Who's Been Here?

Student Objectives:

- Identify the specific needs of organisms.
- Observe structures of an organism and determine how those structure help an organism meet its needs.
- Identify the physical characteristics of an environment and determine what types of animals could live in that environment.
- Represent an organism and its environment through pictures and words.
- Communicate conclusions based on evidence and research.

Safety

On Day 2 students will be observing an area outside. Preview the area before hand, noting what types of plants and organisms are in the area and if all of your students can access the area safely. If you find biting/stinging animals or plants students are allergic to, these organisms are still OK to observe. But check with your nurse to see if any students are allergic to these organisms and demonstrate to students how they should observe these organisms safely. (If there is an ant pile, they should not dig; if there is a wasp nest, they should not touch the area).

Materials

For this lesson you will need

- In the Woods: Who's Been Here by Lindsay Barrett
- The Salamander Room by Anne Mazer
- Chart paper and markers
- An area outside for students to observe
- A tool to help students create a boundary for observations (yarn, hoops, poster board, cones)
- Tools for observation: hand lens, tool for digging (spoon), camera, thermometer
- What Lives Near Our School (one per student)
- Animal Research Data Sheet (one per group)
- Pictures of suggested animals
- Resources for students to conduct research on selected animals

Procedures

Day 1
Project Launch

This is the launch day. By the end of the launch day students should have a good understanding of the driving question and what they will be expected to complete for their final project. Completing a Knows and Needs to Know chart is a helpful way to determine what the students think they know and what types of questions they have about the project. You may have another procedure for eliciting background knowledge and interests of students that you are more comfortable using. Use this and other formatives to help guide the instruction for your students this week. There is flexibility in the unit. Address your students' needs in a way that will help them be successful. The Driving Question and Knows/Need to Knows should be reviewed each day.

Anchor Event—Read *In the Woods: Who's Been Here*

Driving Question: What are ways you can determine what animals live in your neighborhood?

The Final Product—Create a class book *In Our Neighborhood: Who's Been Here*

Introduce the project

1. Read the *In the Woods: Who's Been Here* book.
2. Introduce the driving question.
3. Challenge the students with the Final Product.
4. Divide the students into groups of three.
5. In their groups of three have them discuss what they think they know and what they think they will need to Know.
6. As a class create a Knows and Needs to Knows Chart
   Keep the chart on display throughout the unit and refer back to the chart daily.
7. After you do the chart check if there are any of the "Need to Know" questions that can be answered by other students in the class.

Day 2
Learn about local habitats

Students should be able to choose a place to observe organisms within reason. Give students options that are safe and accessible. Students usually associate large animals as the only animals to observe and may forget about smaller animals such as beetles, butterflies and crickets. Students should be given some type of tool to mark their area and create a boundary. Students should observe the area inside their boundary, which includes any space above the ground; i.e. if a butterfly is found flying in their space, they should observe the butterfly. They can move things around and dig in the area (looking under rocks or digging in the ground) as long as it is done safely.

1. Remind students of the driving question: "What are ways you can determine what animals live in your neighborhood?"
2. Review Knows and Need To Knows—Remind students we hope to move some of the Need to Knows over to the Knows side today.
3. As the students are walking to the designated area, periodically stop and ask students what evidence they observe (sight, sound, smell) that might suggest an animal recently visited (nest, scat, prints, body covering).
4. Have each group of students choose an area on your campus they want to investigate, based on ability to supervise the different areas. (Suggestions: tree, flowerbed, playground, grassy area, area near building, area near fence line, area near tree).
5. Tell students they will be observing an area outside and documenting what they observe.
6. Ask students to bring pencil, paper, thermometer, and hand lens to record.
7. Complete the "What is Living Outdoors" lab.
8. Come back in the class and review with the students what they saw during the lab "What is Living Outdoors?"
9. Review Knows and Need To Knows.

Day 3
Choice of Animals

The Driving Question and Knows/Need to Knows should be used to help guide your instruction. *The Salamander Room* is read to your students to help the students to think about animals' needs and realize that each kind of animal has specific needs. Emphasize the needs of the salamander as you read the book. When the students choose an animal that could live in their neighborhood give them some pictures to choose from. Make sure the pictures are detailed enough that they can determine anatomical features and characteristics of the organism. They will need to be able to tell how many legs their organism has or if their organism has claws.

1. Remind students of the driving question: "What are ways you can determine what animals live in your neighborhood"
2. Review Knows and Need To Knows—Remind students we hope to move some of the Need to Knows over to the Knows side today.
3. Read *The Salamander Room* to the entire class.
4. In the students groups have them pick an organism from the pictures supplied by the teacher that they want to research for the class book. What are the physical characteristics of your organisms? Does it have claws, beaks, tails, type of body covering, shape and number of legs, etc.
5. As a group the students will hypothesize what their animal needs to survive.
6. Review Knows and Need To Knows.

Day 4
Habitat Research

A supplemental book for this point of the unit is to read *Cactus Hotel*. There is not time in your science class today to read the book. Today is a research day. Your students can conduct research from resources supplied by you or open resources.

1. Remind students of the driving question: "What are ways you can determine what animals live in your neighborhood"
2. Review Knows and Need To Knows—Remind students we hope to move some of the Need to Knows over to the Knows side today.
3. Students will get back into their groups to begin researching the needs and characteristics of their animals. As they are researching the organism have them complete the data sheet.
4. Review Knows and Need To Knows.

Day 5
Create page for class book

Before allowing students to work in their groups, take a minute to review the Driving Question and the Knows/Need to Knows chart. At this point there should be very little on the Need to Knows side of the chart. The students should have an opportunity to share their page with other groups and make additions or corrections if needed. Because having a public audience is so important to the PBL process, you should find an appropriate way for students to share what they have created with another audience. One suggestion could be to allow a few students from each group to read the entire book to different audiences until all students have had an opportunity to share.

1. Remind students of the driving question: "What are ways you can determine what animals live in your neighborhood"
2. Review Knows and Need To Knows—Remind students we hope to move some of the Need to Knows over to the Knows side today.
3. Using information about your animal from your research, create your book pages.
4. Toward the end of the lesson time, students should have an opportunity to share the pages they have created with another group.

Additional Documents

- What Lives Near Our School
- Animal Research Data Sheet
- http://www.symbaloo.com/mix/linkstoresearchanimals

Additional Book Recommendations

- Who Pooped in the Park? Big Bend National Park: Scat and Tracks for Kids by Gary F. Robson
- Cactus Hotel by Brenda Z. Guiberson and Megan Lloyd

Name _____

What Lives Near Our School?

- Pick a place in our schoolyard to observe.
- Observe your area for five minutes. Record anything living. You may use your pencil to dig into the ground.
- Record the environment of your area. You may use pictures and words to describe your observations.

Living Things	Physical Environment

Temperature: _____

Amount of Light: Sunny Partly Shady Shady Dark

Name _____

Animal Research Data Sheet

We are researching _____.

Our animal lives in _____.

The physical characteristics of our animal's habitat are _____

_____

_____.

Our animal eats _____

_____.

Name _____

Animal Research Data Sheet

Our animal will get water in its habitat from _____

_____.

Our animal uses _____ for shelter.

What structures does our animal have to help it function in its environment?

_____

_____

_____

Name _____

Animal Research Data Sheet

What evidence or clues would our animal leave behind in our neighborhood?

_____

_____

_____

_____.

We got our information from:

Who's Been Here

Mann & Pynes

Name _____

Animal Research Data Sheet