

GROWING, GROWING, GONE

4-5TH GRADE
SCIENCE, LANGUAGE ARTS,
PHYSICAL EDUCATION

Learning Goals: Students are able to identify threats facing lemurs and analyze positive solutions for these threats.

Students will be able to:

- Identify two threats to lemurs in the wild
- Experience and demonstrate how changes to an environment can affect the survival of an animal
- Analyze positive solutions that will help protect lemur populations

LESSON DESCRIPTION

Students discuss current challenges that threaten lemurs. Through an active game they discover that as a result of taking positive actions people have the ability to protect wildlife habitat for future generations.

Materials needed:

- Large open area (gym or playground)
- 12 Hula Hoops or circles made from string
- List of scenarios
- Clipboard, paper/pen or, if the game is done in a gymnasium, a flip chart for recording data

30 MIN

EXPLORING LEMUR HABITATS

SETUP

Set it up by evenly spacing hula hoops or circles of string within a larger playing area (field, playground or gym.)

ACTIVITY

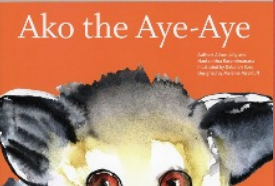
1. Read *Ako the Aye-Aye* or have students read it independently.
2. Explain to the students that they are going to become lemurs. Remind them to pay close attention to what happens during each phase of the game. Students start the game by standing inside their own string hoop (or hula hoop). The circle represents their habitat.

FOR BACKGROUND
INFORMATION SEE:

EXPLORING LEMUR HABITATS

*MADAGASCAR'S PEOPLE
AND PLACES*

*MAKING A DIFFERENCE
FOR LEMURS*



FEATURED BOOK:
AKO THE AYE-AYE

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3. Each “lemur” (student) must have at least one foot fully in a hoop at the end of each round to be safe. However, if only one foot is inside the hoop then that lemur is considered endangered. Sharing a habitat is allowed and encouraged, but no more than 2½ people (two people and one person with one foot inside) are allowed per hoop.
4. Read the scenarios below as participants walk around the circle of hoops passing through each hoop as they go along.
5. When the leader shouts “habitat!”, participants should jump into the nearest habitat/hoop. After the scenario has been read, the leader will either remove or add a hoop to the circle. If there are no hoops available for the students to put at least one foot into, they have lost their home and are out of the game.
6. Follow the instructions on the scenario sheet and adjust the hoops accordingly. Note, at the beginning of the game you will be removing hoops. However, half way through the game you will be adding hoops back into the circle so participants that may have lost their habitat will be able to rejoin the game.

SCENARIOS

Start everyone walking and read each scenario.

Scenario #1. Announce: "More people are moving into the community, so more firewood is being collected from the forest." Remove two circles, then call out "Find a Habitat." Ask: How many lemurs couldn't find a habitat? Why? Students should conclude: less food and cover for lemurs. Record data and start everyone walking around again.

ANALYTICAL WRITING

Think about the threats lemurs face in their natural habitats. Select one of these threats and develop a plan to solve or change it. How will this change impact their ability to survive?

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Scenario #2. Announce: "The tropical hardwood trees in this forest are in demand to make furniture. Loggers begin to harvest the trees." Remove a circle. Then say, "Without the trees to hold the soil in place, the water becomes muddy and contaminated." Remove another circle. Then call out "Find a habitat." Ask students to interpret the results, record data, then start them walking around again.

Scenario #3. Announce: "People living in this area decide to replace the forest with farmland." (Remove two more circles), then call out "Find a Habitat." Record data. Ask: How is our lemur population doing now? Those of you who found a habitat, was it more difficult? Is the habitat as comfortable for you as it was in the beginning of the game? Start the students walking again.

Scenario #4. Announce: " A new village is being built near the forest. People cut down trees for construction materials" Remove two circles. Call out "Find a Habitat." Have students observe the results, record data, then continue. (At this point a student who was eliminated can probably help record data)

Scenario #5. Announce: "Farmers who raise cattle cut and burn sections of the forest to create grassland." Remove two more circles, then call out "Find a Habitat." Ask: How many lemurs have been lost? How many are endangered? What will the result be if this trend continues? (Lemurs may become extinct or be forced to move to other areas where they will compete with other lemurs for the same habitat. Lemurs may be forced into areas where they will have too much close contact with humans, introducing them to new threats). Let students discuss for a minute, then continue the game.

Scenario #6. Announce: "People learn that lemurs help pollinate plants and disperse seeds. They then try using rocket stoves that use less wood for fuel." Give back one circle, and have students stop walking and find a habitat. Record data, then continue the game.

Scenario #7. Announce "A group of children participated in a project to plant trees along the stream and now the roots from the trees help hold the soil in place." Ask: How will this affect the habitat? (Students

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should remember that in the previous scenario runoff made the water muddy) Ask: What will happen now? Students should suggest putting back a circle. Continue the game and have the students start walking around again.

Scenario #8. Announce: "Instead of selling the trees for lumber, the community decides to offer eco-tours through the forest to earn money." Add a circle back and ask the students to find a habitat. Record data. Ask: How are things going now? Are things getting better for lemurs? What else can be done? Ask students to think back to the previous scenarios to see if you can elicit a discussion of farming. What if the farmers leave corridors of forest between farmlands instead of cutting and burning everything? Add two circles and start everyone walking again.

Scenario #9. Announce "Farmers still have cattle to raise." Ask: What can they do instead of clearing the forest for pasture? If they are stuck, ask, can we move the cattle to different land and replant trees? Give two circles back, ask the remainder of students left to join and ask all students to find a habitat. Record data.

WRAP-UP

In the classroom, discuss the threats facing aye-ayes and other lemur species. Use the information in the Educator's Guide to help direct the discussion. Threats include loss of habitat due to agriculture, grazing, logging and land development. For example, to discuss the challenges of encroaching human populations you might want to ask: As more land is developed for people, what happens to habitat for lemurs?

After the game is over, chart the data collected on the board. Ask: What does the data tell us about the effect of each scenario on the lemur populations? Which changes had the greatest effect? What were some of the threats that you (the lemurs) encountered during the game? For those of you who stayed in

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the game, how did the changes affect you? Was it stressful? Do the changes in the wild happen as fast as they did in the game? How do you think it might be different? Is it possible for changes to happen without anyone noticing the effect on the lemurs? What were some of the ways people found to compromise between their needs and the needs of the lemurs?

ZOO EXTENSION

Modern zoos strive to provide their animals with everything they need to live healthy enriched lives. During your zoo trip, have students observe animals in their zoo habitats. Do these habitats offer all the elements needed for survival? How is the zoo habitat similar to the animals' wild habitat? How is it different? Pay close attention to elements such as shelter (look for a door into a building or hide structure), and food and water. Older students can compare and contrast zoo habitats across taxa (how carnivores are managed vs. primates, etc.)

OUTDOOR EXTENSION

Explore your schoolyard or local park. Identify the native wildlife that lives in your area and their habitat needs. Identify any human-caused threats and determine what positive actions could be taken to reduce these threats. Create a schoolyard habitat for birds or butterflies.

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EVALUATION

Have students research a local threatened species, then have them write a report or create a display that highlights how habitat destruction affects this species and what positive actions can be done to help local wildlife affected by habitat loss.

THIS ACTIVITY MEETS THE FOLLOWING NATIONAL AND FLORIDA EDUCATION STANDARDS

FLORIDA STATE STANDARDS

4th Grade Science

SC.35.CS-CP.1.3
SC.35.CS-CS.1.1
SC.4.L.17.4
SC.4.N.1.1

5th Grade Science

SC.35.CS-CP.1.3
SC.5.L.15.1
SC.5.L.17.1
SC.5.N.2.1

4th Grade Physical Education

PE.4.M.1.1

5th Grade Physical Education

PE.5.M.1.1

4th Grade Language Arts

LAFS.4.RI.1.1
LAFS.4.RI.1.3

5th Grade Language Arts

LAFS.5.RI.1.1
LAFS.5.RI.1.3

NATIONAL SCIENCE STANDARDS

4th Grade

Characteristics of organisms
Transfer of energy (food chains)
Life cycles of organisms
Organisms and environments
Characteristics and changes in populations
Changes in environments

5th Grade

National Science Standards
Populations and ecosystems
Populations, resources and environments
Natural Hazards
Risks and Benefits
Evolution and Equilibrium (adapting to environmental changes)
Transfer of Energy (Food Chains)

NEXT GENERATION NATIONAL SCIENCE STANDARDS

4th grade: Structure, Function and Information Processing (4-LS1-1)
Middle School: Ecosystems: Interactions, Energy, and Dynamics (MS-LS2-1, MS-LS2-4)

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