

River Research, Education and Adventure CHarters

“Rate Your River” Program

Description of Activities

The River REACH "Rate Your River" program can accommodate students in 4-12. Students rotate through a variety of activities to obtain a "snap-shot" of water quality in the Ohio River. It is a four-hour experience that takes place aboard the Queen City Princess and at the Queen City Riverboats dock.

Capacity

In order to keep our floating classroom as hands-on as possible, we limit the number of passengers on-board the Queen City Princess to 50 elementary/middle students, or 40 high school students. There must also be a minimum of three adult chaperones (in addition to the teacher) to accompany students.

Fees

The fee for this program is currently \$15 per student. A group minimum charge of \$400 applies for groups less than 27 students. Payment can be submitted the day of the voyage or FORE can invoice your school after the trip. Checks should be made out to the Foundation for Ohio River Education.

Discounts are available for schools with 25% or more of students on free and reduced lunch programs. We will work with schools as much as we can to keep our rates affordable. Please contact Heather Mayfield at 513-231-7719, or at hmayfield@orsanco.org for more information about pricing options.

Pre-Voyage Enviroscape Presentation

In order for your students to get the most out of their cruise, teachers are encouraged to work with FORE to coordinate an in-class Enviroscape presentation. FORE works with Hamilton County Soil and Water Conservation District to bring this presentation to schools in Hamilton County. FORE will also provide these presentations for schools outside of Hamilton County or Northern Kentucky. These one-hour, interactive presentations are designed to teach children about watersheds and how non-point pollutants affect water quality.

River REACH Cruise Activities

Students rotate through a variety of activities to obtain a "snap-shot" of water quality in the Ohio River. It is a four-hour experience that takes place aboard the Queen City Princess and at the Queen City Riverboats dock.

Water Sampling

Students will collect water samples from the side of the boat or boat dock. Students are given the opportunity to collect water samples with Kemmerer samplers and buckets.

Students will visually check the clarity, temperature and odor of the samples while discussing their observations at the sampling site.

Ohio River Scavenger Hunt/Habitat Assessment*

It is very important that our students know where they are on the river and understand the landmarks and infrastructure that contribute to the daily function of our communities. This activity introduces students to these concepts and allows them to make important observations regarding how the land is being used around the water, and

how that affects water quality. This activity also allows students to observe animals and their habitats in and around the water.

Students will compete in small teams to spot items on land or in the water. Items will include landmarks such as buildings, parks, and bridges; aquatic and land-based flora and fauna; and sources of pollution, including combined sewer overflows (CSO's), storm water outfalls, and non-point sources stemming from land-use.

**High school students have the option of performing a formal habitat assessment in lieu of, or in addition to the scavenger hunt.*

Rate Your River

Students will give the river a "health check-up" by measuring the following parameters. They will also learn how these parameters might affect fish and macroinvertebrates living in the water, as well as their own health.

- Dissolved Oxygen

Students will measure using Chemetrics colorimetric ampoules.

- pH

Students will measure using La Motte colorimetric kits.

- Temperature

Students will measure using thermometer or meter.

- Turbidity

Students will measure using turbidimeter.

- *E. coli* (optional for middle and high school students)

Students will count *E. coli* colonies on Coliscan culture plates from a previous day and will prepare new plates using their water samples. Results from their samples will be emailed to the teacher the next day.

- Nutrients (optional for high school students)

High school teachers have the option of including nutrient analyses (nitrates and phosphates) in this program; however, the analyses can only be performed in one group rotation and will have to be shared with the other groups.

Ohio River Fish

In this activity, students work with real specimens of fish collected from the sampling site to learn about fish morphology and adaptations that allow fish to thrive in the river environment. Students also learn why fish are important indicators of water quality.

Planktomania

Students will conduct a plankton tow and study both phytoplankton (algae) and zooplankton from the river. They will also learn how plankton can be used as a water quality indicator.

-more on next page-

Counting Critters

This activity will take place on the dock after lunch, when the boat returns to Queen City Riverboats. Students will scrub Hester-Dendy samplers taken from our sample site and sort through leaf litter and other debris to search for river macroinvertebrates. The students will identify the macroinvertebrates they find and complete a Pollution Tolerance Index (PTI) for the Ohio River.