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 might sea level rise and increased flooding affect me, the blue crab and my community, and what actions can I take to help?”

To begin, students are divided into small groups and rotate to six learning stations performing hands-on activities, identifying species, gathering and recording data and utilizing tools like field scopes, secchi discs, monoculars and water quality equipment.
**SAFETY:** The barge is Coast Guard certified and stays tied to a dock during the entire program. One chaperone or teacher is recommended per 10-15 students. **ATTENTION:** In light of COVID-19, the Elizabeth River Project is dedicated to creating a safe environment for students and parents while attending our programs. Social distancing will be practiced at all times, materials and surfaces will be thoroughly sanitized before and after each use, and a fun blue crab face mask will be provided to everyone who comes aboard!

**PRICE** (Sliding Scale – You choose.)
$9-$12 **1.5 hour** program  
$14 for out of area students

NEW pricing – Please contact Robin Dunbar, rdunbar@elizabethriver.org to discuss pricing and sliding scale. Sliding scale based on your budget. Teachers and chaperones are free. 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**
Sunscreen, water bottle, hat, jacket/raincoat, closed toe shoes.

**TEACHER RESOURCES**
Additional activities are available at www.elizabethriverprojec.wixsite.com/kids

**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, Elizabeth River Project, 5205 Colley Ave., Norfolk, VA 23508

**IDEAL GROUPS**
MAX 15 students and 5 adults, 3rd-5th grade. Contact Summer Brown for homeschooling groups, scouts, or students outside of 3rd-5th grade age range.

**TO SCHEDULE**
Email Summer Brown, Learning Barge Manager sbrown@elizabethriver.org or call 757-418-1042. You can also fill out a Request Form found at 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**
**TUESDAYS.** Closed holidays. Must reschedule if raining or extreme weather.

**Typical time slots:**  
10:00am, 1:00pm, 4:00pm

**Seasons include:**  
Fall: October – November  
Spring: To be determined  
Summer: To be determined
21st 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.
THE BLUE CRAB

- **The Blue Crab** is a 10-legged crustacean that walks sideways using its three middle pairs of legs and uses its sharp front claws for protection and hunting.
- **The crab’s scientific name means “beautiful swimmer.”**
- **Gender can be determined by looking at the shape of the underbelly of the crab’s apron.** Narrow shape (male); Broad shape (female). Female’s claw tips are red.
- **Female crabs seek out the saltiest part of the bay (the mouth of the bay) to have their babies.** Most of the bay’s blue crabs are born in or near the Elizabeth River!
- **Adult crabs are omnivorous** and feed on bivalves, crustaceans, fish, marine worms, plants and detritus.
- **The blue crab is one of the most economically important shellfish** in the Chesapeake Bay and recently has been in decline. Learn how you can help! www.elizabethriver.org

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**STATION 1**
**It’s A Crab’s Life**
Dissolved Oxygen, Excess Nutrients, Runoff, Scoop the Poop

**STATION 2**
**Wetlands & Shallows Habitat, Wetlands, Bioblitz**

**STATION 3**
**Jimmys & Sooks Watermen & Temperature, Economy, Growth**

**STATION 4**
**River Lab Anatomy, Art, Resilience**

**STATION 5**
**Beautiful Swimmer Salinity, Observation, Crab Behavior**

**STATION 6**
**Count Me In! Renewable Energy, Carbon Footprint and Stewardship Actions**
LEARNING STATIONS

Students investigate: “How might sea level rise and increased flooding affect me, the blue crab and my community, and what actions can I take to protect the future of the blue crab and my community?”

Beautiful Swimmer
Salinity, Observation, Crab Behavior
Students answer, “Sea level rise might affect the Elizabeth River’s salinity. How might that affect the Elizabeth River’s plants & animals?”
Students learn how the Elizabeth River gets its brackish water and why salinity is important for blue crab behavior. They test the salinity at the barge site to decide whether they are more likely to find adult crabs or juvenile crabs. Students observe live blue crabs and learn how they swim, eat and even regenerate appendages.

Wetlands & Shallows
Habitats & Bioblitz
Students learn about the importance of wetland grasses for Blue Crabs and the Elizabeth Rivers food chain while answering the question, “How do you think sea level rise and flooding could affect wetlands?” They learn that wetland grasses serve as habitat to around 40% of all animals, and how wetlands help filter out pollutants in the river. They discuss how rising seas can impact habitat, the value of wetlands and what they can do to help. They’ll get their hands wet as they explore various animals that contribute to the rivers food chain while learning how to bioblitz.

River Lab
Anatomy, Art, Resilience
Students build crab art with watercolor painting while listening to a crabbly, sideways walk song. They learn what makes a crab a crab and answer “How might sea level rise impact the Atlantic Blue Crab’s anatomy?”
Students learn about how a crab’s exoskeleton helps them be resilient and how fossil fuels and carbon dioxide can affect the thickness of their shells. They learn that blue crabs molt 18-30 times making them vulnerable to predators for the 2-3 days it takes for their shells to harden.
Jimmies & Sooks

Watermen, Economy, Temperature & Growth: Students learn the importance of the blue crab in the Chesapeake Bay while answering, “How do crabbing regulations protect the Atlantic Blue Crab population and our economy?” They learn how local watermen identify the crabs by color, size, weight and gender by becoming junior watermen for the day. Students examine how crab pots are engineered and the different methods used for crabbing. They learn how water temperature promotes growth in blue crabs. They also compare the blue crab’s population size over the years and hypothesize why we’ve seen a decrease in their numbers after looking at a graph.

Be Responsible

SCOOP the POOP

It’s a Crab’s Life

Dissolved Oxygen, Excess Nutrients, Runoff, Scoop the Poop: Students learn about and measure the river’s dissolved oxygen while answering, “How might warming water temperatures and excess nutrients impact animals like the Atlantic Blue Crab?” Students discover how we impact dissolved oxygen for marine animals like the blue crab. Students will understand how reducing runoff, greening schoolyards and scooping the poop can help lessen excess nutrients from going into our river.

Count Me In!

Reduce Energy, Carbon Footprint, Renewable/ Nonrenewable & Stewardship: Students learn how the Learning Barge is off the grid and harnesses energy from the wind and sun. They learn how to reduce their energy consumption, the difference between renewable/ nonrenewable energy and answer, “Actions to help reduce sea level rise in my community are _______?” Students observe how the Learning Barge captures and reuses rain water and has composting, waterless toilets.
Dominion Energy

Batten Educational Achievement Fund of Hampton Roads
Community Foundation

BWET ~ National Oceanic Atmospheric Administration

Chesapeake Bay Restoration Fund Advisory Committee – Made possible by
the Sale of Chesapeake Bay License Plates
Colonna’s Shipyard
Dollar Tree Foundation

Norfolk, Portsmouth, Chesapeake & Virginia Beach Public Schools
Norfolk Redevelopment and Housing Authority
SeaWorld & Busch Gardens Conservation Fund
Virginia Natural Gas
Virginia Pilot Association

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

BAE Systems - Norfolk Ship Repair
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
Norfolk Tug Co., Inc.
Robbins Maritime, Inc.
Solar Services, Inc.
Virginia Ship Repair Association
Yacht Systems Services

MORE INFORMATION
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sbrown@elizabethriver.org
757-418-1042
www.ElizabethRiver.org

Elizabeth River Project
5205 Colley Avenue
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