

The Elizabeth River Project's **Dominion Energy**

# Learning Barge



2024-2025 **GreenSTEM**

## Our Elizabeth River, Our Responsibility

**MISSION:** Making restoration of the Elizabeth River a reality.

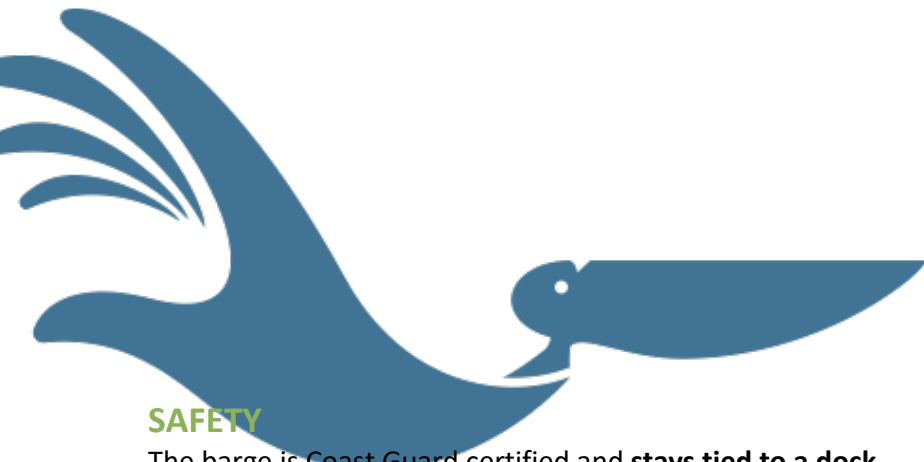
**AWARD WINNING:** Students learn by doing aboard the 120'x 32' steel deck barge designed by the University of Virginia and owned and operated by The Elizabeth River Project. The barge is a unique and powerful living laboratory for students to learn about river science, the Elizabeth River watershed, ecosystem, stewardship and restoration efforts. As America's Greenest Vessel, her "green" design demonstrates sustainable practices for home and school. Students come aboard thinking globally and leave equipped to make a difference in their community. The Learning Barge's education program received the 2011 Environmental Excellence Award from SeaWorld Busch Gardens, 2014 Governor's Gold Award for Sustainability and 2015 VA Env. Excellence Award from Dept. of Conservation and Recreation.

**NEW PROGRAM:** To foster river stewards and teach resilience, students perform a scientific field investigation to answer, *"How has the Elizabeth River changed over time, and what can I do to help?"*

To begin, students are divided into small groups and rotate to six learning stations performing hands-on activities. Each Elizabeth River Project educator portrays a blue/green career to get students thinking about possible job opportunities as they grow up. During the program, students will identify plant and animal species, gather and record data, and utilize real field tools like thermometers and water quality equipment.



**MORE INFORMATION:** Summer Mace, Assistant Director-Education, [smace@elizabethriver.org](mailto:smace@elizabethriver.org), (757) 418-1042



## SAFETY

The barge is Coast Guard certified and **stays tied to a dock** during the entire program. One chaperone or teacher is recommended per 15 students.

## IDEAL GROUPS

20-60, preK-university (**15 student min., 90 max**)  
Public, private and home schools,  
youth organizations and scouts

## TO SCHEDULE

Fill out a Request Form found at [www.elizabethriver.org](http://www.elizabethriver.org)  
(Learning Barge Page)

**Helpful information** to provide when scheduling:

- 1.) How many students
- 2.) Grade level of students
- 3.) Season or month interested in
- 4.) Name of school and your contact info.

## PROGRAM TIMES

Monday – Friday. Closed holidays.  
Must reschedule if raining or extreme weather.

### **Typical time slots:**

9:30-11am or 10-11:30am  
11-12:30pm or 11:30-1pm

### **Seasons include:**

Fall: Sept. 18 – Nov. 21  
Spring: April 1 – June 8  
Summer: June 19 – August 4

## TEACHER RESOURCES

Additional activities are available at [www.elizabethriver.org](http://www.elizabethriver.org)

**PRICE PER STUDENT** (Sliding Scale – You choose)

\$15-\$20 (per student) **1.5 hour** program.  
Teachers are free, and first 6 chaperones are no charge. Additional chaperones after first 6 are subject to fee. Please inquire about homeschool pricing.

NEW pricing – Please contact Summer Mace, [smace@elizabethriver.org](mailto:smace@elizabethriver.org) to discuss pricing and sliding scale. Financial assistance and Title 1 pricing may be available. We will do our best to work with your budget.

## DOCKING SITE

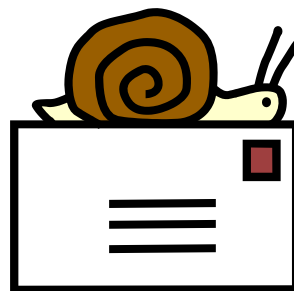
**Grandy Village Learning Center**  
2971 Kimball Loop Terrace  
Norfolk, VA 23504

## WHAT TO BRING

Program is entirely OUTSIDE, please make sure students are dressed appropriately. We recommend sunscreen, water bottle, hat, jacket/  
raincoat, and closed toe shoes.

## SNAIL MAIL THE CREW

Students are encouraged to SNAIL MAIL the barge crew by writing a letter and sharing what they will do to support a healthy river. Write:  
The Learning Barge Crew, The Elizabeth River Project, 4610 Colley Ave., Norfolk, VA 23508



# VIRGINIA STANDARDS OF LEARNING

**SCIENCE: K:** 1, 4, 5, 6, 7, 9, 10, 11 **1:** 1, 2, 4, 5, 6, 7, 8 **2:** 1, 4, 5, 6, 7, 8, **3:** 1, 2, 4, 5, 6, 8, 9, 10, 11  
**4:** 1, 3, 4, 5, 6, 9 **5:** 1, 4, 5, 6, 7 **6:** 1, 2, 3, 4, 5, 6, 7, 8, 9 **LS:** 1, 4, 5, 6, 8, 9, 10, 11, 13 **PS:** 1, 6, 11 **ES:** 1, 2, 3, 6, 8,  
10, 11, 12, 13 **Biology:** 1, 8

**MATH: K:** 6, 10, 11, 13 **1:** 10, 12, 15 **2:** 2, 6, 11 **3:** 3, 10 **4:** 4, 7, 8, 14 **5:** 4, 16 **6:** 6

**HISTORY: K:** 2, 3, 5, 8 **1:** 1, 5, 13 **2:** 1, 6, 8, 10 **3:** 8 **VS:** 1, 2 **Geography:** 1, 2

## LANGUAGE

**ARTS: K:** 1, 2, 3, 5, 6, 8, 10, 11 **1:** 2, 3, 8, 12 **2:** 2, 3, 6, 7, 10 **3:** 1 **4:** 1 **5:** 1  
**6:** 1 **7:** 1

**ART: K:** 2, 3, 5, 7, 13, 15 **1:** 1, 4, 5, 9, 12, 13, 15, 17 **2:** 5, 6, 9, 15, 17  
**3:** 1, 4, 5, 7, 12 **4:** 1, 3, 5, 11 **5:** 1, 5, 7, 9, 11 **6:** 7, 9 **7:** 9, 10 **8:** 9

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## 21<sup>st</sup> CENTURY SKILLS

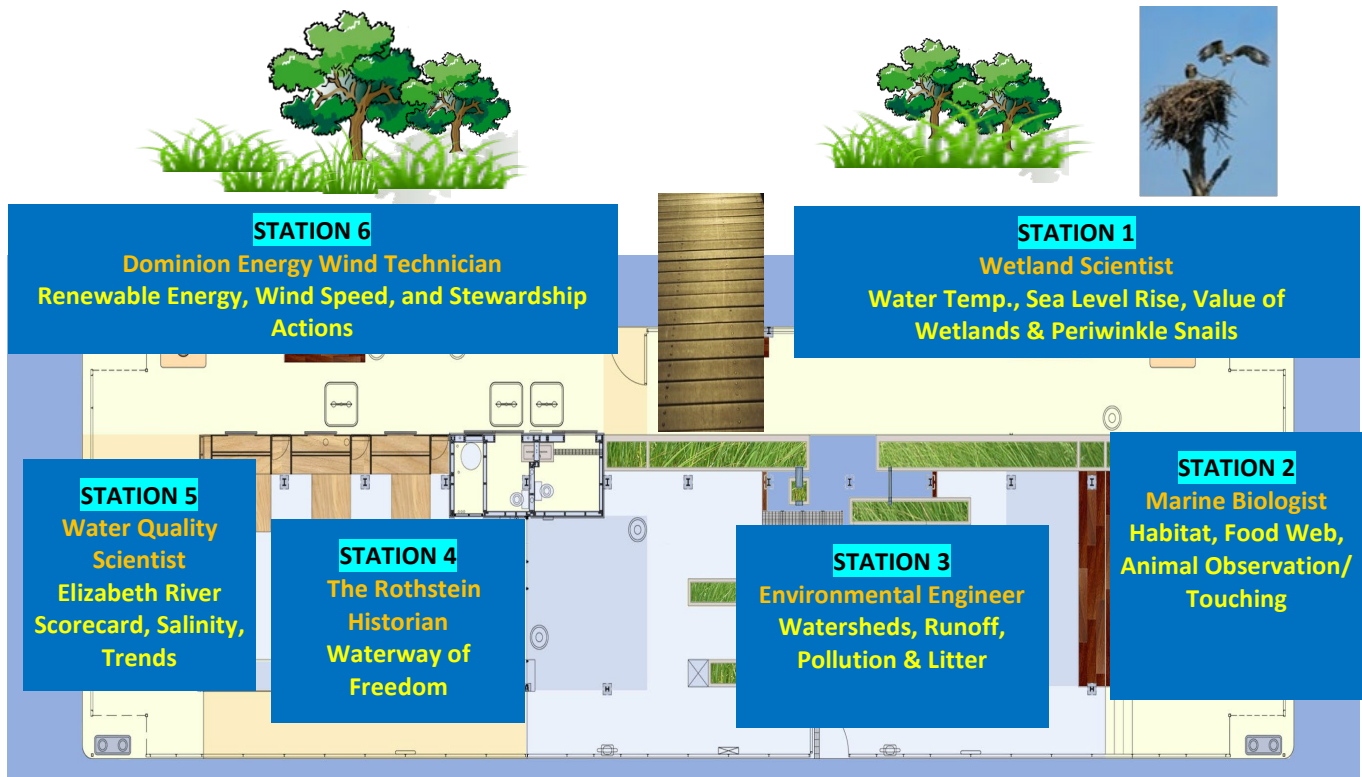
**Students rotate through six multidiscipline learning stations that:**

- are designed to excite youth about their home river;
- offer an opportunity to discover and explore;
- are research-based utilizing real-world restoration projects;
- utilize critical thinking and problem-solving to stimulate senses and spark curiosity;
- foster a generation of stewards empowered to care for the Elizabeth River.

**Curriculum addresses Virginia Standards of Learning** in science, language arts, math, history and art. Students explore, analyze, map, gather data, graph, identify, predict and compare results. Program begins with a research question and concludes with reflection.



# 6 LEARNING BARGE STATIONS



## LEARNING STATION SUMMARY

Students investigate: *“How has the Elizabeth River changed over time, and what can I do to help?”*

### Wetland Scientist

Water temperature, sea level rise, value of wetlands and periwinkle snails

Students will answer, *“Sea level rise can impact wetlands by \_\_\_\_\_”*. Students will investigate why the Elizabeth River’s wetlands have changed over time, and why wetlands are important. They will discover how warming water temperature contributes to rising seas and loss of wetlands, and how to measure water temperature using thermometers. Students will have the opportunity to hold a small critter who relies on the wetlands for habitat, and discuss how Wetland Scientists help the Elizabeth River.





## Marine Biologist

### Habitats, food web, and animal observation/ touching



Students learn how the Elizabeth River's habitat and ecosystem has changed over time, while answering, *"If a species of animal disappeared, how would this affect the food web?"* They discover "what eats what", and how each animal species in a food web is important. Students will have the opportunity to create their own food web, and get an up-close look at some Elizabeth River critters caught by Learning Barge educators. They will learn the importance of conserving natural habitats, and what Marine Biologists do to help the Elizabeth River.

## Environmental Engineer

### Watersheds, storm drains, pollution and bacteria

Students discover how there has been an increase in runoff and pollution, and how watersheds work. They will learn how runoff from flooding and rain can pick up pollutants, carry it down storm drains and into the Elizabeth River. They will learn how to use tools to help pick up trash and answer, *"How long does it take for a plastic wrapper to break down?"* Students will discover if bacteria is present in the river and how "scooping the poop" helps. The Learning Barge's Environmental Engineer will teach students what they can do to help.



## The Rothstein Historian



### Learn how the Elizabeth River offered freedom

Students will identify on a globe the Atlantic Ocean, Chesapeake Bay, Elizabeth River and other key areas. They will learn a brief history of the Elizabeth River, including Native Americans, and the arrival of the English and Africans. They will understand some ways that the Elizabeth River has provided freedom including playing a leading role in the Underground Railroad. They will create art with maps that connects them to the Elizabeth River as a lifelong steward.

## Water Quality Scientist

### Elizabeth River Scorecard, salinity and recognizing trends

Students will learn how the Elizabeth River's water quality has changed over time by analyzing river scorecards. They will learn the importance of measuring water quality while using real water quality tools to measure salinity. Students will answer, *"What factors can change the salinity of the Elizabeth River?"* Students will use graphs to interpret data, and learn how Water Quality Scientists help the river.



## Dominion Energy Wind Technician

### Renewable energy, wind speed, and stewardship

Students will learn the difference between renewable and nonrenewable energy while looking at real solar panels and wind turbines aboard the Learning Barge, powered solely by energy harnessed from the wind and sun. They will learn about Dominion Energy's offshore



wind project being built off the coast of Virginia Beach, how wind turbines work, and how to measure wind speed with an anemometer. They will discover ways to reduce their energy consumption and answer, *"What is the largest source of Renewable Energy in the United States?"*

Thank you for helping make this program possible!

## Dominion Energy

### Batten Educational Achievement Fund of Hampton Roads Community Foundation

Bank of America  
Chesapeake Bay Restoration Fund Advisory  
Committee – Made possible by the Sale of  
Chesapeake Bay License Plates  
Cox Foundation  
Department of Conservation & Recreation  
Dollar Tree Foundation

Elizabeth River Crossings  
Elizabeth River Project  
Mark Rothstein River History Series  
National Endowment for the Arts  
Norfolk, Portsmouth, Chesapeake & Virginia Beach Public  
Schools  
Virginia Pilot Association

The Maintenance Advisory Committee's generous in-kind support keeps our barge floating!

BAE Systems - Norfolk Ship Repair, Fairlead Ship Repair,  
Sherwin Williams, Robbins Maritime, Norfolk Tug Co. Inc,  
Coastal Services, Crofton Industries & Diving, Earl Energy,  
Inc., East Coast Steel Fabrication, Inc., Ireland Marine, Inc.,

Marine Chemist Atlantic, Matherne Marine Design, Inc.,  
MHI Ship Repair and Services, Michael Petrus and Phoebe  
Crisman, Solar Services, Inc., Virginia Ship Repair  
Association, Yacht Systems Services