

# Plant-A-Seed



## Introduction:

To further expand on the educational opportunities offered by *Growing Native*, coordinate a Plant-A-Seed event at your school. Plant-A-Seed is an educational project that integrates classroom and field activities with the goal of providing students with relevant field experiences related to the watershed in which they live. The programs emphasize that water is a resource and must be protected for our health and the health of our environment.

This Activity in the Education Guide provides instructions for organizing a Plant-A-Seed program, and ready-to-use documents and student worksheets. After participating in hands-on outdoor activities, students return to the classroom to incorporate the data and knowledge they gained during fieldwork into math and science curricula.

To learn more about Plant-A-Seed, visit [www.potomac.org/plantaseed/index.html](http://www.potomac.org/plantaseed/index.html) or email the *Growing Native* Project Director at [coordinator@growingnative.org](mailto:coordinator@growingnative.org).

For additional guidance, you may contact the following teachers at Thomas Harrison Middle School (which was integral in establishing the Plant-A-Seed program):

Daniel Kirwan, [dkirwan@harrisonburg.k12.va.us](mailto:dkirwan@harrisonburg.k12.va.us)

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Thomas Harrison Middle School Watershed Experience:

<http://staff.harrisonburg.k12.va.us/~dkirwan/VASTweb/Welcome.html>

## The Basics

Plant-A-Seed involves three educational stations through which students are rotated. Each station should be led by a natural resource professional or someone else who is very knowledgeable about the subject matter. Encourage students to ask questions about the professionals' careers as they work with them on the station activities.

## Planning Considerations

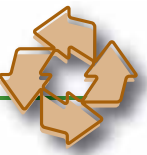
### Prior to the Event

- Identify an appropriate site well in advance of your event. Keep in mind that the site must have a stream with a riparian forest buffer and adequate space to accommodate all students. Ensure that the site is safe and that you obtain all necessary permissions (e.g., from park staff if in a local park) to host the event.
- Prepare and distribute a schedule to all parties involved. Host a meeting with all station leaders to ensure that everyone understands their roles and responsibilities.
- Secure and prepare all materials (refer to "Tips and Resources" for information on where to purchase supplies and the Leader Guide for material needs at each station) prior to the event.



### During the Event

- Have a safety plan. Be aware of potential hazards at the site and associated with the Plant-A-Seed activities. Ensure that you have a First-Aid kit, other supplies, and emergency numbers on-hand in case of injuries. Know the location of the closest hospital.
- Plan for students to spend 50 minutes to one hour at each station, and ten minutes rotating between stations.



## Station Descriptions

### Macroinvertebrate Station

The purpose of this station is to demonstrate how aquatic animals are integral to the riparian forest buffer ecosystem and are indicators of water quality. Students will explore what lives in the stream, using scientific methods to conduct a macroinvertebrate (e.g., insect larvae and worms) assessment. They will learn the tolerances of different aquatic animals to pollution. After completing this station, students will understand that the macroinvertebrate composition of a stream is one of the best indicators of water quality.

### Riparian Forest Buffer Station

The purpose of this station is to demonstrate the importance of plants and soils along the stream to water quality and aquatic animal life. Students will learn about the role of trees in protecting

water quality by investigating soil types, identifying trees, and distinguishing native from invasive species. After completing this station, students will better understand how riparian forest buffers hold stream banks in place, absorb harmful nutrients from runoff, and provide food and habitat for aquatic and terrestrial organisms.

### Water Quality Station

The purpose of this station is to determine the water quality and flow rate of the stream. Students will learn how to use water chemistry monitoring kits to measure the water's pH and amounts of nitrate, phosphate, dissolved oxygen, and turbidity. They will learn healthy levels of each of these substances, and what factors can cause them to become imbalanced. After completing this station, students will have a better understanding of the connections between land use practices, water chemistry, and macroinvertebrate survival.