



LEARNING LABS LAKESHORE BIOLOGY

On the shoreline of Lake Michigan, students conduct water-quality tests, collect plankton samples and connect the effects of local weather, plants, animals and human residents to the health of our lake. This seasonal program is offered in September, October, April, May and June. When weather permits, portions of the class will take place outside.

GRADE LEVEL: 6-12 | **CAPACITY:** 30 students | **DURATION:** 90 minutes

KEY CONCEPTS

Ecology, predator/prey relationships, ecosystems, food web

SKILLS

Scientific investigation and method, data collection and analysis, collaboration and communication, observation, research techniques

IL STATE LEARNING STANDARDS

- 11.A.3c, 11.A.3f, 11.A.3g, 11.A.4b, 11.A.4c, 11.A.4f, 11.A.5c, 11.A.5d, 11.A.5e
- 12.B.3a, 12.E.3a, 12.B.4a, 12.B.4b, 12.A.5a, 12.B.5a, 12.E.5
- 13.B.3c, 13.B.3e, 13.B.3f, 13.B.4b, 13.B.5e

WHAT TO EXPECT FROM THE LEARNING EXPERIENCE

- Students work in groups using scientific tools to explore the Great Lakes
- Teachers and chaperones may participate
- Students use SMART technology and multimedia resources
- Students present their findings to each other



For more information contact
studentprograms@sheddakquarium.org



FURTHER EXPLORATION

Encyclopedia of Life

<http://www.eol.org/>

Glencoe Biology, Virtual Labs

Assessing Water Quality

http://www.mhne.com/biosci/genbio/virtual_labs/

Smithsonian National Zoological Park

Microscopecam

<http://nationalzoo.si.edu/Animals/Invertebrates/default.cfm?cam=l2>

EPA

Biological Indicators of Watershed Health

<http://www.epa.gov/bioiweb1/index.html>

CONNECTIONS TO THE EXHIBITS

Every living organism on Earth needs water. Shedd Aquarium showcases many different aquatic ecosystems, from the remote waters of the Philippines to the Great Lakes that lie in our own backyard. Investigate the systems below to gain a better understanding of the important role water plays on our planet.

Local Waters Gallery

All water is connected, either naturally or through human activity. An outcome of this interconnectivity is the arrival of invasive non-native species. Explore the Local Waters gallery to find four ways in which invaders have entered our Great Lakes. What impact does each have on the ecosystem? What actions could be taken to control their spread?

Caribbean Reef

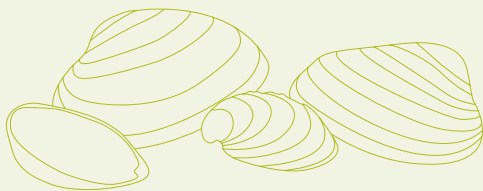
Coral reefs are complex networks of living things and one of the most diverse habitats on Earth. Discover the relationships among species and brainstorm a way in which they might connect in a food web. What forms the base of the food web? Who are the apex predators? Discuss that although this food web exists in nature, due to the aquarium's feeding practices, the animals in the Caribbean Reef do not prey on each other.

Wild Reef

Take your students to the coral lab at the end of the Wild Reef exhibit. Have them explore the lab and observe the water. What does coral need to survive? What properties of water promote or impede its growth? Discuss the impact of humans on coral reefs.

CONNECTIONS TO THE CLASSROOM

- Prepare students for the learning lab by having a discussion on the role of water on Earth. Topics can include the water cycle, aquatic ecology, comparisons of aquatic environments, sources of drinking water, water pollution, hydrology, etc.
- After the field trip, explore different water samples using simple tools ranging from thermometers and pH paper to swimming pool testing kits. Compare data from tap water, rainwater, pond water and other available sources to the results from the learning lab. What do the results tell you about each environment?



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