Streamside Critters Animal Lab

Created By: An original Creek Connections activity. Creek Connections, Allegheny College, Meadville, PA 16335. http://creekconnections.allegheny.edu

Grade Level: Basic or intermediate

Duration: Approximately 45 minutes depending on discussion time.

Setting: Classroom or open lab room if possible

Summary: Students observe animal tracks, pelts, and skulls in order to identify physical traits that aid in the animals' survival.

Objectives:
Students will learn about some important physical adaptations of streamside critters, while also learning how to make key observations.

Vocabulary: Stream Ecologist

Materials (Included in Module):
- Animal track sheets (blue)
- Various skulls
- Animal pelts
- Field guides to tracks
- Wildlife Notes

Additional Materials (NOT Included in Module):
None

ACADEMIC STANDARDS: (ENVIRONMENT AND ECOLOGY)

7th Grade
4.1.7.C. Explain the effects of water on the life of organisms in a watershed.
- Describe the life cycle of organisms that depend on water.
4.1.7.D. Explain and describe characteristics of a wetland.
- Recognize the common types of plants and animals.
4.6.7.A. Explain the flows of energy and matter from organism to organism within an ecosystem.
- Describe and explain the adaptations of plants and animals to their environment.
4.6.7.C. Explain how ecosystems change over time.
- Explain how specific organisms may change an ecosystem.
4.7.7.A. Describe diversity of plants and animals in ecosystems.
- Select an ecosystem and describe different plants and animals that live there.
- Identify adaptations in plants and animals.
4.7.7.B. Explain how species of living organisms adapt to their environment.
- Explain how an adaptation is an inherited structure or behavior that helps an organism to survive and reproduce.
- Compare and contrast animals and plants that have very specific survival requirements with those that have more general requirements for survival.

10th Grade
4.1.10.C. Describe the physical characteristics of a stream and determine the types of organisms found in aquatic environments.
- Identify terrestrial and aquatic organisms that live in a watershed.
4.6.10.A. Explain the biotic and abiotic components of an ecosystem and their interaction.
- Examine and explain how organisms modify their environments to sustain their needs.
4.7.10.B. Explain how structure, function and behavior of plants and animals affect their ability to survive.
- Describe an organism's adaptations for survival in its habitat.
- Compare adaptations among species.

BACKGROUND:

Stream ecologists, scientists who study stream ecosystems, must think not only about what conditions and life are present in a stream, but also about the conditions and life around the stream. Much of the animal life found near a stream is dependent on that stream for survival. Thus, it is important for a stream ecologist to be familiar with animals that live near streams.

Some animals like the beaver spend a significant portion of their life in a stream. The beaver has numerous adaptations that aid its existence in the stream. For example the beaver has webbed feet that aid in fast swimming. Beavers also produce and spread water repellant oil. Being familiar with the beaver and how it lives is important because the dams that they build have major effects on stream habitats. For example, the water retained behind a beaver dam will

be slower moving, warmer and more nutrient rich than the waters downstream. This can have both positive and negative effects for other animals, especially for fish and insect species that are living in or around the stream.

There are many other animals living around streams that play major roles in the entire stream ecosystem. Examples include minks, muskrats, raccoons, otters, deer, and even some domestic animals such as cows. All of these animals may feed, defecate, or walk in or around streams; activities that have significant effects on a stream. Animals defecating and urinating in streams is a source of nitrogen and phosphorus input, which can be very useful if a stream is nutrient limited, however in a nutrient saturated stream these can have adverse effects. Animals walking on stream banks loosen the soil, which increases bank erosion and stream channel sedimentation.

Direct observation of these animals around a stream may not always be possible so it is necessary to be able to recognize the signs they leave behind. These signs include tracks, bones, scat and other refuse. All animals leave behind some signs of their passing that can be used to show that they live near a stream.

OVERVIEW:
Students will observe several different animals' tracks, pelts, and skulls.   Based on these observations, students will make inferences about how the various animals live, feed, avoid predators, and carry out other necessary life functions.

PROCEDURE:
Teacher Preparation:
1. Set up three separate lab stations around the room. At station 1, place the two blue sheets with the animal tracks labeled A-E on them. Also put out several of the field guides to tracks.

2. At station 2, set out the four different animal pelts: muskrat, raccoon, beaver, and deer. Also set out the Wildlife Notes for Mink and Muskrat, Beaver, White-tailed Deer, and Raccoon.

3. At station 3, set out the four animal skulls: beaver, otter, raccoon, and cow.

4. Hand out copies of the worksheets to your class.

5. Divide your class into three groups and send one group to each station. Student should need only about 5-7 minutes per station.

6. Rotate the groups around the stations until everyone has visited each station.

Student Experiment or Activity:
In this lab you will be working at three stations. You will spend 5-7 minutes at each station. You will be instructed when to move to the next station. The stations you will visit are tracks, pelts, and skulls. At each station you will have a sheet to complete.

Station 1: Animal tracks
At this station you will see five animal tacks labeled A-E. Identify each track and write the name on your data sheet. There are field guides to assist you. Once you have identified each track look carefully at each one for any special characteristics that aid the animal in movement, feeding, predator avoidance, or other life functions.

Station 2: Animal pelts
At this station you will observe four different animal pelts. Pennsylvania Game Commission Wildlife Notes will be available to assist you in completing your worksheet.

Station 3: Animal skulls
At this station you will see skulls of four different animals: otter, raccoon, deer, and beaver. Handle these carefully; they are fragile. Complete your worksheets by making careful observations of these skulls. Identify the different characteristics of each and explain why the differences are significant.

DISCUSSION:
As a class discuss the answers to the questions on the lab worksheets. *See the answer keys for answers.*

EVALUATION:
- Lab worksheets can be corrected on a graded basis for evaluation.
- Participation in class discussion of the answers may also be used to evaluate the students.

EXTENSIONS AND MODIFICATIONS:
- Have students research other streamside animals. Then have them present to their classmates, highlighting the characteristics that make their animal unique.

NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):