

environmental education and e-learning



Maryland Port Administration Classification 14: Websites Port Category 1



Summary of Entry

The Port of Baltimore strives to engage and educate the public on the dredging program that maintains the deep channels for ships coming into the Port and raising awareness of the Port's activities that restore valuable habitat in the Chesapeake Bay watershed.

The Port of Baltimore Environmental Education Team met community and educational outreach challenges during the past two years by innovating virtual and hybrid programs, tours, and creating a new website that houses lesson plans to better reach educators and the public. All lesson plans and programs are freely available, with some on a request only basis. A centralized location for site tour requests has kept the Port continually engaged with local communities.

The challenges of Covid-19 impacted everyone tremendously, some more than others, and the Port sought to alleviate these hardships by extending resources to educators, students, parents, and the greater public. This broader effort aligned with opportunities to promote outdoor experiences and the environmental protection efforts of the Port while the nation was finding comfort in outdoor spaces.

Program topics and tours include but are not limited to: the success of beneficial reuse of sediment, the operations of the Port, the Port's mitigation and habitat restoration projects, birding, and the Terrapin Education and Research Partnership (TERP).

Our website, the Environmental Education E-learning (E3) portal, was developed entirely by the Port of Baltimore Environmental Education Team as a platform to make lessons, programs, and activities more accessible. This access includes digitizing all lesson plans and programs, creating informative virtual games, and streamlining request services for tours and programs as in-person opportunities become available. These platforms enable the Port to increase its reach and audience awareness, while successfully establishing new connections through free experiences, both virtually and in person.

The Environmental Education Team met our community virtually, and in schools and in person when physical distancing was possible. Our terrapin ambassadors met students throughout Maryland and inspired them to think like scientists, while tours of our Dredged Material Containment Facilities (DMCF) and habitat restoration sites demonstrated commitment to environmental protection and the importance of innovation to our stakeholders. Our outreach staff connect Port operations and dredged material management to the public through community engagement and by participating with local committees.

The Port continues to strengthen and build connections with the public, keeps them informed, and provides educational experiences for all. Diversity, equity, and inclusion are at the forefront of these outreach and education endeavors as several facilities are near underrepresented communities and the Port is committed to being a considerate neighbor, opening a world of possibility around us. Our classrooms are not just traditional brick and mortar institutions, but also hands-on lessons in nature. For our students, the Environmental Education Team excels in making the school year exciting and providing educational experiences that leave them smiling and exclaiming, "This was the best day ever!"

Website: <https://www.portofbaltimoreeducation.org>

Lesson Library: <https://www.portofbaltimoreeducation.org/lessonlibrary>

Terrapin Travels Lesson & Game: <https://www.portofbaltimoreeducation.org/terrapin-travels>

Terrapin Homeroom: <https://www.portofbaltimoreeducation.org/terrapin-education-home>



Question #1 - What are/were the entry's specific communications challenges or opportunities?

Covid-19 presented a major obstacle to reaching local schools, communities, and site visitors both in person and in hybrid settings. These challenges required the Port of Baltimore Environmental Education Team to innovate new ways to reach constituents and community members. Prior to school re-openings all educational settings were restricted to virtual or outdoors, at the discretion and comfort of our audiences. Existing online educational resources were updated and made available in a new website created to provide resources for schools and educational groups.

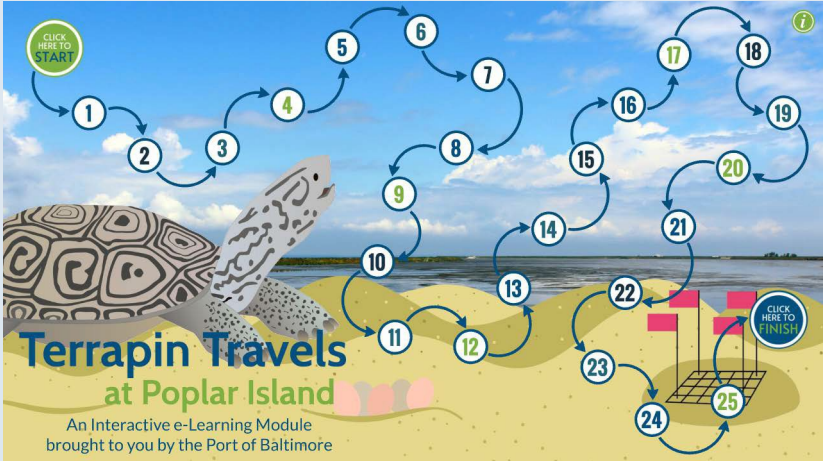
Twenty lessons are offered through the E3 website, along with the ability to request tours and programs led by our educators, modified to suit each groups' needs. Lessons are now also being offered in Spanish and programs are beginning to be translated. Through organic growth and ease of access, our lessons and programs are now reaching more of the public than before.

The Port addressed the critical need to support teachers and students at home and provided exciting learning and recreational spaces through dredged material placement sites such as Poplar Island, Cox Creek, Hart Miller Island, and Masonville Cove. The outreach and educational programs conducted at these sites build rapport with surrounding communities while involving and educating the public in Port operations and the use of dredged material. Programs show beneficial use of dredged material as an effective solution in local wetland habitat restoration and mitigation. Terrapins, migratory birds, and wildlife are testament to successful restoration.

Another challenge was developing online material and adapting programs to the new website in a fast-paced timeframe. Within two months of development nine lessons were fully adapted and made publicly available. Within one year, the website housed 20 lessons and programs which continue to be updated by the Environmental Education Team.



The TERP page hosts all terrapin lessons and informs participants and newcomers about the program



Terrapin Travels and many other lessons are available virtually and offer interactive experiences



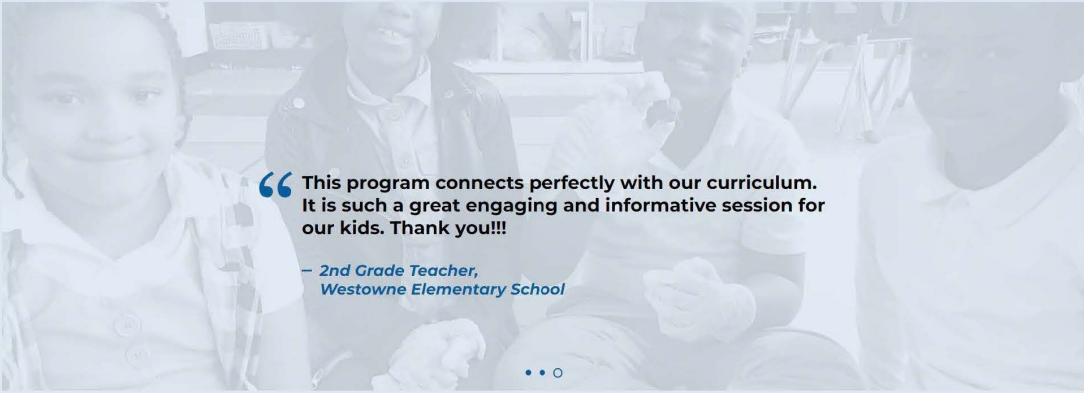
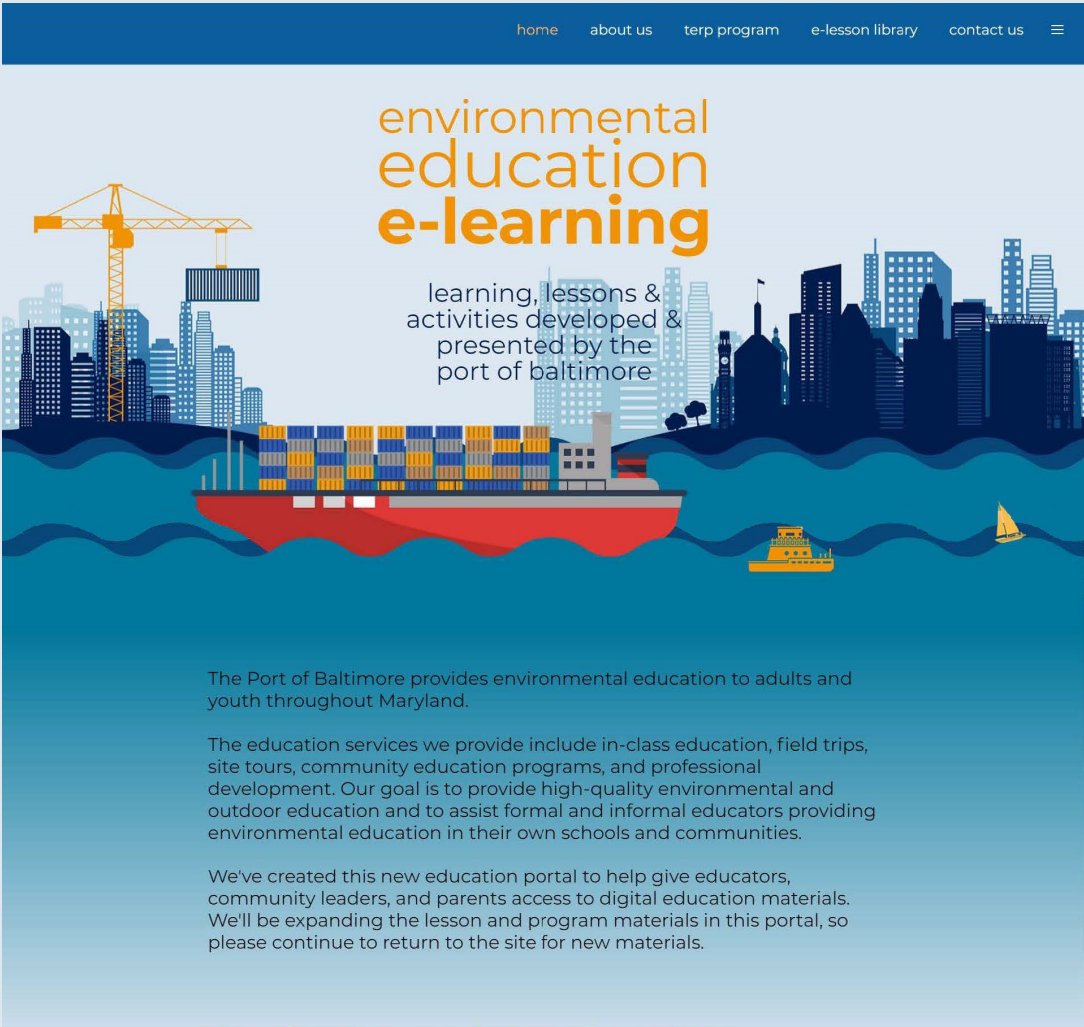
Pre-Covid, Terrapin Travels Lesson and Game during a visit to Cox Creek

E3 Homepage

E3 as an entirely new website required our team to be creative with branding and graphics throughout our pages.

The homepage makes great use of these graphics, showcases testimonies from educators on our programs, and summarily informs visitors of our offerings. Cargo ships, cranes, silhouettes of the Baltimore City skyline, and friendly student faces make E3 a welcome site for all and an introduction to Port activities.

User experience was also intentionally designed to be simple and welcoming with features such as drop down menus, contact information, and program request forms available on every page.



about us

The Port of Baltimore Environmental Education Team provides hands-on lessons about the Port's history and significance. They also teach about the Port's environmental initiatives throughout Maryland, focusing on environmental projects related to dredging and restoration.



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& Maryland Environmental Service

request an
education
program

Fill out a program request form [HERE](#).

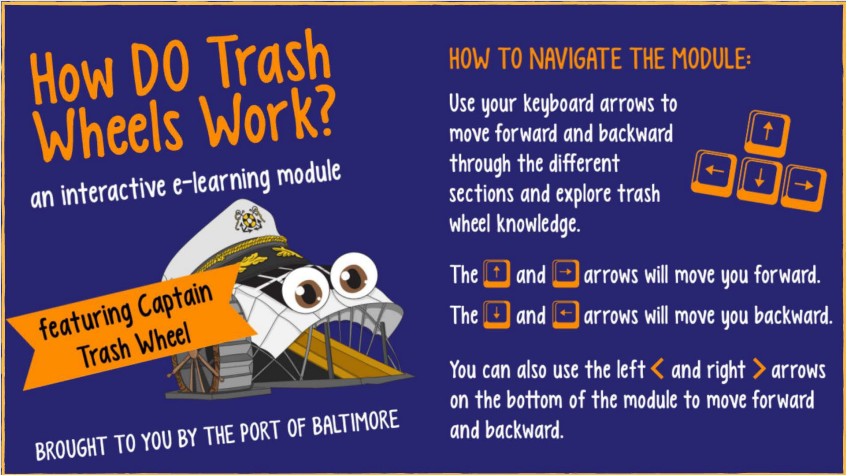
contact us

phone
410-729-8200
email
outreachtours@menv.com

Question #2 - How does the communication used in this entry complement the organization's overall mission?

The Port's mission is to stimulate the flow of waterborne commerce through the ports in the State of Maryland in a manner which provides economic benefit to the citizens of the state. The Port is a key economic engine for the State of Maryland; linked to more than 150,000 direct and indirect jobs, moving more than 30 million tons of cargo, and providing \$3.3 billion in annual salaries and wages, \$2.6 billion in business revenues, and \$395 million in state and local tax revenues. However, there are many gaps in public knowledge and awareness that the Port continues to address. The Port's business is beneficial for all Maryland citizens, and its role as an environmental innovator and community stakeholder necessitate educational campaigns.

Dredging keeps the Port open for business and is important for its continued growth and success. The Environmental Education Team serves as a liaison to the public and educators, and keeps people informed about the importance of dredging, how placement capacity is a need, and that innovative reuse and beneficial use of dredged material sustains the mission of the Port by producing environmental and economic benefits for the State of Maryland. The Port's Environmental Education Team's E3 website provides lessons and programs informing about the Port's environmental restoration and mitigation work.



Students learn about Trash Wheels and Masonville Cove's famous Captain on E3!

Question #3 - What were the communications planning and programming components used for this entry?

The overall goals for Outreach and Education are to:

- Educate and inform audiences of all ages about the importance of the Port of Baltimore to the state's economy, relevant job and career options, the need to maintain shipping channels, innovative reuse and beneficial use of dredged material, the Port's projects in local environments, and to provide impactful and enjoyable experiences.
- Advance support for environmental restoration and mitigation projects, while also inspiring people as environmentalists to be involved in their local communities and learn about green careers.
- Build connections and foster relationships with our communities.



Pre-Covid, Students meet and pose with Captain Trash Wheel

The objectives were to:

- Engage and educate audiences on a fun but informative virtual platform, while meeting Maryland State Department of Education standards.
- Develop and distribute a new website that makes the Port's environmental lessons, activities, and programs freely accessible to computer and mobile users.



How Do Trash Wheels Work is still offered as an in person lesson

Program target audiences include:

Educators and Students

Educators and students benefit from our lesson plans that are aligned with Maryland State Department of Education Standards and Next Generation Science Standards for classrooms or remote use, and can be used as a prerequisite to site tours, which feature hands on and creative learning experiences.

Our programs and activities connect the beneficial uses of dredged material to restoration projects and animal habitats they can see and visit. Virtual site tours and E3 lessons related to sites allow participants to experience sites from anywhere, while also encouraging and informing later visits in person. The Port's Environmental Education Team now offers lessons and programs in Spanish as well which help overcome language barriers in our Spanish speaking bilingual communities and reinforce schools Spanish immersion programs. This helps disseminate information further into communities and garner continued support for the Dredged Material Management Program in the State of Maryland.

Citizens and Communities

Due to the perception that dredged material is contaminated and harmful to human and environmental health, the Port continues to educate the public and communities about the composition of the material. All sediment is tested and used according to strict evaluation metrics and can be used to restore habitat.

These studies present opportunities for additional programming which focus on the Science Technology Engineering and Math (STEM) behind dredging and Port activities. By informing our communities and offering citizen science programs, we gather support for this initiative to make it successful.

Educational and Academic Organizations

The restoration of Poplar Island in the Chesapeake Bay as a Dredged Material Containment Facility created the perfect habitat for Terrapins to lay their eggs. The Port relies on educational partners to help with research and provides lessons on environmental restoration through the Terrapin Education and Research Partnership (TERP). This program involves over 150 schools throughout Maryland through partnerships with Arlington Echo Outdoor Education Center, the William S. Schmidt Center, Maryland Environmental Service, and the National Aquarium. The program encourages students and teachers to think like scientists by studying, collecting data for research, and raising Terrapins, a protected species and Maryland's state reptile.

Many classroom partners are now also becoming engaged with supplemental material such as coloring pages, interactive e-lessons, and opportunities to learn about terrapins and dredging outside of the classroom. Not only do these materials make for good lessons or homework, they reinforce learning and improve the success of our programs. These materials work especially well for teachers, since lessons meet MSDE and NGSS standards, and provides opportunities which meet their curriculum.

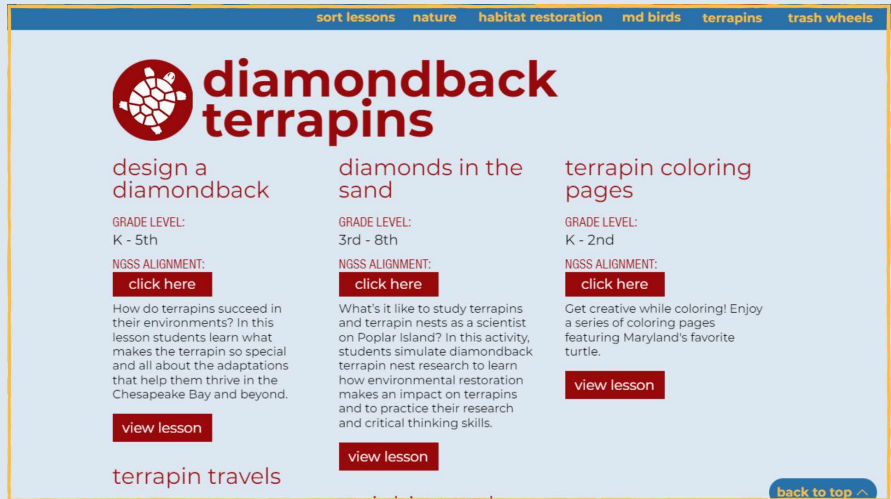
Students and teachers are often curious about terrapins they care for in the TERP program and now have more opportunities to learn about them. When they later visit Poplar Island for a release tour, they are able to witness firsthand the possibilities of habitat restoration using dredged material. These groups help to spread awareness throughout the academic community and all educational institutions at home, public, and private.



The E3 portal's lesson library welcomes guests with our visitors' friendly faces

Diamondback Terrapins: Terrapin Travels					
Grade	Performance Expectations	Disciplinary Core Ideas		Crosscutting Concepts	Science and Engineering Practices
3-5	4-LS1-1**	LS1.A	LS2.C	Cause and Effect	Developing and Using Models
	5-LS2-1***	LS1.B	LS4.C	Systems and System Models	Constructing Explanations and Designing Solutions
	5-ESS3-1**	LS1.C	LS4.D	Stability and Change	
		LS2.A			

MSDE and NGSS standards are available for every lesson on E3



Lessons are categorized and offer informative and fun experiences



Lessons are now also being offered in Spanish!

Question #4 - What actions were taken and what communication outputs were employed in this entry?

The Port's Environmental Education staff began acting on adaptive plans with the start of Covid-19. Developing the E3 website began almost immediately in mid-2020, with the website and first lessons made fully available. The Port officially registered the website's domain, and more lessons were added in 2021. The Port's Environmental Education team completed adapting and digitizing all lesson plans with Next Generation Science Standards in early 2022 and plans to continue developing and adding material on a rolling basis. Program request forms for lessons and tours went live in early 2021.

Meetings with the Port project managers and staff provided oversight and messaging strategy, key audiences, outreach tools, and techniques. A deliverables schedule provides focus for the Environmental Education Team and the Port and keeps the team on track to meet objectives. Word for the website spread among educators and organically through community events as a wholistic portfolio of services.

Staff remained in contact with teachers and Port program partners since initial website development and planned virtual announcements and newsletter campaigns to reach citizens and communities with each new and existing program. Announcements about the website were sent to new and existing school partners and included adapted programming to suit the comfort of our audiences throughout the pandemic. Communications regarding the programs included use of presentations, facts, visual, and hands-on experiences to spread information.

Every audience has a different level of knowledge and understanding of dredged material management and the Port's operations. According to earlier Trend Reports , and from programming experience, between 65% and 85% of people describe themselves as visual learners. The Port employs visual mediums which engage all audiences and allow them to understand and retain the information. Videos and infographics are visually appealing, engaging, and informative. Coupled with hands-on or outdoor learning, programs offer easily understood lessons on dredging and environmental sciences. These lessons also capture the attention of audiences knowledgeable about the topics and make for an unforgettable experience. The Port and Environmental Education staff are innovating outreach components and inspiring communities.

To reach its goals, the Port developed a strategic release plan to augment visibility of programs and the E3 website:

Email Announcements & Newsletters:

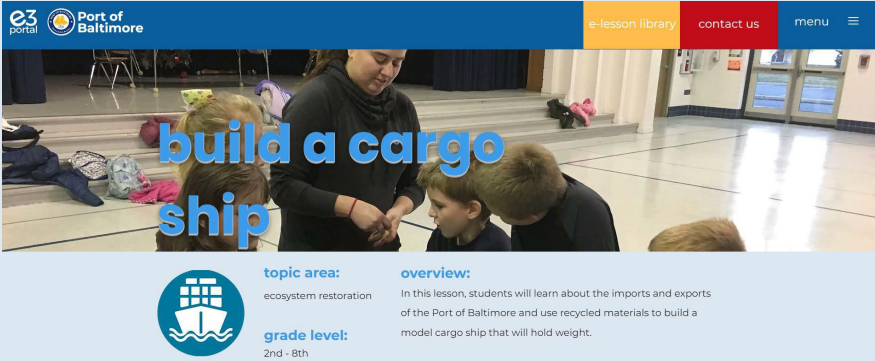
The Port features and announces programs in the bi-monthly Environment Community Outreach (ECO) Port Newsletter, along with videos and infographics. Additional announcements for the website are created by the Environmental Education Team and mailed directly to educational partners.

Web & Social Media:

The Port of Baltimore and other outreach and education partners created social media posts announcing the E3 website.

Outreach & Organic Growth:

New program and website information was shared with over 150 school groups across Maryland and community groups.



Build a Cargo Ship encourages students to think creatively while teaching Port operations and habitat restoration



Chapel District Elementary students engage and ask questions



Question #5 - What were the communications outcomes from this entry and what evaluation methods were used to assess them?

Results were collected and evaluated using metrics of both in person and online engagement. Website analytics measured unique visitors and number of site sessions. Feedback is also directly solicited from committees and stakeholders. Success of ongoing Port education and outreach is evident in the data below:

- In 2021, E3 had 310 unique visitors and 568 sessions.
- From January 1st to May 15th 2022, E3 had 144 unique visitors and 237 sessions.
- In 2021, 447 adults and 502 students participated in lessons and programs. An additional 732 adults and 28 students participated in tours of Port DMCF sites.
- In 2022, 14 adults and 284 students have participated in on-line lessons and programs as of 5/5/22. An additional 785 adults and 67 students participated so far in tours.
- Since 2010, over 92,000 Marylanders have learned about the Port's environmental restoration initiatives through the Port of Baltimore Environmental Education Teams' programs. Over half of participants were students!
- New teachers and their classrooms, homeschool groups, and many individuals have been engaged and are learning through the E3 website!

Please see Appendix for email materials, social media postings, and other communications.

Additionally, the Port has received positive feedback from teachers and community members including:

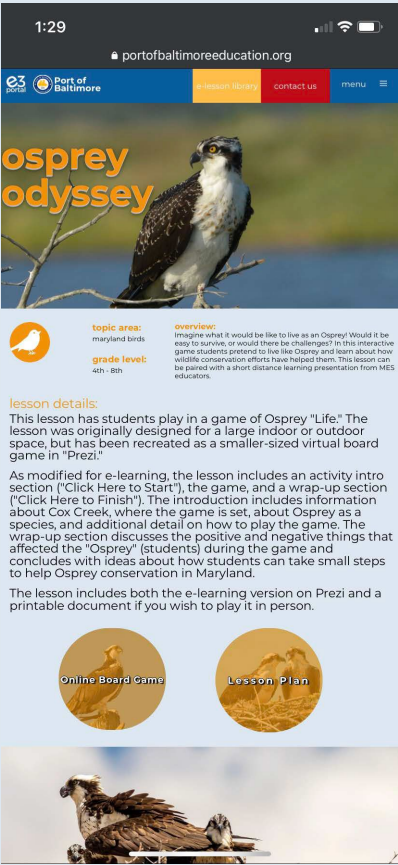
"This program connects perfectly with our curriculum. It is such a great engaging and informative session for our kids. Thank you!!"
2nd Grade Teacher,
Westowne Elementary School

"Our four different [virtual] programs were individualized for different age groups-fabulous. . Our students really enjoyed them."
Education Coordinator,
Baltimore Lab School

"That was such an amazing field trip! You all have got virtual learning down! The game had them moving and smiling and having fun! I'm super impressed with all that you have done to put your programs online and would love to take another "trip" in a few months."
4th Grade Teacher,
Churchill Elementary School

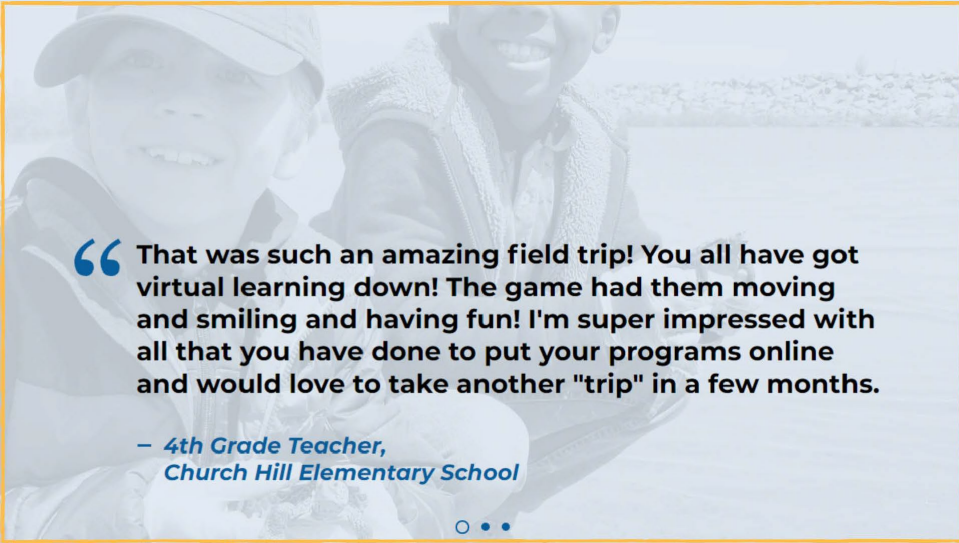


The E3 website features all kinds of environmental lessons, including our wonderful Terrapins and fabulous Osprey!



In Summary

Prior to Covid-19, the Port of Baltimore's education and outreach programs depended primarily on in-person opportunities to make connections. While the E3 website is still relatively new, the Port is continuing to develop and expand opportunities to use virtual and hybrid options to engage with communities and educational groups. By spreading the word of the Port's innovative use and environmental restoration using dredged material, the Port is informing the public of operations and destigmatizing the use of dredged material. The Port continues to innovate by working with agencies and experts to inform the public and future Port users about operations, mitigation, and the value of dredged material as a resource. This website is an environmental education and outreach tool successfully bringing the Port closer to local communities and inspiring next generations of scientists and environmentalists.



Praise from educators is prominently featured on E3's home page



A homeschool group visits Masonville Cove and tries out some Environmental Theater!



Thank you!

Appendix:

looking for virtual lessons? we can help!

The Port of Baltimore environmental education team can provide FREE virtual educational programs for your classes!

We work with learners of all ages and abilities to provide programs about a variety of environmental topics. Educational programs are provided at no cost to schools or teachers.

Submit a request form or call us at (410) 729-8200 to talk to us about designing an education program for your students.

exploring nature

dredging & habitat restoration

maryland birds

diamondback terrapins


trash wheels

custom science lessons



rebrand.ly/e3portal • outreachtours@menv.com • 410-729-8200

virtual terrapin education



The Port of Baltimore environmental education team can provide FREE educational programs for your classes! We work with learners of all ages and abilities and can provide engaging virtual programs about diamondback terrapins. Educational programs are provided at no cost to schools or teachers. Submit a request form or call us at (410) 729-8200 to talk to us about designing an education program for your students.

topics we teach...


habitats & habitat restoration

terrapin adaptations

nesting & life history

research & conservation


custom terrapin lessons




ONLINE: REBRAND.LY/E3PORTAL

EMAIL: OUTREACHTOURS@MENV.COM

PHONE: (410) 729-8200



Newsletter and Announcement materials that were distributed to educators in 2021



Friends of Masonville Cove

June 8, 2020 •

Today is World Ocean's Day #WorldOceansDay and in celebration and honor of protecting and restoring our shared oceans, #MasonvilleMonday is celebrating our beloved Captain Trash Wheel! Captain works tirelessly everyday to help keep litter and debris from reaching the Patapsco River, and ultimately the Atlantic Ocean to help keep our waterways healthy for us and the other wildlife with which we share our planet. Masonville Cove partners, Port of Baltimore and Maryland Environ... See more

TERPPPROGRAM.WIXSITE.COM

How Do Trash Wheels Work | E3 Portal


3

7 Shares

Like


Comment

Share



Captain Trash Wheel

June 8, 2020 •



Friends of Masonville Cove

June 8, 2020

Today is World Ocean's Day #WorldOceansDay and in celebration and honor of protecting and restoring our shared oceans, #MasonvilleMonday is celebrating our belo...

See more

TERPPPROGRAM.WIXSITE.COM

How Do Trash Wheels Work | E3 Portal

MES' highly trained educators provide hands-on lessons about the Port's history and significance. They also teach about the Port's environmental initiatives throughout Maryland, focusing on...

5

1 Share

Like

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Coordinated social media postings between Port partners advertised the website's new lessons as they initially rolled out

9