STEM Programs Available

❖ Science Barge Tour

(Grades 1-12)

The Science Barge is an urban sustainability education center, set to the backdrop of the Hudson and the Saw Mill River, right in the heart of downtown Yonkers. The Science Barge is the living embodiment of sustainability in the urban environment, running completely off grid. The Science Barge utilizes solar/wind power and rainwater to sustain many different hydroponic systems all while recycling and composting all of our waste. The design of the barge incorporates many sustainable design features: including a green roof, bioremediation area, and biodigesters. The barge also lends itself to research projects focused on oyster repopulation, water pollution and overall water quality. Students will get a behind-the-scenes look at what it takes to run this oasis of sustainability, and discuss the possibilities for future urban sustainable development.

❖ Garden Friend or Foe

(Grades 1-8)

Not all bugs are bad! And sometimes the cutest animals are the most destructive to our food systems. Students will be able to identify both common garden pests (vine weevil, cabbage moth caterpillar) and beneficial insects (ladybug, dragonfly, and worms). Environmental causes of insects, how killing insects can end up harming humans and the interrelationships between insects and people will be presented.

❖ Botany Breakdown

(Grades 1-8)

Students will discover the plant anatomy on their plate. They will match carrots and onions to the root of a plant diagram and learn the function of each plant part. Finally, they will learn about leaves and their role as the energy factory of a plant through photosynthesis. Students will also learn about what plants need to survive, both hydroponically and in nature.

❖ Living River & You and the Estuary Organism Study

(Grades 5-12)

The Hudson River is home to many vibrant wildlife and in this program students will learn about 6 of these fascinating and necessary organisms. From the regal Bald Eagle that you can see right here on the Science Barge, to Blue Crabs, one of the world's only swimming crabs! So let's dive in and see what makes the Hudson River so special!

❖ Daylighting the Saw Mill River

(Grades 6-12)

At the mouth of the Saw Mill River as it empties into the Hudson, a vibrant park surrounds the recently uncapped river flowing above-ground for the first time in 90 years. Take a historical walk along the Saw Mill River to discuss the Indigeous people that thrived here before us, the Industrial Revolution in Yonkers, and the vital relationship we have to the River. The newly created habitat supports existing species, most notably the American eel. And along the bank and in the river bed, we have included plant species that attract beneficial insects to encourage food chains and help sustain aquatic life.

❖ Climate Change & YOU

(Grades 9-12)

In this program students will learn how scientists track past climatic weather events on our planet. Students will learn how carbon moves from source to "sinks." We will then learn about how tracking paleo-climate and real-time data helps us confirm changes by looking at ice cores, tree cores, and weather data. We wrap up by learning about our role and present the Science Barge as an example of how humans can innovate to be resilient in times of change.

❖ Homesteading and Living Sustainably

(Grades 5-12)

In this program students will learn how to make their homes more sustainable regardless of where they live. The many practices include energy and water conservation, use of non-toxic materials, composting and recycling, all saving money, protecting health and sustaining resources and the environment. Many low-tech, no-tech solutions that are accessible to all homes, including urban communities, are presented.

❖ Extreme Weather Emergency Preparedness

(Grades 5-12)

This program will discuss the dangers of extreme weather events, what is driving them, and most importantly, how to be prepared for them. Best practices for weather-ready preparedness will be presented, including storm scenarios and checklists of home emergency preparedness kits that students can begin to prepare when viewing from home.