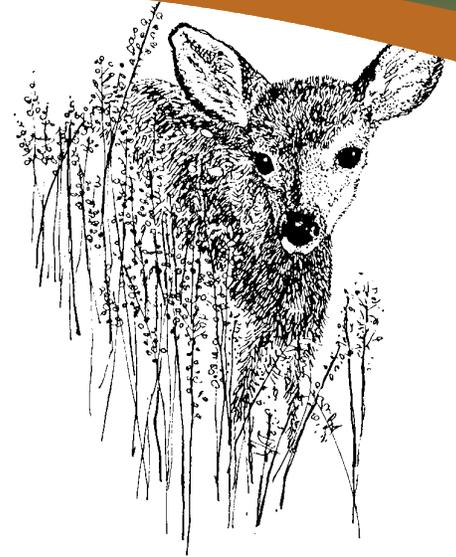


MIDDLE CREEK WILDLIFE MANAGEMENT AREA

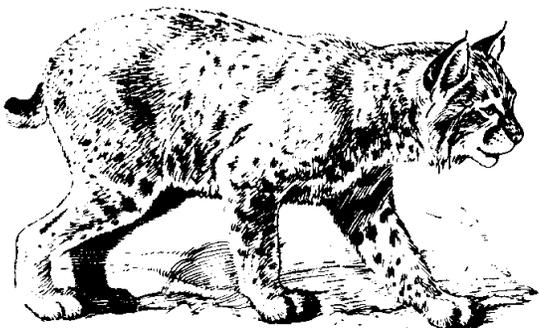


Self-Directed Curriculum



The Nose Knows

adapted from the
International Wildlife Museum
curriculum



Self-Directed Curriculum Kits

- **Connect With Wildlife**

Students compare and identify twelve different Pennsylvania mammals using their pelts and wildlife background information.

- **Decoy Detective**

Students use the decoys to learn about waterfowl identification and divide birds into a diver or puddle duck classification.

- **Feet Are Neat**

Students explain the role of bird feet in bird survival and compare and contrast bird feet adaptations.

- **Let's Wing It**

Students compare and identify the different types of flight feathers that make up a bird's wing.

- **Scatology**

Students create fake animal scat and learn to identify an animal by its droppings.

- **Skull King**

Students infer from a skull what classification and niche the animal inhabits.

- **The Nose Knows**

Students identify different food smells and will compare the ability to distinguish different smells to animals using their sense of smell to find mates, offspring and food.

- **Wildlife Tracks**

Students use a variety of methods to observe, identify, collect and document tracks of different common wildlife species in Pennsylvania.

THE NOSE KNOWS - Teacher's Page

from *International Wildlife Museum* curriculum

Objective:

Students will identify different food smells. Students will compare the ability to distinguish different smells to animals using their sense of smell to find mates, offspring and food.

Materials Needed:

- Box of labeled film canisters containing cotton balls with household scents and answer key.

Background:

Smell is the most important sense for most mammals. They use their noses to:

1. Detect predators or prey
2. Distinguish between family & non-family members
3. Find mates
4. Recognize their territories

Smell is also important for other reasons. For example, most male mammals can tell if a female is ready to mate by detecting a certain odor she gives off. Many mammals mark their territories with urine or feces and special scents from anal glands or glands in their feet or other parts of their bodies. Some animals rub against each other to create a "herd smell." When most mammals meet, they identify each other by sniffing.

Deep inside a mammal's nose is an area called the olfactory region. This region has lots of "smelling" nerves. When people or other mammals breathe air through their noses, odors in the air "turn on" these special smelling nerves. Biologists are unsure how the brain identifies the different odors, but they do know that mammals can distinguish among thousands.

Activities:

Activity 1:

1. Have students sit in a circle.
2. Pass containers around.
3. Give students a chance to smell what is in each container and try to identify each smell.

Activity 2:

1. Split the group in half.
2. The first half of the group are the "female parents." Hand them each a container and give them time to "learn" their smell. Have them keep the covers to their smell.
3. Collect the containers and hand them out to the second half of the group. They will be the "offspring." Have them move to the other side of the room, stand in a line, holding their containers out in front of them.
4. Have the female parents walk down the offspring line, and try to find their offspring by smelling the containers.
5. When the parent identifies their offspring by smell, they can compare the labels on the containers and lids to see if they match.

The Nose Knows Activity Key

- | | |
|---------------|---------------|
| 1. Peach | A. Cherry |
| 2. Coconut | B. Banana |
| 3. Grape | C. Lemon |
| 4. Peppermint | D. Mint |
| 5. Root Beer | E. Butter |
| 6. Orange | F. Vinegar |
| 7. Strawberry | G. Vanilla |
| 8. Maple | H. Watermelon |
| 9. Cinnamon | I. Cocoa |

The Nose Knows

Objective:

The student will understand the importance of the sense of smell to animals.

Background:

Smell is the most important sense for most mammals. They use their noses to detect predators or prey, to distinguish between family and non-family members, to find mates, and to recognize their territories and those of other mammals. Smell is also important for other reasons. For example, most male mammals can tell if a female is ready to mate by detecting a certain odor she gives off. Many mammals mark their territories with urine or feces and special scents from anal glands or glands in their feet or other parts of their bodies. Some animals, such as the peccary (javelina) also rub against each other to create a "herd smell." When most mammals meet, they identify each other by sniffing.

Deep inside a mammal's nose is an area called the olfactory (ol-FAC-tor-ee) region. The olfactory region has lots of "smelling" nerves. When people or other mammals breathe air through their noses, odors in the air "turn on" these special smelling nerves. Biologists are unsure how the brain identifies the different odors, but they do know that mammals can distinguish among thousands.

Grade level: K-6

Materials: Empty film containers with cotton balls saturated with different scents.

Time required: 30 minutes

Structure: Whole group, indoor.

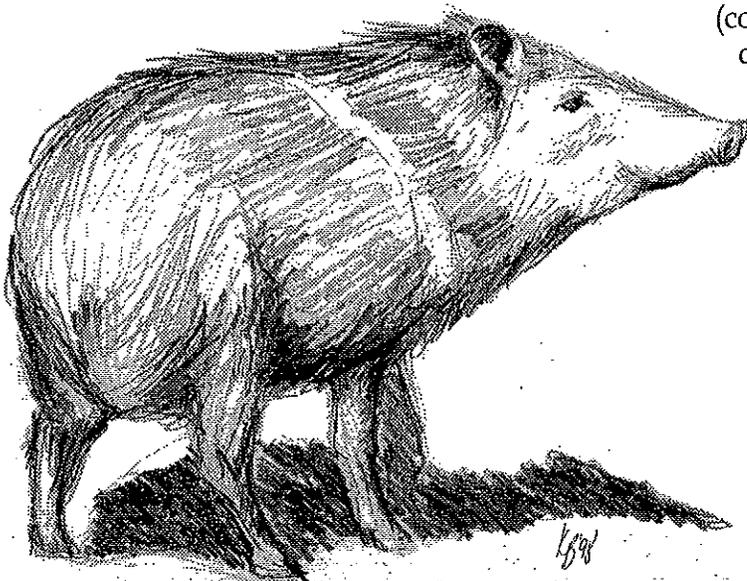
Source: Nature Scope—Amazing Mammals.

Skills: Science, social studies.

Procedure:

Activity 1:

1. Soak each cotton ball in a different scent (such as peppermint, lemon, orange, maple, vanilla, vinegar, coconut, root beer, chocolate, or cinnamon) and put each one in a different canister.
2. Have the students sit in a circle. Pass each container around one at a time.
3. After everyone has had a chance to smell what is in a particular container, talk about what the smell was before passing around the next container.
4. Discuss how mammals are able to identify thousands of smells. Ask what would happen if a wild animal failed to recognize a particular odor (could get killed by a predator, lose a chance to catch a meal, mistake an intruder for a relative, eat food that is rotten, etc.)



Activity 2:

1. Have 3 or 4 containers. Number them on the cover and on the bottom.
2. Pass the containers out to 3 or 4 students. These will be the "female parents." Let the female parents "learn" their smell. Collect the containers. They may keep the covers.
3. Mix up the containers and pass out to 3 or 4 other students. These will be the "offspring." Have them move to the other side of the room with the containers.
4. The female parents will then try to find their offspring by smelling the containers.
5. Have female parents and offspring check their numbers to see if they are correct.

Discussion:

1. Ask the students how they were able to detect their offspring's smell and how animals use this sense.
2. Ask how animal parents (pairs) in the wild can tell their offspring at a distance.
3. Why is the sense of smell important to both predator and prey?

Closure:

Have students describe how animals use the sense of smell to identify family members, predators and prey.

Extensions:

1. Write down specific information about an animal on a series of cards (one card for range, one for description, one for niche, etc.) Glue a cotton ball on each card. Then soak the cotton balls with a smell and put all the cards for one animal in a baggie to absorb the smell. Repeat for other animals.
2. Spread out similar cards in different areas. (All the range cards will go on one table, the description cards on another table, and the niche cards on another.)
3. Divide the class into as many groups as you have animals. Have each group choose one card from the first table and then try to find its next card from the next table, etc. The last table will have the name and picture of the animal.
4. The group must then check if all the cards are related to that animal.

