Illinois Wild Mammals

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

BACKGROUND: See the Background Information, especially the Characteristics, Activity Patterns, Feeding, Mobility and Hibernation sections.

OBJECTIVE: Students will use Illinois-specific mammal resources to observe and draw conclusions.

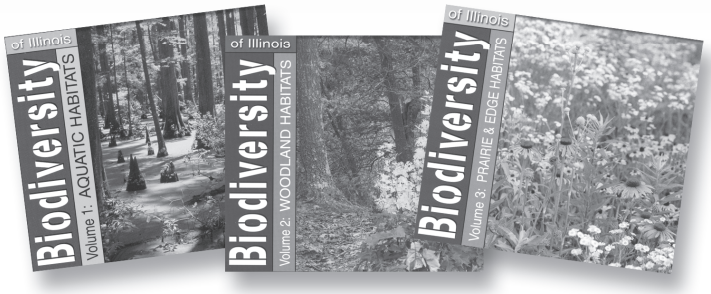
MATERIALS: *Illinois Wild Mammals* resources trunk, *Illinois Wild Mammals* video, *Illinois Wild Mammals* video podcasts, *Illinois Mammals* activity book, *A Year with Wildlife* activity book and SMARTBoard™ activities, *Illinois Wild Mammals* poster, *Illinois Furbearers* poster, *Illinois' Natural Resources Trading Cards* and associated posters

Suggested Activities

Activity 1

- Using the *Illinois' Natural Resources Trading Cards*, have the students separate the cards into groups of their choosing. When they are done, ask them why they grouped the cards in the manner that they did? Answers will vary. You want them to start thinking about related traits in organisms.
- When everyone has contributed to the discussion, mix up the cards and ask the students to separate them this time into three categories: animals, plants and everything else. Now have the students discuss what they looked for when they made the decision to put a card into one of the three piles.
- Take the pile of plants cards and ask the students to separate it into more groups. They may come up with categories like trees, shrubs and flowers or yellow flowers, white flowers and trees. How they define the categories is not important. Looking for similarities is the issue.
- Repeat the process with the animal card pile. If one of their categories is mammals, have them look closely at these organisms. If they did not select a group of mammals, guide the students in finding the mammals in the cards. Talk about what mammals are like. Ask the students to discuss where mammals might live. Ask them what mammals might need to survive.

Activity 2

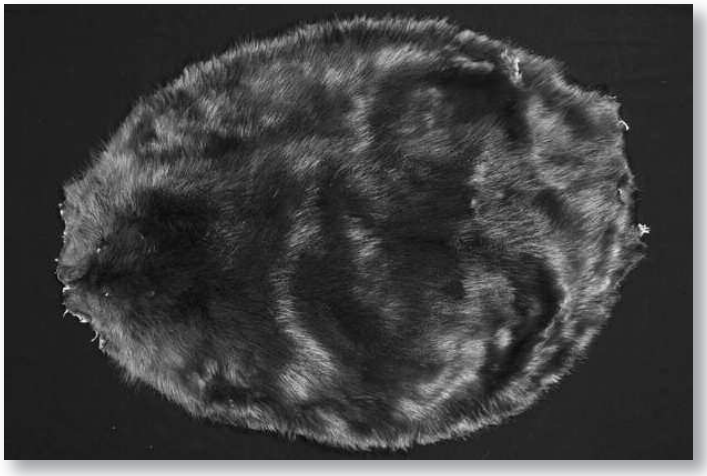


- The *Biodiversity of Illinois* CD-ROM series can be used to show students some of the mammals in Illinois.
- You can also search the CD-ROMs to show students mammals that live in their county. Should you need assistance in operating the CD-ROMs, video podcasts from the IDNR provide guidance for CD-ROM operation, uses and available information. Additional video podcasts and a video provide more information and images of these animals.
- Students should observe the mammals to look for clues as to where they live, what they do, what they look like, when they are active and any other obvious features.
- Field guides included in the resources trunk have pictures of mammals, skulls, tracks, scats and other features for familiarization and reference.

Activity 3

- Inside the resources trunk are several mammal remnants, including skulls. A skull can provide much information about the animal it was a part of. The type of teeth, number of teeth, arrangement of teeth, size of skull and size of the brain case are all characteristics that students can observe and discuss. At this point, don't tell the students the name of the animal associated with each skull.
- Start by asking the students what a skull is and what it might be for.
- Ask them to observe the skulls and separate them into categories of their choice. Once the skulls are separated, ask the students how they determined their categories? Did teeth have anything to do with their category selection? If so, how? If not, ask the students to look closely at the teeth.
- What are teeth for? Have them predict what each of the animals represented might eat based only on the different types and sizes of teeth.
- Show them a photo from the trading cards, CD-ROMs, posters or videos for each of the animals. Can they match the skull to the animal it came from? How did they do it?
- Now have them find out if their feeding predictions were correct. You can use the information in the trading cards, posters, CD-ROMs, activity books and field guides to help. Does the size of the skull relate to what the mammal eats?

Activity 4



- Pelts are the preserved skin and hair of mammals. They can be observed to see the traits of color, hair length, hair type, hair size and other features. The size of the pelt may not be a good trait as sometimes only fragments of an entire pelt are included in the trunk. At this time don't tell the students the name of the animal associated with each pelt.
- Ask the students to separate the pelts into categories they decide upon. Discuss how they made their choices and what each category represents.
- If they didn't use color as a factor, now separate the pelts into categories by color. Does the color of the pelt indicate where the mammal might live or when it might be active?
- See if the students can match each pelt to the animal it came from by using images in the field guides, posters, trading cards, CD-ROMs and other resources.
- Look closely at the different types of hairs on the pelts. What can the students tell you about mammal survival needs by observing the pelts?

Activity 5

- Because of their habits (many are nocturnal, many are small and live in tall grasses, some live underground, etc.), you rarely see some of our mammals, but you can often find what they leave behind. One of the things they leave behind is scat. Scat is solid waste material. It can be used to identify the animal that deposited it. Scat can also tell you some characteristics of that animal. While the scat replicas in the trunk have the correct size, their color is not the same that you would find in nature. Do not tell the students the name of the animal associated with each scat replica at this point.
- Ask the students to separate the scat into categories they decide upon. Ask them how they decided upon the categories?
- If they didn't already do so, now separate the scat by size. Show them a photograph of each animal that produced the scat and have them try to match the scat to the correct animal. Do they see any patterns (size of the scat related to the size of the mammal that produced the scat, size of scat related to what the animal eats or how much the animal eats, etc.)?

Activity 6

- Another sign that mammals leave behind are tracks. Tracks can be observed for size, number of toes, direction the animal was traveling and possibly what the animal was doing. Tracks can also tell you which animal made them. The track replicas in the trunk are actual size, have the correct number of toes and are specific to the animal. At this time, do not tell the students which mammal is associated with each track.
- Ask the students to separate the tracks into categories they decide upon. Once the tracks have been separated, ask them how they determined their categories.
- If they didn't already do so, separate the tracks by size, then by the number of toes. Note: the number of toes on the front foot may be different from the number of toes on the back foot.
- Show them a photograph of the mammals responsible for the tracks and ask them to try to match the track to the animal that made it. Have them explain their answers.
- What do the students think that tracks can tell us about these animals and their survival?

Activity 7

- Hold a discussion to pool the findings from each of the activities. What do the students think these mammals must have to survive? Do all of them need the same items to survive?

STEM Connections: Evaluations

Science: All of the activities shown above are science-based and can be used for evaluations.

Technology: Students can learn to use the *Biodiversity of Illinois* CD-ROMs to access and research information. They can take photos of mammals that they find in their school yard or back yard. They can also participate in Project Squirrel to collect and report data about squirrels in their neighborhood.

Engineering: Students can design their own mammal. It must include all of the necessary traits for its survival, and the students must explain them.

Mathematics: Students can measure skulls and tracks and record the data. They can graph both of these data sets on the same graph and interpret the results. Students can count the teeth in each skull and relate that total to the size of the skull, what the mammal eats and other survival traits.

Training

Additional training about Illinois mammals and on implementing this topic to support performance expectation K-LS1-1 can be obtained through ENTICE (Environment and Nature Training Institute for Conservation Education) workshops from the IDNR. *Tracks, Scats and Habitats, Reading the Signs* and *Illinois Wild Mammals* are examples of related workshops. See the "Resources" page for more information. The Illinois Department of Natural Resources Division of Education also provides training sessions at teacher conferences throughout the state.

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