



Seeing is Believing

Linking 5th Grade Hampton City Students with their Local Culture and Nature through Outdoor Environmental Education provided opportunities for Hampton City School (HCS) 5th grade students to form personal connections to the waterways that flow throughout their community. Using the historical and environmental context of the James River, the Hampton Roads area, and the Chesapeake Bay, the James River Association (JRA) engaged a total of 1,107 students and 105 teachers across 21 Hampton schools through this Meaningful Watershed Educational Experience programming.

JRA environmental educators and Hampton City Schools Science Curriculum staff led professional development sessions for participating teachers aboard JRA's floating classroom, the Longview, a 50-foot Chesapeake deadrise. Teachers participated in a field experience similar to what students would experience in their programming, carrying out an abiotic water quality lesson and learning about a new land-based live oyster lesson which incorporates instruction on the oyster's life cycle, anatomy, tracking the growth of oysters. The lesson incorporates the importance of the oyster to the post Civil War history of Hampton. This professional development session empowered teachers to confidently incorporate environmental education and cultural stories into their classroom lessons, with a focus on the historical narrative of the Hampton area.

An additional professional development session helped educators prepare for in-class lessons, reinforcing what was learned during field experiences. Teachers and JRA educators worked together to connect Virginia SOLs to the program's environmental science curriculum.

Student experiences were aboard JRA's floating classroom, which brought the story of the region to life. On the boat, students learned why it is an ideal vessel for working on the river and utilized professional water quality equipment to perform river health assessments. Students interacted with both plant and animal aquatic organisms, including oysters and blue crabs, which were highlighted for their importance to the economy and history of Hampton. Through the use of a trawl net, students assisted in biotic sampling of the James River to collect and examine aquatic species. Using similar tools, methods, and locations,

students were able to learn about the fishing practices of the Black watermen who worked throughout the Chesapeake Bay.

While on land, students took an in-depth look at the eastern oyster (*Crassostrea virginica*) by observing the specimen growing below the dock in the growing bags. Students explored the anatomy and lifecycle of the oyster as well as the role of the oyster in the aquatic ecosystem, through observation and measurement of their filtration capacity. Students used this data, along with data from activities on the Longview, to support their synthesis and conclusions about the health of the James River.

With the support of JRA educators, teachers and students used field data and the schoolyard stormwater assessments to create Public Service Announcements and Earth Day posters that showcased their knowledge of the different stages of the project. Student posters highlighted James River species, an abiotic factor about the river's water quality, or a stormwater pollutant that impacts the James River. Posters were displayed throughout the school to share with other students, and promote across the school the benefits and importance of a healthy river.

JRA will continue cultivating the oysters through the summer to allow for adequate growth and survivorship. Once the oysters reach the appropriate size, JRA plans to coordinate a release event in partnership with one of our Hampton summer camp programs, during which students will assist in placing the oysters on the Hampton River community restoration reef used by Hampton City Schools for STEM education programming.