

# Field Trip Program: Freshwater Ecology

At The North Carolina Arboretum

This program introduces students to the technologies used to monitor water quality and the impacts humans have on this natural resource. Students take part in an evaluation of the water quality of Bent Creek by examining chemical parameters such as pH and dissolved oxygen to determine if the stream is healthy enough to support populations of native aquatic organisms. Students use nets and other equipment to conduct macroinvertebrate sampling to rate the quality of the stream using a biotic index. Water conservation issues such as sedimentation and run-off are also included in the program.

## Principles:

- Stream quality can be determined by measuring chemical parameters of a sample of water such as pH, dissolved oxygen, temperature, nitrates, phosphates, alkalinity, total dissolved solids, carbon dioxide and others.
- Water chemistry parameters each have a range that is considered healthy for particular aquatic organisms.
- The presence of some aquatic macroinvertebrates provides insight into the general health of a body of water.
- Humans can have a negative effect on water quality, but possess the ability to make corrections to land use and other detrimental factors.

Duration: 1.5 hours

Cost: \$6.00 per student/parent chaperone. Teachers with the school are free. Payment should be given to the instructor at the start of the program. A second program can be booked at a cost of an additional \$3.00 per student.

Months Offered: September to mid-November, mid-March to May.

NC Science Essential Standards:

Eighth Grade: 8.E.1.3, 8.E.1.4

Starting Location: In front of the **Education Center** at the program start time (either 9:30 am or 12:00 pm) set upon booking the program. From there the group will take a hike to Bent Creek near the Azalea Repository (a 20-30 minute round-trip walk). Groups arriving early may enjoy the property and facilities. Only school groups that have pre-registered for an exhibit visit may enter the exhibits at the Baker Exhibit Center.

## *What do my students need?*

Students should wear clothing that is appropriate for the weather. In addition, students must be ready to enter the creek at the beginning of the program. Sandals or old tennis shoes may be worn in the creek. A change of clothing is recommended. Students with physical disabilities or limitations are capable of participating in the creek walk, but the instructor should be told prior to day of the program to make any special arrangements.

Want to schedule this program? Contact Michelle Pearce, Youth Education Coordinator, at [mpearce@ncarboretum.org](mailto:mpearce@ncarboretum.org) or (828) 665-2492 ext. 624

