

# The *Nature* of Teaching

## • UNIT 4 • Mammals and Ecosystems

*Mammalian examples can be used to describe how living things function and interact with one another within different ecosystems.*



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# Unit 4 • Overview

## Estimated Time

Three 30–45 minute class sessions

## Vocabulary

- Carnivore
- Ecosystem
- Environment
- Habitat
- Herbivore
- Mammal
- Niche
- Omnivore
- Predator
- Prey

## Unit Objectives

Students will be able to:

- Give the definition for a mammal.
- Explain the characteristics of a mammal.
- Know what animals will live in a particular ecosystem.
- Have knowledge of the animals that live in different ecosystems found in Indiana.
- Make a paper ecosystem with animals in small groups.
- Draw animals to one-tenth scale.
- Make a PowerPoint presentation about an assigned ecosystem.

## Reference Materials

- *Common Indiana Mammals* (FNR-413-W)
- Science book, teacher edition
- Mammal books from the library

## Targeted Grade-Level Indiana Standards

*K–5 Science Standards*

1.1.1, 1.1.4, 1.4.3, 1.4.4

2.1.2, 2.1.5, 2.1.6, 2.2.5, 2.4.1, 2.4.2, 2.4.3, 2.4.4

3.1.5, 3.2.4, 3.2.5, 3.2.6, 3.4.1, 3.4.2

4.4.3

5.4.4, 5.4.5, 5.4.7

*K–5 Language Standards*

5.4.3, 5.4.5, 5.5.3

*K–5 Math Standards*

5.4.1

## Required Materials

- Mammals Introduction (PowerPoint available from [www.purdue.edu/nature](http://www.purdue.edu/nature))
- Rubric for Mammal Ecosystems and Research Form (included)
- Roll of butcher paper for habitat
- Paper for mammal drawings
- Crayons
- Markers
- Pencils
- Mammal skins
- Mammal skulls
- Ruler
- *About Mammals: A Guide for Children* by Cathryn Sill
- Information about mammals that would be helpful to students
- Computers (if doing PowerPoint presentations)

# Lesson 1: Mammal Facts

## DAY 1

Introduce the topic of mammals to students. Get students interested in researching mammals that live in nearby ecosystems.

### Procedure

1. Gather students together to grab their attention about mammals and their upcoming project. Share the Mammals Introduction PowerPoint with students. Be sure to point out important vocabulary with definitions to students. This new vocabulary will be important as students begin their projects.
2. After sharing the PowerPoint with students, be sure to review and discuss the vocabulary terms with students. Have students record new vocabulary in their “Vocabulary Notebooks.”
3. Explain the assignment, and pass out rubrics. Students will be divided into groups of 4–5 students. Assign a different ecosystem for groups to research. (See Rubric for Mammal Ecosystem Species Project for full instructions and assignment details.)

3. Remind students of the objectives for the project. Use today as a research day only. Take students to the computer lab to research their ecosystems. Also, ask the librarians to allow students to look for books about their ecosystems. Teachers should be monitoring research done by students. Be sure that students are finding information that is factual and not opinion-based.

Research appropriate websites ahead of time and suggest students begin their research on those sites. Here are two you might use.

[www.in.gov/dnr/fishwild/2356.htm](http://www.in.gov/dnr/fishwild/2356.htm)  
[www.in.gov/idem/4138.htm](http://www.in.gov/idem/4138.htm)  
[www.goshen.edu/eeai](http://www.goshen.edu/eeai)

4. Encourage students to take notes on the research information they are finding in books and on the Web. They should use their rubrics as they take notes to ensure they are getting the correct information. Also have students record important information on their Research Form.

## DAYS 2 & 3

Students begin gathering information for their projects. Teachers help get students motivated and give them plenty of time to do research on the computer and in the library.

### Procedure

1. Review “Day One” information by reviewing facts, vocabulary, and characteristics of mammals. Pass out the Rubric for Mammal Ecosystem Species Project and Research Form sheet.
2. Play a game deciding what mammals from a list of several can be found in Indiana. If you are using a SMART Board or similar technology, putting names of mammals in the Vortex Game is an easy way to classify mammal species that live in Indiana.

## DAYS 4 & 5

Students begin putting together their “paper animal ecosystems.” Students draw and measure animals for their projects.

### Procedure

1. Students are given materials for drawing their projects (butcher paper, drawing paper, crayons, markers, pencils). It would probably work best for students to begin by drawing and designing the ecosystems. After the ecosystem background is complete, students are ready to add the mammals. They should be prepared to sketch, measure, cut, and paste animals into their ecosystems. Have the students refer to reference materials (e.g., mammal skins, skulls, and information

from the Common Indiana Mammals publication) for the actual size of animals within their ecosystem. For best results, students should draw animals to one-tenth scale (this makes a more realistic ecosystem). Have students divide the lengths of animals listed Common Indiana Mammals by 10 to attain scaled lengths. For students in grades K–3, the teacher may need to provide these modified measurements.

2. Allow students enough time to work on their “paper ecosystems.”

## DAY 6

Students present their projects to their classmates and share facts they have learned. If students are not making PowerPoint presentations, this will be the final day of this unit.

### Procedures

1. Have each group of students come to the front of the room to present its ecosystem. Make sure that each student participates in the presentation.

# Lesson 2: Advanced Optional Activities

## DAY 7 to 8

Students use the facts they have gathered to complete a PowerPoint presentation to share with their classmates on our SMART Board.

### Procedures

1. Give students time in the computer lab to design and make a PowerPoint presentation using the Rubric for PowerPoint Presentations. Students should have already collected the information they need for the PowerPoint.

## DAY 10

Students will present their PowerPoint presentations for their classmates.

### Procedures

1. Students should present in front of their classmates. Make sure that each student presents at least one aspect of the group project.
2. Consider sharing these presentations with younger students, such as Reading Buddies.
3. Wrap up the Mammals and Ecosystems unit. Give students time to discuss and reflect upon their hard work.



## Rubric for Mammal Ecosystem Species Project

Name: \_\_\_\_\_ # \_\_\_\_\_ Date: \_\_\_\_\_

Assigned Ecosystem: \_\_\_\_\_

Five (5) animals (minimum) that live in or use your ecosystem . . . . .	20 Points
Appropriate background/habitat for your mammals . . . . .	10 Points
Mammals drawn to scale, based on average size . . . . .	10 Points
Project turned in on time . . . . .	5 Points
Group participation during work time and presentation . . . . .	5 Points
<i>Total Points Possible</i> . . . . .	<u>50 Points</u>

### Research Form

ANIMALS	HABITAT	SIZE	DIET

***If you have questions about your assignment, be sure to ask.***

## Rubric for Mammal Ecosystem PowerPoint Presentation (Optional)

Name: \_\_\_\_\_ # \_\_\_\_\_ Date: \_\_\_\_\_

Assigned Ecosystem: \_\_\_\_\_

Five (minimum) important facts about your mammals . . . . .	20 Points
Description of your ecosystem . . . . .	10 Points
Photos of your mammals . . . . .	5 Points
Project turned in on time . . . . .	5 Points
Overall look and detail in PowerPoint . . . . .	5 Points
Group participation during work time and presentation . . . . .	5 Points
<i>Total Points Possible</i> . . . . .	<u>50 Points</u>

***If you have questions about your assignment, be sure to ask.***