

# 2024-2025 Education Programs for Grades PreK-12

## Blandy Experimental Farm

an Ecology Research Station of the  
University of Virginia



**Hands-on, *STEM* learning in our outdoor classroom**



*We welcome public, private, and home schools.*

For more information call (540) 837-1758 Ext. 290  
or e-mail [schprog@virginia.edu](mailto:schprog@virginia.edu)



# FIELD INVESTIGATION REGISTRATION

*Program Registration:* To request a program go to:  
<https://blandy.virginia.edu/content/sign-field-trip>

## A few important notes about registering:

- ◆ Please provide the most accurate, anticipated attendance numbers for each program as well as each teacher's name and email address to help us prepare for your visit(s).
- ◆ Once you have submitted a registration request, you will receive an email to confirm the program date and time requested or to suggest alternative dates. You must respond to this email within 48 business hours to confirm your registration.
- ◆ Call us at 540-837-1758 Ext. 290 with any questions about program structure, content, registration assistance, etc.



*Class size:* Minimum class size for a program is 10 students. For groups spanning several grade levels, limit your group to three consecutive grades, e.g. grades 3, 4, & 5. Please refer to page 12 for program structure details.

*Cancellation Fee:* Programs will be held rain or shine, except for **severe weather**. If weather conditions are questionable, we will contact you. Cancellation within 3 weeks of your scheduled date will result in a charge of the minimum program fee (equivalent to ten students) per class per program booked. (e.g., the cancellation fee for one class of *Let's Sprout* at \$4/student would be \$40. The cancellation fee for three classes of *Watershed Investigations* at \$6/student would be \$180).

*Chaperones:* **Our requested adult to student ratio** is 1:5 (preK-5th), 1:7 (6th– 8th) and 1:9 (9th-12th). All chaperones must be registered and approved per the visiting school's policy. There is no charge for adult chaperones up to 1 per 4 children. **Additional chaperones will be charged** as participants in the program. Exceptions to the maximum chaperone limit are adults assisting students with special needs and teacher assistants. Click here for our [Chaperone Guidelines \(PDF\)](#).

*Special Needs:* Please advise us of any accommodations we should be aware of (i.e. allergies, physical limitations, behavioral or developmental exceptionalities, etc.). This information will allow us to make every effort to accommodate your students' needs. NOTE: We are not able to provide on-site transportation for students with physical limitations.

contact you as  
weeks prior to

*Content Connection:* Maximize your students' experiences at Blandly! Call or email us to schedule a program preview. We provide resources that can be **used in your classroom to reinforce and introduce program content**. Access these resources at: <https://blandy.virginia.edu/ed-programs-resources> We also recommend excellent, program-specific **fiction and non-fiction texts** and inter-curricular activities.

*Be Prepared:* As our activities are outdoor based, activity location(s) may change to maintain a safe learning environment for students and teachers. Blandly Educators maintain adult and child first aid/CPR/AED certifications.

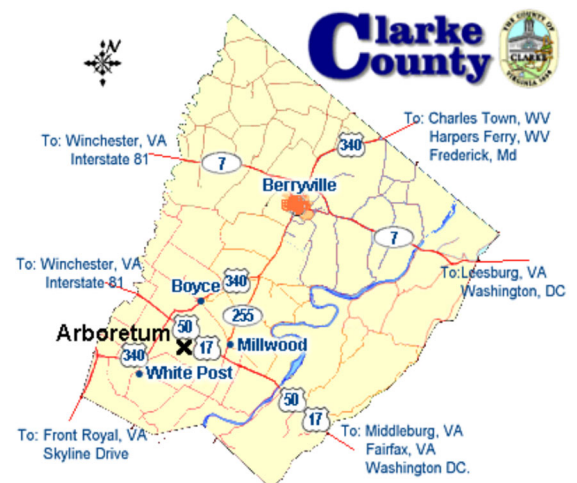
*Restrooms:* Located in our Quarters Building & Peetwood Pavilion. Allow 20 minutes for an entire class to visit the restroom.

*Picnic Grove:* Seats about 80 people. First-come, first-serve basis.

## Who is in charge?

Teachers and Chaperones are expected to manage students behavior at ALL times. Please abide by <https://blandy.virginia.edu/content/guidelines-and-policies>

[Click here for Directions](#)



# What's New?

## Science and Engineering Practices

"A goal of Virginia's 2018 Science Standards of Learning is to more fully integrate Science and Engineering Practices (SEPs) with science content throughout instruction and assessment."<sup>1</sup>

Our programs help hone and develop your students' science and engineering practices! The outdoor and indoor investigations incorporate the science and engineering practices highlighted in the 2018 curriculum framework.

The six SEPs categories are:

- Asking Questions & Defining Problems
- Planning & Carrying out Investigations
- Interpreting, Analyzing, & Evaluating Data
- Constructing & Critiquing Conclusions & Explanations
- Developing & Using Models
- Obtaining, Evaluating, & Communicating Information



The Curriculum Framework states, "Science utilizes observation and experimentation along with existing scientific knowledge, mathematics, and engineering technologies to answer questions about the natural world. Engineering employs existing scientific knowledge, mathematics, and technology to create, design, and develop new devices, objects, or technology to meet the needs of society. By utilizing both scientific and engineering practices in the science classroom, students develop a deeper understanding and competence with techniques at the heart of each discipline."<sup>2</sup>

### Program Clusters

<https://blandy.virginia.edu/programs-students-and-teachers>

Field investigations are more meaningful for students when they are integrated into their curriculum. We have developed integrated curricular modules which embed outdoor learning into school classroom instruction; these can be used to:

- ⇒ Introduce ecological concepts;
- ⇒ Increase depth of knowledge by synthesizing a variety of components using a systems approach;
- ⇒ Incorporate other disciplines/subjects
- ⇒ Engage students in the mathematical data cycle

Literacy Connections: Integration of science concepts across all content areas helps students access their learning experiences in new ways. To help provide your students with meaningful access points to scientific content that bridges the field and your classroom, we have curated a collection of recommended literacy resources and suggested activities. Visit each program's webpage for literacy resources.

Texts at multiple reading levels were selected so that all students may access the content. This collection will continue to grow as additional resources are identified.

<sup>1</sup> <https://www.doe.virginia.gov/home/showpublisheddocument/9746/638025986192330000> Accessed 07/01/2023

<sup>2</sup> <https://www.doe.virginia.gov/home/showpublisheddocument/30072/638046463677870000> Accessed 07/01/2023



# Early Elementary (preK-2nd)



## Early Explorers: (preK) Choose a theme

**Terrific Trees:** Young scientists get up close and personal with sensory examinations of tree shape and structure! Students use pattern recognition, emergent literacy, motor skills, and listening skills to discover the animals that live in and on trees.

**Meadow Discovery:** Your students connect with nature as they engage in hands-on activities using their senses, moving like animals, recording observations through art work, and verbal skills to investigate a meadow habitat and its plants and animals.

### VA Early Learning & Development Standards

APL1.1, APL3.1, APL3.3, SED3.1, CD3.5, CD3.4, CD1.2, CD1.1, HPD3.1, CLLD1.3, CLLD1.2

Fee: \$4 per student



## Mammals (K-2<sup>nd</sup>)

Students learn about Virginia mammals native to the Chesapeake Bay Watershed. We investigate mammal life needs and use critical thinking to analyze and compare mammal tracks, and apply geometry and counting skills. Students explore Blandy looking for evidence of mammals and submit findings to the community science program, Project Squirrel. This program also focuses on the senses mammals use to find food, seek prey, and define territories.



**Science SOL:** K.1, K.3, K.5, K.7; 1.1, 1.5, 1.7; 2.1, 2.4, 2.5, 2.7

**Math SOL:** K.NS.1, K.MG.1, K.MG.2, K.PS.1, 1.NS.1, 1.MG.1, 1.MG.2, 1.PS.1, 2.NS.1, 2.MG.3, 2.PS.1

**English SOL:** K.C.1, K.FFR.2, K.R.1, K.RV.1, 1.C.1, 1.R.1, 1.RV.1, 1.FFR.2, 2.C.1, 2.FFR.2, 2.RV.1

Fee: \$4 per student



## Let's Sprout (K-2<sup>nd</sup>)

The imagination of your budding young scientists will be captured as they explore the wonders of germination and plant growth. We investigate plant life cycles through models. Scientific observations are conducted and results are communicated. Outdoor exploration of the plant world reinforces student understanding of plant parts, functions, and roles in the watershed. Students select appropriate tools for planting seeds and provide care for their seeds.



**Science SOL:** K.1, K.5, K.6, K.7, K.9, K.10; 1.1, 1.4; 2.1, 2.4, 2.8

**Math SOL:** K.NS.1, K.PFA.1, K.PS.1, 1.PS.1, 1.NS.1, 1.PFA.1, 2.PFA.1, 2.NS.1, 2.PS.1,

**English SOL:** K.C.2, K.LU.1, K.FFW.1

Fee: \$4 per student

### What teachers say about our programs:

"Many thanks! Everything was so well organized, content was relevant to curriculum, and you made learning fun for the kids! Top notch all around."

#### Program Seasonality

Ideal   

Successful     
Fall Winter Spring



# Elementary (2nd – 4th)



## It's for the Birds (2<sup>nd</sup>-4<sup>th</sup>)

Birds have adaptations that allow them to survive in a multitude of environments in a watershed. Students consider strategies that help birds secure shelter and find food, and investigate how bird beaks are adapted for gathering and eating specific foods. Outdoors, fledgling ornithologists use binoculars to observe birds in their natural habitats, and collect data to interpret and share in community science projects as part of civic responsibility. This program is available year round!



**Science SOL:** 2.1, 2.5, 2.7; 3.1, 3.4, 3.5, 3.8; 4.1, 4.3, 4.8

**English SOL:** 2.C.1, 3.C.1, 4.C.1, 2.RV.1, 3.RV.1, 4.RV.1

**Social Science:** VS.1

Fee: \$4 per student



## Incredible Insects (2<sup>nd</sup>-3<sup>rd</sup>)

Explore the diversity of crawling, flying, and hopping insects with this program! Students discover insect survival mechanisms, such as mimicry and camouflage. They investigate insect life cycles and use magnification tools to examine insects up close and personal. Young entomologists develop an appreciation for the diversity of insects in our watershed habitats as they collect data and communicate their observations about insects and non-insects.



**Science SOL:** 2.1, 2.4, 2.5, 2.7, 2.8; 3.1, 3.4, 3.8

**Math SOL:** 2.PFA.1, 3.PFA.1

**English:** 2.C.1, 3.C.1

Fee: \$4 per student



## Vivid Virginia (3<sup>rd</sup>-4<sup>th</sup>)

Students evaluate Virginia's food webs and energy flow in watershed systems as they investigate the relationships among producers, consumers, and decomposers in the Arboretum's Native Plant Trail habitat. Students apply critical thinking skills collecting and analyzing data on native and non-native organisms. Through observations and sketches, your ecosystem scientists collaborate to investigate organism interactions and interdependencies within their ecosystem.

**Science SOL:** 3.1, 3.4, 3.5, 3.8; 4.1, 4.2, 4.3, 4.8

**Math SOL:** 3.PS.1, 3.PFA.1, 4.PS.1, 4.PFA.1

**English SOL:** 3.C.1, 3.RV.1, 3.LU.1, 3.RI.3, 4.C.1, 4.RV.1,

Fee: \$4 per student



Program Seasonality

Ideal   

Successful   

Fall Winter Spring

### What teachers say about our programs:

"This was a wonderful experience for the students - they loved it! It was a great supplement to our watershed curriculum. It was very organized and the staff was enthusiastic and engaging."

# Upper Elementary (3rd-5th)



## Scoop On Soils (3<sup>rd</sup>)

With this investigative program, students realize that soil is more than just dirt! Science practices of data collection, measurement, and observation are reinforced. In collaborative groups, your soil scientists conduct an experiment to test soil porosity and explore soil particle size during a kinesthetic game. In the field, we examine and identify different soil layers and look for evidence of organisms living in the soil. They also observe evidence of erosion, and discuss potential implications in the watershed.

Program Seasonality

Ideal   

Successful   

Fall Winter Spring

**Science SOL:** 3.1, 3.6, 3.8

**Math SOL:** 3.CE.1, 3.MG.1, 3.MG.3, 3.PS.1

**English SOL:** 3.C.1, 3.RV.1, 3.RI.1, 3.RI.3



Fee: \$4 per student



## Snake Savvy (3<sup>rd</sup>-4<sup>th</sup>)

As long as you know about snakes, there is no reason to be wary of them! Developing herpetologists use non-fiction resources to investigate snakes. Students compare characteristics that differentiate Virginia's venomous and non-venomous snakes. They measure and compare the lengths and patterns of snakes, then communicate information they have learned. Students also study how snakes use behavioral adaptations such as mimicry, camouflage, and temperature regulation to thrive in their habitats.

**Science SOL:** 3.1, 3.4, 3.5; 4.1, 4.2, 4.3, 4.8

**Math SOL:** 3.MG.1, 4.MG.1

**English SOL:** 3.RV.1, 4.RV.1, 5.RV.1,



Fee: \$4 per student



## Flower Functions (4<sup>th</sup>)

Learn about the fascinating world of flowers and their structures and functions. Students become botanists as they observe and dissect flowers using hand lenses and microscopes to unlock floral structure. Outside, they discover and collect flower and pollinator data as they investigate the fascinating adaptations plants and their animal partners have developed with one another. Using critical thinking skills, they interpret the data they have collected. Students develop an appreciation for the diversity of flowering plants in the Chesapeake Bay Watershed.

**Science SOL:** 4.1, 4.2, 4.3, 4.8

**Math SOL:** 4.MG.1

**English SOL:** 4.C.1



Fee: \$4 per student



## Rocks Talk! (5<sup>th</sup>)

What do the rocks at the Arboretum tell us about the geologic history of the Chesapeake Bay Watershed? Student geologists identify the geographic distribution of Virginia rock resources and the distinctions among igneous, metamorphic, and sedimentary rocks. Collaborating in teams, students use mathematics to carry out rock density investigations. Outdoors, they look for evidence of tectonic plate movement, weathering, and erosion.





**Science SOL:** 5.1, 5.8

**Math SOL:** 5.MG.1, 5.PFA.2, 5.CE.2




Fee: \$4 per student



<b>Program</b>	<b>Science Topic</b>	<b>Science SOL (2018)</b>	<b>Technology</b>	<b>Engineering</b>	<b>Mathematics</b>	<b>Grade</b>	<b>Career Connections</b>	<b><u>Next Generation Science Standards</u></b>
<b>Early Explorers</b>	<b>Observations &amp; Investigation</b>	VA ELDS: APL1.1, APL3.1, SED3.1, CD3.4, CD3.5, CD1.1, CD1.2, HPD3.1, CLLD1.3, CLLD1.2	Hand lenses	Observation & Measurement	Patterns, Shapes	preK	Scientist	
<b>Mammals</b>	<b>Animal Life</b>	K.1, K.3, K.5, K.7; 1.1, 1.5, 1.7; 2.1, 2.4, 2.5, 2.7	Identification Guides, Rulers (Metric & Standard)	Observation & Measurement, Models	Geometry, Graphs 	K- 2	Vet, Zookeeper, Wildlife Rehabilitator, Zoologist	LS1.A, LS1.B, LS1.C, LS1.D, LS3.A, LS4.D
<b>Let's Sprout</b>	<b>Life Processes &amp; Needs</b>	K.1, K.5, K.6, K.7, K.9, K.10; 1.1, 1.4; 2.1, 2.4, 2.8	Hand lenses, Planting Tools	Problem Solving using Tools	Patterns, Data 	K-2	Plant Biologist, Chef, Landscaper, Farmer	LS.1A, LS1.B, LS1.C, LS2.A, LS3.A, LS4.D
<b>It's for the Birds</b>	<b>Adaptations of Organisms</b>	2.1, 2.5, 2.7; 3.1, 3.4, 3.5, 3.8; 4.1, 4.3, 4.8	Binoculars	Field Observations	Data Collection 	2-4	Educator, Ornithologist,	LS1.A, LS1.B, LS2.C, LS3.B, LS4.C, LS4.D
<b>Incredible Insects</b>	<b>Diversity of Life; Life Cycles</b>	2.1, 2.4, 2.5, 2.7; 3.1, 3.4, 3.8	Microscopes, Insect nets, Collection jars	Insect Modeling	Patterns	2-3	Entomologist, Bee Keeper,	LS1.A, LS1.B, LS1.D, LS4.D
<b>Vivid Virginia</b>	<b>Food Webs &amp; Ecosystems</b>	3.1, 3.4, 3.5, 3.8; 4.1, 4.2, 4.3, 4.8	Hand lenses, Metric rulers	Interpreting information using models & sketches	Graphing, Measuring, Data Collection & Analysis	3-4	Ecologist, Landscape Architect, Conservationist	LS2.A, LS2.C, LS4.C, LS4.D; ESS3.C
<b>Scoop on Soils</b>	<b>Soil Science</b>	3.1, 3.6, 3.8	Beakers, Stopwatch, Graduated cylinder, Soil probe	Data Analysis & Models	Measurement & Data collection	3	Soil Specialist, Ceramic artist, Building Contractor	ESS2.A, ESS2.E
<b>Snake Savvy</b>	<b>Animal Behavior</b>	3.1, 3.4, 3.5; 4.1, 4.2, 4.3, 4.8	Identification guides, Maps, Standard & Metric rulers		Number Sense, Measuring, Probability	3-4	Herpetologist, Customs agent, Wildlife rehabilitator	LS1.A, LS1.D, LS4.C, LS4.D



<b>Program</b>	<b>Science Topic</b>	<b>Science SOL (2018)</b>	<b>Technology</b>	<b>Engineering</b>	<b>Mathematics</b>	<b>Grade</b>	<b>Career Connections</b>	<b><i>Next Generation Science Standards</i></b>
<b>Flower Functions</b>	<b>Flower Structure &amp; Function</b>	4.1, 4.2, 4.3, 4.8	Microscopes, Hand lenses, Metric rulers		Fractions, Factors, & Patterns	4	Botanist, Florist, Botanical illustrator	LS1.A, LS1.B, LS1.C, LS4.D
<b>Rocks Talk</b>	<b>Rocks, Geology</b>	5.1, 5.8	Streak Plates, Hand Lenses, Digital scales, Dichotomous Key	Map Skills	Multistep problem solving, measuring	5	Stone carver, Miner, City Planner, Geologist	ESS1.C, ESS2.A
<b>Watershed Investigations (MWEE)</b>	<b>Watershed Science</b>	6.1, 6.6, 6.8, 6.9	Microscopes, Dichotomous keys, Thermometers, Turbidity tubes	Analyzing Systems	Computation	6	Fisheries Biologist, Water & Sewer Technician, Agricultural Engineer, Hydrologist	LS2.A, LS2.C, LS4.C, LS4.D; ESS2.C, ESS3.A, ESS3.C
<b>Arbor Sleuth</b>	<b>Classification &amp; Identification</b>	5.1, 6.1, 7.1	You can register for <b>Arbor Sleuth</b> or <b>Young Ecologists</b> or build your own program from the activities listed on page 7. (a la carte).		Measurement	5-7	Forester, Urban Planner, Carpenter, Tree Care Professional	LS1.A, LS4.D, LS3.A, LS3.B
<b>Young Ecologists</b>	<b>Inter-dependence of Life</b>	LS.1, LS.3, LS.5, LS.6, LS.7, LS.8, LS.9, LS.11			Proportions	7	Ecologist, Restoration Scientist, Landscape Architect	LS2.A, LS2.B, LS2.C, LS4.B, LS4.D
<b>Water Quality Technology (MWEE)</b>	<b>Watershed Science</b>	ES.1, ES.8; BIO.1, BIO.2; CH.1	Hand-held Colorimeter	Interdependence of Science, Engineering, & Technology	Data Collection & Analysis	9-12	Wastewater manager, River Monitor, Water well monitor	LS2.C, LS4.D; ESS2.C, ESS3.A, ESS3.C
<b>Science Explorations</b>	<b>Scientific Process</b>	BIO.1, CH.1, ENV.1 and others depending on chosen inquiry	Variety of observing & measuring tools	Experimental Design	Data Collection, Analysis, & Modeling	9-12	Varies with Program	Science & Engineering Practices 1-8
<b>Environmental Science Investigations</b>	<b>Scientific Process</b>	ENV.1, ENV. 5, ENV.6, ENV.9, EC.1, EC.7, EC.8, EC.13	Measuring tools	Experimental Design	Data Collection & Analysis	9-12	Varies with Program	Science & Engineering Practices 1-8
<b>Self-Guided Backpacks</b>	<b>Exploration of the Natural World</b>	Varies	Observation Tools	Investigation, Problem Solving	Patterns, Measuring	PK-8		

# Middle School (6th—8th)



## Watershed Investigations (6<sup>th</sup>)

Students investigate the health of Blandy's aquatic systems. They collect, measure, record, and analyze abiotic water quality indicators such as temperature, turbidity, pH, and nitrates. They assess water quality by identifying and analyzing aquatic macroinvertebrates of Blandy's wetlands. Your watershed scientists also evaluate the physical site adding context and a sense of stewardship in this meaningful watershed educational experience field investigation.



**Science SOL:** 6.1, 6.6, 6.8, 6.9

**Math SOL:** 6.CE.2

Fee: \$6 per student



## Young Ecologists (7<sup>th</sup>)

In this program students delve into what interdependence means. On the road to becoming ecologists, students investigate our replica skull collection to explore classification using physical traits. Using science and engineering practices, they assess the biotic and abiotic factors vital to a watershed ecosystem, determine an organism's role, and whether that ecosystem can support particular organisms. With this program, your young ecologists will have a meaningful understanding of habitat, diversity, and biological interdependence.

**Science SOL:** LS.1, LS.3, LS.5, LS.6, LS.7, LS.8, LS.9, LS.11

**English SOL:** 7.RV.1, 7.C.1



Fee: \$6 per student

## A La Carte Programs for Middle School (6th—8th)

Customize your middle school students field experiences by choosing 2-3 activities from the options below. Contact our educators to also discuss options that can be included from the above programs. Each activity runs a minimum of 45 minutes. For groups of more than 3 classes, a lunch station can be added. Call 540-837-1758 x 290 or email [schprog@virginia.edu](mailto:schprog@virginia.edu)

Fee: \$6 per student

### Tree Identification



Students hone their observation skills as they explore the Arboretum using hand lenses and dichotomous keys to identify trees. Science SOL: LS.1, LS.3, LS.4



### Create your Own Classification Key



Open inquiry for students to use plant specimens to create a classification key based on physical traits. Science SOL: LS.1, LS.3

### American Chestnuts



Through modeling and observation, students learn about the economic and ecological significance of the American chestnut, past, present and future. Science SOL: LS.1, LS.6, LS.7, LS.8, LS.9, LS.11 History: SOL US1.2, US1.5, USII.2, CE.1, CE.11



### Skull Identification

Students investigate our replica skull collection to explore how specific traits influence individual and population behaviors. Students measure and analyze skulls to identify them using a dichotomous key. Science SOL: LS.3, LS.7



# High School (9<sup>th</sup>-12<sup>th</sup>)



## Water Quality Technology (9<sup>th</sup>-12<sup>th</sup>)



This Meaningful Watershed Education Field Experience focuses on measuring water quality indicators using technology. Environmental scientists use hand-held colorimeters to explore the effects that temperature, pH, dissolved oxygen, nitrate, and other indicators have on water quality. Students evaluate results and communicate their water quality assessment with others. Assessments can be shared with your local community to exercise civic responsibility. This program is designed to take three hours with groups of no more than 15.

**Science SOL:** ES.1, ES.8; BIO.1, BIO.2; CH.1

Fee: \$6 per student



## Science Explorations (9<sup>th</sup>-12<sup>th</sup>)



A day-long investigation! Student researchers use critical thinking to conduct scientific investigations as they define a problem, develop a hypothesis, interpret data, and communicate their results. Previous exploration examples include: animal and plant adaptations, the effect of abiotic factors on lichen, and the impact of non-native species in a wetland. Call (540) 837-1758 Ext. 290 to discuss class sizes, scheduling, and possible investigations. This program is scheduled from 9 a.m. to 2 p.m.

**Science SOL:** BIO.1, CH.1, ENV.1, and others depending on the inquiry chosen

**Math SOL:** PS.DC.1, PS.DC.2, PS.DC.3, PS.DS.1, PS.DS.2

Fee: \$9 per student



## Environmental Science Field Investigations (9<sup>th</sup>-12<sup>th</sup>)



Complementing the [VDOE's Environmental Science Content & Process Guidelines](#), this program focuses on science process skills by providing students with hands-on, field-based, inquiry experiences with data collection and analysis. Students carry out field investigations using scientific methodologies and concepts that help them more deeply understand the interrelationships of the natural world and human/environmental systems. Your environmental scientists develop research questions, devise collection/observation techniques to employ, collect and analyze data, and evaluate their methods.

**Science SOL:** ENV.1, ENV. 5, ENV.6, ENV.9, EC.1, EC.7, EC.8, EC.13

Fee: \$9 per student

## What teachers say about our programs:

- ♦ "The material presented was geared right to the level of our children. We felt that our children (and the adults) learned a lot and we'll be eager to return again. Thanks for creating such an informative and engaging program!"
- ♦ "The programs at Blandy are TOP NOTCH and encourage critical thinking as well as collaboration. We love that they are open ended and involve the scientific method as well as working together as a team to complete activities and challenges."

Program Seasonality			
Ideal			
Successful			
	Fall	Winter	Spring



# Self-Guided Backpack Programs

Interested in a self-guided exploration of the Arboretum?

Reserve a backpack full of engaging, self-directed activities! We have four backpack themes. A themed set consists of four identical backpacks with activity instructions, equipment, and all necessary materials. Each identical backpack in a set is intended for chaperoned groups of 6 students, meaning one backpack set can accommodate up to 24 students total.

Use the on-line program registration system to reserve a set of backpacks for your class. For more information, contact [schprog@virginia.edu](mailto:schprog@virginia.edu) Fee for each Backpack Set: \$15



## Use Some Sense

Pre-School & Kindergarten

Develop students' senses as they observe the natural world. Hands-on activities include: Leaf texture scavenger hunt, exploring primary and secondary colors using color paddles, practicing reading and listening skills with the *Butterfly Alphabet* book; and more!



## Secrets of the Garden

Early Elementary (K-3)

Study the plants, trees, and herbs at Blandy to explore plant life cycles; plant life needs; how plants rely on pollinators such as bees; and uses of plants. Students use Peterson Flash Guides, hand lenses, and observation skills during their explorations. Activities include an arboretum nature scavenger hunt; a close, hands-on look at tree slices (or cookies); games about plants and trees; a leaf rubbing pattern and shape study; and a story about the importance of bees for plants.



## WILD THINGS!

Grades 4-7

Observe the wildlife that makes their home at the Arboretum! Using Peterson Flash Guides, binoculars, and hands-on activities, students hone observation and identification skills as they look for wildlife signs, learn about animal adaptations and disguises, and discover how ecosystems depend on all living things. Activities include an arboretum scavenger hunt; birds and worms relay; stories; and a close-up, hands-on study of deer antlers, hides, and tracks.



## EARTH TALKS

Grades 6-8

Through geologic explorations, your students examine rocks and soils of Blandy with identification guides and hands-on investigations. They learn about Virginia fossils and the geology that shaped our world today.

## NOTE TO EDUCATORS

### Blandy Experimental Farm Education programs:

- ◆ **Correlate with Virginia Standards of Learning**
- ◆ **Align with the Next Generation Science Standards**
- ◆ **Emphasize Hands-On, Experiential Learning**
- ◆ **Are Grade Level Targeted & Discipline Integrated**
- ◆ **Develop 21st Century skills**
- ◆ **Develop Science and Engineering Practices**
- ◆ **Incorporate Elements of STEM**
- ◆ **Provide Environmental Literacy Connections**
- ◆ **Generate student interest in career possibilities**

Our programs provide meaningful watershed education field experiences for your students at all age levels. As part of the 2014 Chesapeake Bay Watershed Agreement, school divisions are to provide: "at least one meaningful watershed educational experience in elementary, middle and high school depending on available resources."

A visit to the State Arboretum of Virginia provides authentic learning in the outdoors. Our programs feature hands-on learning and investigations to provide children positive and meaningful experiences with the natural world. We are dedicated to engaging your students in exciting, place-based science, investigative experiences!

All of our programs are designed to meet Virginia Standards of Learning (SOL) requirements; target science and math standards are listed in the descriptions. Most programs are offered for a range of grades; activities can be tailored to your specific grade visiting. We use an integrative scientific approach by incorporating science and math, developing technology and engineering skills, and applying 21st century skills (5Cs). All programs are designed to support your classroom teaching; they can be used to introduce new concepts, enhance current lessons, or review a unit. We look forward to participating with you in providing the best possible STEM learning for your students!

### Our facilities include:

- ◆ A variety of outdoor learning locations including wetlands, woodlands, meadows, and gardens:
  - ⇒ Three classrooms: Parkfield Learning Center, Peetwood Pavilion for Environmental Education, and Blandy Community Classroom
  - ⇒ 175-acre Arboretum collection with over 1000 species of trees, shrubs, and herbaceous plants
- ◆ Essential infrastructure:
  - ⇒ Designated School Bus Parking area
  - ⇒ Picnic area with tables (seats about 80)
  - ⇒ Wheelchair-accessible restrooms in all teaching and public structures

## Program Structure

### ***For 3 to 5 classes visiting Blandy:***

Classes rotate through several activity stations. During rotations, Blandy educators and teachers share the responsibility for leading students through the program activities. Rotation schedules :

- ◆ Are a series of stations that classes move through using a predetermined schedule
- ◆ Maximize student engagement & enhance students' learning experiences
- ◆ **Arrival time is 9:40 a.m. for program briefing & restroom visits. Departure times vary based on your schedule.**

### ***For 1 to 2 classes visiting Blandy:***

Programs are 75 minutes unless otherwise stated in the program description. Three time slots are available (10:00 a.m., 11:30 a.m., and 1:30 p.m.).

To see our Programs at a Glance, go to pages 7-8.

# Meaningful Watershed Education Experiences (MWEEs)

What is a [MWEE?](#)

- A learner-centered framework that focuses on investigations into local environmental issues and leads to informed action.
- Outdoor classroom learning designed to increase environmental literacy by actively engaging students in building knowledge and meaning through hands-on experiences. Core ideas and practices of multiple disciplines are applied to make sense of the relationships between the natural world and society.
- Connects students with their local environment and equip them to make decisions and take actions that contribute to stronger, sustainable, and equitable communities.

Blandy Experimental Farm is your outdoor classroom for MWEEs at elementary, middle, and high school levels. Visit Blandy Experimental Farm for field based investigations focused on land use and land management, water quality, human usage of these waterways and how these affect the health of our waterways and the organisms that share our watershed system. Combine your field investigations at Blandy with your classroom lessons to develop your students' [environmental literacy \(ELIT\)](#) knowledge, skills, and attitudes (KSA); these ELIT KSA's scaffold in complexity as students move through the grade levels. Students learn about environmental and watershed systems in an interdisciplinary format using knowledge and skills from other content areas to investigate, assess, and synthesize environmental and watershed system components, processes, and human impacts.

**4th grade:** During their field investigation, students develop an understanding of connections to the Chesapeake Bay Watershed and how we can positively affect it. Students design and engineer a filtering system to remove sediment from water, determine if an organism's life needs can be met in a wetland habitat, infer how the organism may be affected by soil erosion and pollution, and conduct field observations of land use to consider the land use impacts on the watershed system. **SOL- Science (2018): 4.1, 4.3, 4.8 Math (2023): 4.PS.1 English (2024): 4.R.1, 4.C.1, 4.RI.1** Fee: \$6 per student



**6th grade:** Students investigate the health of Blandy's aquatic systems. They collect, measure, record, and analyze abiotic water quality indicators such as temperature, turbidity, pH, and nitrates. They assess water quality by identifying and analyzing aquatic macroinvertebrates of Blandy's wetlands. Your watershed scientists also evaluate the physical site adding context and a sense of stewardship in this meaningful watershed educational experience field investigation. **SOL- Science (2018): 6.1, 6.6, 6.8, 6.9 English (2024): 6.C.1 Math (2023): 6.CE.2, 6.PS.1** Fee: \$6 per student

**High School:** Your environmental scientists carry out watershed investigations using scientific methodologies and concepts that help them more deeply understand the interrelationship of the natural world and human and environmental systems. Students use hand-held colorimeters to explore the effects that temperature, pH, dissolved oxygen, nitrate, and other indicators have on water quality. Students investigate macroinvertebrate health with hands-on data collection and analysis. Students evaluate results and communicate their water quality assessment with others. Assessments can be shared with your local community to exercise civic responsibility. **SOL- Science (2018) ES.1, ES.8; BIO.1, BIO.2; CH.1 English (2024): 9.DSR, 9.C.1, 10.DSR.1, 10.C.1 Math (2023): PS.DS.1, AFDA.DA.2** Fee: \$9 per student

