

Water Lab

OVERVIEW: Lake Classen and Lake Guy James are excellent ecosystems for students to learn about food webs and the role they play in aquatic communities. Students will gather and observe life from one of the lakes and participate in activities and discussions that help them understand the interdependence of life in the lake community and mankind's impact on that community.

PRINCIPLES:

- A lake ecosystem is made up of water, sunlight, air, detritus, mud/sand/rock, plants and animals
- All living things in the lake community are interconnected, including people.
- There are many microhabitats within the lake: surface, bottom, deep water, and its sides.
- Aquatic plants and animals have specific adaptations to help them meet their needs in a specific microhabitat.

VOCABULARY: Community, interdependence, aquatic, food web, photosynthesis, microhabitat, adaptation, cycle, nymph/larvae, producer, consumer, decomposer, detritus, micro organisms

Class Session:

1. Essential question: Is the water in the lake living?
 - a. By the end of the class students should be able to better answer this question
2. Create a Pond
 - a. Have the students draw their example of a lake member on the dry erase board.
 - b. Discuss where these members would be found. Their habitat (where the plant or animal lives)
 - i. Surface Water – habitat of air breathing, floating animals and those with the ability to walk on the surface
 - ii. Open Water – habitat of free swimming animals and small microscopic plants and animals
 - iii. Bottom – habitat of mud borrowing animals, as well as bacteria of decay
 - iv. Shore – habitat of rooted plants, birds, amphibians, mammals, algae, protozoan, worms, insects, snails, and small fish
3. Discuss the interdependence of the community. What happens if one species is removed
4. Prepare the students for sample collecting
 - a. Have students get together in small groups of 3 or 4
 - b. Distribute containers to collect lake “muck”
 - c. Explain expectations for collecting and to respect them
5. Have students collect samples. Both water and mud. Consider have each group collect for a different region of the lake
6. Bring samples to nature center or place to examine them
7. Consider using the microscopes
8. Have students identify their samples in a Pond Life Book
9. Consider recording species, their frequency, and where they were collected

Closure:

1. Have students share one thing that they have learned in this class.
2. Answer any last questions
3. Is the water Living?
4. Clean Up!
 - a. All water samples and animals need to get placed back into the buckets
 - b. Station areas need to be organized and clean
 - c. Samples need to be returned to the pond