

Lesson Plan for “‘Edge of Home’ for Bloomington Wildlife”

Educator Name: Sarah Smith (ssm4@iu.edu)

Lesson Summary: Students will discover the diversity of life that occurs when two habitats conjoin by analyzing aquatic populations in, around, and by a local waterbody.

Setting: Outside near a natural or manmade-but-nature-simulated body of water

Season: Late spring/summer/early fall

Activity Length: 10 minutes

Type of Program: Transition activity between settings (outdoor/indoor or indoor/outdoor) in a field trip to a nature/environmental center

Audience/Number of Participants: One or part of an upper-elementary-level class (of 6-10 students)

Grade/Grade Band: Grade band 3-5

Academic Standard Covered: (NGSS) 3-LS4-3: Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Does this lesson plan partially or completely fulfill the standard? No

How this standard is addressed in this activity: By measuring diversity within and between examples of aquatic and terrestrial ecosystems and applying the concepts of ecotones to their species, students better understand ecotones’ importance to nearby or habituating species.

Additional activities needed to fulfill standard: A homework assignment could be provided after the field trip for a more individualized assessment, with it providing a scenario of another and more expansive water line, such as an ocean shoreline. By giving a few examples of animals living in and out of the water there, students can use characteristics of the habitats and ecotone to construct an evidenced argument for each example organism’s ability to survive well, less well, or not at all in one each of the habitats.

Indiana Environmental Literacy Guideline Strand Alignment: 2: Knowledge of Environmental Processes and Systems

Objective: Students will identify the characteristics of ecotones, or transitional zones, between two wildlife habitats.

Materials:

- 3 8 oz. bottles of hand sanitizer
- 1 box of pencils

- 1 box of disposable surgical-grade masks
- 12 sheets of looseleaf, college-ruled paper
- 12 clipboards

Prep in Advance:

- Email teacher to gauge prior knowledge, interest, and integration into classroom curriculum
- Set up 10 clipboards (with a piece of paper clipped onto the board and a pencil nested in the clip) to be taken to the location in a large plastic tub for convenience

Activity Outline:

- 12:00-12:02 /// Introduction – Introduce self (if necessary) and hand out clipboard sets and masks. Show students the water’s edge, and ask them what is between the ground and the water. Have them briefly contribute ideas of what they think lives there. Tell them that this habitat between two others is called an ecotone. Tell them that the group will be discovering if more, less, or the same number of living things calls this special overlap home. Then, have students form groups of 3 (and help “leftover” students find groups). Then, have them all line up, with groups standing together in the line. Count them off by threes. Tell them that “1’s” will be writing down and tallying the number of different living things they see in the pond; that “2’s” will do this for the plants/animals on the ground closest to the intersection habitat; and that “3’s” will do this for the area of overlap. COVID Precautions: Point out that you have hand sanitizer for anyone who needs it and that you will be setting out more around the area that the group will be investigating (a bottle on each side). Stress that students should be 6 feet apart or mask up when they cannot socially distance.
- 12:03 /// Transition – Let the groups spread out, and tell them that if they do not know what the name of the plant or animal is that they can instead make up a name using a couple of description words (such as a Mallard being a “duck with a green head”). Set a bottle of hand sanitizer on each side of the group as you let them know that any signs of animals that they can find and put a general name to (such as rabbit poop or deer tracks) can also count as an animal sighting. COVID Precautions: Point out that you have hand sanitizer for anyone who needs it and that you have set out more bottles nearby for anyone to use. Stress that students should be 6 feet apart or mask up when they cannot socially distance.
- 12:04-12:07 /// Oversee the student’s recording and facilitate participation. Prompt students to compare observations between habitats. COVID Precautions: (as needed) Point out that you have hand sanitizer for anyone who needs it and that you have set out more bottles nearby for anyone to use. Stress that students should be 6 feet apart or mask up when they cannot socially distance.
- 12:08 /// Transition - Bring students back into the larger group. Extend discussion of species’ habitats, and bring attention to how many can be found in both one of

the main ones and the overlap habitat (which makes it an important part of their ranges). Point out how there are usually more species found in the ecotone than either main habitat in cases of larger ecosystems, such as a marsh between a lake and a park. COVID Precautions: (as needed) Point out that you have hand sanitizer for anyone who needs it and that you have set out more bottles nearby for anyone to use. Stress that students should be 6 feet apart or mask up when they cannot socially distance.

- 12:09-12:10 /// Conclusion – Ask students, based on the group’s findings, which habitat has the most, mid-level, and least diversity. Ask them how that is (prompt them to use specific species as examples). COVID Precautions: (as needed) Point out that you have hand sanitizer for anyone who needs it and that you have set out more bottles nearby for anyone to use. Stress that students should be 6 feet apart or mask up when they cannot socially distance.

Assessment: The concluding discussion would be a shorthand way of gauging student understanding in that it would challenge participants to apply key concepts of the more general demonstration to a specific species in the paradigm.

Suggested Modifications:

- If the COVID-19 cases in the area sharply increase or it would otherwise be a health hazard to proceed in person, an instructional sheet could be sent home to have a guardian facilitate the activity with the child; a picture of each of the child performing the activity and of a completed “tally-sheet” or chart used in the activity would grant the child credit/attendance for the trip day.
- In case of adverse weather, the class will perform a version of the activity using pictures from such an environment on or near the property. Multiple pictures from each habitat will be shown, with students collaborating to find direct or indirect evidence of different organisms’ presences in each.

Lesson adapted from Aquatic WILD’s “Edge of Home” (pgs.119-121)

This lesson plan was an assignment for the course “SPH-O 341: Field Techniques in Environmental Education”, Indiana University – Bloomington