in the Classroom](#) offers ideas about teaching the benefits of composting to older students.
- **Install a Rain Barrel:** They capture runoff from storms that might otherwise cause erosion. Learn about the benefits of rain barrels from [Virginia Tech](#).
- **Plant a Rain Garden:** This is a great way to collect rainwater from a roof, driveway, or street. Rain gardens encourage water to soak into the ground instead of running into a storm drain and carrying pollutants with it. A rain garden is usually full of grasses and wild perennials. The [Alliance for the Chesapeake Bay](#) and [Virginia's Soil and Water Conservation Districts](#) provide more information about rain gardens.
- **Plant a Variety of Plants and Trees:** Healthy biodiversity in garden ecosystems can help reduce the need for artificial pesticides that can end up in our waterways. Also, plant roots help prevent erosion of sediment. The [Virginia Department of Forestry](#) explains how trees remove or filter pollutants. The [Virginia Native Plant Society](#)

explains how native plants support local wildlife including birds and butterflies. The [Missouri Botanical Garden](#) has suggestions about adding biodiversity as well.

- **Support Local Organic Farms:** [Grow RVA](#) offers information about how to connect with local farmers. [Shalom Farms](#) provides produce to communities in the Richmond area that lack access to healthy food. Their website has information about volunteering.

INVESTIGATE

- **Test Water Near You:** Test water in a pond, creek, or river near you with a water testing kit. [LaMotte](#) offers easy-to-use kits that provide a basic idea about water quality. Kits can also be ordered from [Earth Echo Water Challenge](#), an organization with a wealth of resources that help students learn about water conservation. The [Izaak Walton League of America](#) and the [The Chesapeake Monitoring Cooperative](#) provide resources that support collecting data in order to gain a comprehensive view of watershed health.
- **Observe Macroinvertebrates:** They can be found living in a pond, creek or river near you. We can learn a lot about the health of a body of water by studying these creatures. The [University of Utah Extension](#) offers some great ideas about how to get started.
- **Embark on a Meaningful Watershed Educational Experience (MWEE):** This is a project that requires students to think critically about watersheds. Students research, do hands-on activities and reflect. The [Chesapeake Bay Foundation](#) provides information about how to organize a MWEE

READ

- [Awesome Chesapeake: A Kid's Guide to the Bay](#) by David Owen Bell
- [A Drop Around The World](#) by Barbara Shaw McKinney
- [A Long Walk to Water](#) by Linda Sue Park
- [Every Last Drop: Bringing Clean Water Home](#) by Michelle Mulder
- [Not a Drop to Drink](#) by Michael Burgan
- [One Well: The Story of Water on Earth](#) by Rochelle Strauss
- [The Water Cycle at Work](#) by Rebecca Jean Olien
- [Water](#) by Melissa Stewart
- [Watersheds: A Practical Handbook for Healthy Water](#) by Clive Dobson and Gregor Gilpin Beck