



Life on the Edge

This activity is part of the **Water Conservation** theme

Purpose of this activity:

Students will realize the diversity of species in a natural shoreline ecosystem. They will learn the dramatic difference between the number of species found at natural shorelines versus non-shorelines and shorelines affected by human impact.

Key Messages:

- Shoreline ecosystems are vital to the health of a lake as they support a huge diversity of species (Habitats and Communities 1.2)
- A shoreline ecosystem is created by the overlapping/merging of terrestrial and aquatic ecosystems (Habitats and Communities 3.4)
- A shoreline is where most of a lake's plant production occurs because sunlight can reach plants, especially in shallow water (Habitats and Communities 3.3)
- Shorelines create important habitat for wildlife
- Human activities can have a positive and negative effect on a shoreline ecosystem (Habitats and Communities 1.1).

Materials:

- 4 Large Hula Hoops – Number each Hoop
- 2 stakes to secure the water Hula Hoop
- 3 laminated charts
- 3 clipboards
- 3 washable markers
- Backdrop
- Laminated Shoreline Poster and Good vs. Bad Cottage Poster for backdrop
- Various sizes of Lifejackets (if necessary)
- Various sizes of Rubber Boots (if necessary)

Set Up Instructions

Place the four Hula Hoops around the station in different types of ecosystems (i.e. undisturbed shoreline, beach, forest, and disturbed terrestrial). Make sure to peg down the hoops in the water. Arrange the backdrop and

posters as a focal point that is convenient for group discussions and teaching.

What will I be doing?

1. When the students arrive, have them count the number of wildlife on the background poster (46 different animals).
Q: How did they come up with this number?
A: They look different, so they must be different. If they can't come up with an answer then explain how to identify different species (if they look different, assume they are different species); use the backdrop and posters to help explain your points.
2. Explain that this is what the students will be doing in this activity center. Partner the students and pass out the clipboards. Tell them the differences between Hula Hoops (i.e. shoreline vs. terrestrial, and disturbed vs. undisturbed). They can also count the wildlife and traces of animals (ex scat, left over food, etc.). ****MAKE SURE THEY DON'T TOUCH ANYTHING AS MANY STUDENTS WILL COME TO THIS STATION OVER THREE DAYS****
****Note**** If the students want to count the lake hoop then they must take their shoes off and roll up their pants, or put on rubber boots. They can only go out to their ankles.
3. Give the students 8 minutes to count the species. During the activity roam around helping them count different species and provide overall supervision.
4. Bring them all back to a group and help tally the results. Help the students to draw a few general conclusions (there are more species at the shoreline than on the beach or in the forest). If they can not come up with the answers then explain it to them.
Q: Why might we see a difference in the number of species at the shoreline than in the forest or on the beach?
A: overlapping ecosystems, benefits of a shoreline habitat – the four components of habitat, etc.
5. Facilitate a brainstorming activity about negative human impacts on biodiversity.
Q: do you think it is a good idea to create a beach

everywhere this is water? Why or why not?

A: no, because it's a negative human impact that decreases biodiversity in that habitat by removing vegetation and the natural shoreline.

6. Now, brainstorm for positive human impacts.

Q: what are some positive human impacts that we can have on shoreline ecosystems?

A: use a floating dock instead of a concrete one; plant native vegetation along the shore, etc.

7. Show them the Good/Bad Cottager poster to demonstrate the point.

Q: Why is biodiversity important?

A: It allows for a healthier place for wildlife to live and because everything depends on other creatures to survive.



Background Information

Terrestrial ecosystems have wildlife that lives on land (animals, insects, plants, trees) as well as soil, rocks, etc. An aquatic ecosystem has water-living creatures and plants, such as beavers, fish, nymphs, lily pads, rushes, etc. and mud and rocks holds everything in place. At the shoreline, aquatic and terrestrial ecosystems meet and components of each overlap leading to increased biodiversity (the variation in life within an ecosystem, also a measure of ecosystem health). Shorelines are an ideal habitat for wildlife as they often provide an ideal arrangement of food, water, shelter and space (4 components of habitat). Humans can have a positive or negative impact on shorelines. Putting down sand for a beach, removing shoreline vegetation to make a lawn or installing a concrete dock can all have disastrous effects on a shoreline. Conversely, leaving natural shoreline vegetation, regenerating a shoreline by planting native vegetation or installing floating docks can all protect and enhance shorelines.

Clean Up procedures

Collect the clipboards, charts, and markers and put them in the container

Gather the Hula Hoops and other materials.