About Waterfront Alliance

Waterfront Alliance inspires and effects resilient, revitalized, and accessible coastlines for all communities. We are a coalition of more than 1,100 organizations, working together to bring about real change to our region’s waterways and 1,600 miles of coastline.

About Estuary Explorers

Waterfront Alliance’s Estuary Explorers program was founded to educate youth in the New York-New Jersey Harbor Estuary through our waterfront-based field labs. The program has expanded to offer a wide range of remote learning activities, including our new unit, Coastal Science in Your Kitchen.

Our field labs give students the opportunity to learn at waterfronts in their own communities, often unexplored or unfamiliar to them. The one-hour lesson connects to the geography of the harbor, teaches about permeable and non-permeable surfaces, measures basic water quality parameters such as pH and temperature, and draws conclusions on how these scientific metrics observed by the students themselves factor in to the coastal resilience of their waterfront.

Expanding beyond the waterfront, we’ve recently introduced Coastal Science in Your Kitchen, with indoor environmental science activities that use simple materials found around the home. The lessons range from an experiment on ocean acidification that can be observed in a jar to modeling green infrastructure through testing items in a tray of water.

Estuary Explorers field labs and online resources are adaptable for students in grades 4 through 12. These resources provide teachers or parents and students with extensive background information and post-activity resources to both prepare for the experience and help extend and connect learning beyond the immediate activity.
Fall 2019 Activities

Using a newly expanded field lab lesson plan, that includes activities on climate change and coastal resilience, our educators led field labs with 23 classes and more than 600 students from Manhattan, Brooklyn, and Staten Island at a waterfront nearby their school. The trips were at no cost to teachers or parents and all supplies were provided, including a free test kit for teachers and ongoing access to our lesson plans. By bringing our waterfront labs to shorelines near the school, we make it easier for teachers and students to make environmental education connections to their own communities.

Some of the waterfront sites we turned into harbor labs in 2019 include Pier 69 in Bay Ridge and Pier 1 in Staten Island. For decades, a small, natural beach on the Manhattan shoreline underneath the Brooklyn Bridge had been fenced off along the esplanade while community demand for access grew. Waterfront Alliance partnered with the City and Manhattan Borough President’s Office to create the first-ever public access to the beach for special educational events. Estuary Explorers students benefitted from this rare opportunity to touch the water at a beach in Manhattan, including those from P.S. 124, The Yung Wing School; M.S. 131, The Dr. Sun Yat Sen School; The Blue School; The Urban Academy of Emergency Management; and The Urban Assembly Maker Academy.

Based on teacher evaluations after the program, 85% believed Estuary Explorers to be a positive experience and 75% saw the program fitting in well with their learning goals.

“Thank you so much for doing this. It was very much appreciated and enjoyed by kids and parents!”

Clodagh Fraccari – Langan Engineering
(Webinar email response)
Spring 2020 Activities and New Digital Resources for Remote Learning

In response to the COVID-19 crisis, Waterfront Alliance educators quickly pivoted to develop an online series of resources entitled Coastal Science in Your Kitchen, for hands-on, at home education for students, teachers, and parents. Over the course of April, May, and June, we widely distributed these online distance learning materials for environmental education through our website, newsletter, social media, and through direct outreach emails to our full contact list of school partners.

Schools across all five boroughs—ten of which who were slated for Estuary Explorers field trips—received digital and virtual learning resources, including M.S. 104, Simon Baruch Middle School; Mott Hall II; J.H.S. 54, Booker T. Washington; Teachers College Community School; The Washington Heights Expeditionary Learning School; City College Academy of the Arts; Bronx Latin School; I.S. 131, Albert Einstein Academy; Q 495, Bayside High School; and P.S. 59, The Harbor View School.

Distance Learning Resources:

Coastal Science in Your Kitchen Tool Kit: A series of three activities designed for interactive, indoor education available for free on our website.

- The Human Impacts Game: gives students insight into the effects humans have on their local waterways.
- The Mystery of the Disappearing Shells: draws clear comparisons between an experiment with an eggshell in a jar and what is happening in water bodies today.
- Become an Ecological Engineer: shows students how to construct a model shoreline in a pan or tray and observe how green infrastructure can protect both the environment and the coast.

Introduction to Climate Change and Coastal Resilience PowerPoint Presentation and Student Workbook: Dive into the history of the harbor, revitalization efforts, what climate change is, and how coastal resilience is a valuable tool in helping to support communities. The student workbook reinforces several key concepts explored in the presentation such as greenhouse gases, combined sewer overflow systems, and green infrastructure.

Climate Change and Coastal Resilience Live Webinar: A recorded webinar designed to make this challenging topic more easily accessible. We presented the webinar in conjunction with World Oceans Week, and more than 60 educators, parents, and students logged in and asked detailed questions regarding climate change and environmental issues facing the harbor.
Next Steps

We will continue to expand our online resources and work with our school partners to support their emerging needs. In addition to creating three new remote learning lesson plans for the coming school year, including one that brings water quality testing indoors, we’ll incorporate more video. We’ll also be offering three teacher professional development sessions or webinars in 2020–2021 with training and support for educators to use these new materials.
“It was such an amazing experience to actually be at the water and through the surroundings, realizing that we are truly on an island.”

Brooke Kalick – PS 124 Yung Wing

“It was awesome, my students loved visiting places in the vicinity of their school.”

Migdalia – P.S. 140 Nathan Strauss

“Being able to test our own local water allowed students to have the real-world connection that they need and they were super excited to be on a beach that isn’t open to the public.”

Cristina – PS 124 Yung Wing

NYC Department of City Planning hosted our Coastal Science in Your Kitchen “Become an Ecological Engineer” activity on Instagram Live on June 10, 2020 (recorded video available).
In the 2019-2020 school year, Estuary Explorers was supported by City Council Members Carlina Rivera, Mark Levine, Ydanis Rodriguez, Vanessa L. Gibson, Ruben Diaz, Paul Vallone, Carlos Menchaca, Justin Brannan, and Deborah Rose.

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