

HOME SWEET HABITAT

2-3RD GRADE
SCIENCE, PHYSICAL EDUCATION, MATH

Learning Goals: Students will know the four habitat elements (food, water, shelter, and space to raise young) and be able to identify how changes in these elements impact lemur populations.

Students will be able to:

- Identify the four habitat requirements that lemurs and other living things need to survive (food, water, shelter and space)
- Demonstrate how fluctuations in these elements shape animal populations
- Graph the fluctuations in a lemur population

LESSON DESCRIPTION

Students read one of the featured books, review the accompanying poster and discuss the habitat elements described in each. They then play a game that demonstrates the importance of food, water, shelter and space on an animal's survival and how changes in these elements affect animal populations. In the math extension they graph the changes in population due to changes in habitat.

- Create pictures showing human and lemur habitat requirements

Materials needed:

- Large open area (field or playground)
- Masking tape and chalk or rope to establish a line in the game area
- Colored pencils, crayons, or markers
- Graphing Activity Sheet (Math Extension)
- A piece of paper, pencil and clipboard
(for leader to collect data during the game)

1 HOUR

EXPLORING LEMUR HABITATS

SETUP

Divide an open field or playground in half. Use masking tape, rope, sidewalk chalk or existing lines to create two parallel lines approximately 50 feet apart.

If the class is completing the math (graphing) extension, make copies of the worksheets. This will be used to graph the data collected during the game. Gather a piece of paper, pen/pencil and clipboard. This will be used by the leader to collect the data during the game.

FOR BACKGROUND INFORMATION SEE:
EXPLORING LEMUR HABITATS



FEATURED BOOKS:
NO-SONG THE INDRIS
BITIKA THE MOUSE LEMUR
BOUNCE THE SIFAKA
FURRY AND FUZZY

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DISCUSSION

1. Ask the students what types of requirements they need to survive (i.e. food, water, shelter and space to raise young). Ask them to explain the difference between a “need” such as water and a “want” such as soda.
2. Next, choose one of the featured books (*Bitika the Mouse Lemur, No-song the Indri, Fuzzy and Furry the Red-Ruffed Twins, Bounce the White Sifaka*) and accompanying poster for students to read and review for habitat elements. As they read, ask them to list any habitat elements that are described or pictured in the book and/or poster. This will prepare them for the class discussion to follow.
3. As a class and using their habitat element lists to guide them, ask students to brainstorm what they think lemurs need to survive. Record their responses on the board.
4. Explain that when habitat elements are reduced or increase it can affect the number of animals that can survive in an area. For instance, if many of the trees died in a forest inhabited by lemurs they would have less food (fruit, flowers and seeds) and less cover from sun, rain, wind and other animals. How could this affect their numbers? Record their responses but don’t tell them the answer yet. Instead tell them they are going to participate in a game and see if they can discover it.

ACTIVITY

1. To play the game, divide students into two smaller, equal sized groups. One group will be lemurs; the other group will be habitat components (food, water, and shelter).
2. Have the groups stand at opposite ends behind the lines.

ANALYTICAL WRITING

What would happen to a lemur if one or more of the things needed to survive were removed? How can we help lemur habitats survive?

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ACTIVITY CONTINUED

3. To recognize habitat components, the students should use hand motions to describe which component they are or which component they need. For food, students should place both hands over their stomach. For water, students should hold two fingers to their lips. For shelter, students should hold their hands up over their head with fingers spread like tree branches. Demonstrate each of these to the class.
4. Have both groups turn around so they are facing away from each other. Each habitat should choose which component they are going to be. Each member of the lemur group should decide what component they need. Have each person make the hand motion to describe their habitat component. The leader should record the number of lemurs before beginning the game.
5. Have both groups turn around and start the game on the count of three. Students should try to find their matching habitat element as quickly as possible in order to survive. Pairs should only include one person from the lemur group and one person from the habitat components group (each with matching habitat components). The habitat person can only support one lemur, so if two or more lemurs try to pair with the same habitat person, only the first one to reach the habitat person survives. The other must find another match. NOTE: Students may change their habitat component at the beginning of each round, but may not change once the round is in play.
6. Once someone from the lemur group finds his/her habitat match, they should pair up and walk back behind the lemur line. Since this lemur has found its survival need, it will be able to live and reproduce. The person who was the habitat match will now become a lemur.
7. Any lemur that is not able to find their needed habitat requirement will not survive and will become a habitat component, returning nutrients back into the environment. This person should move to the other side of the field, behind the habitat line.

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8. Once all students have returned to their appropriate sides, record the number of lemurs remaining.

9. Repeat steps 5-9. Be sure to record the number of lemurs that remain at the beginning and end of each round. About 10-15 rounds of the game will provide enough data on how the lemur population changes as habitat fluctuates.

WRAP-UP

After completing the activity, discuss the findings by listing the data on the board. Lead a discussion with the participants on what they observed and did during the game. They should be able to discuss what lemurs need to survive and how these elements work as limiting factors that affect their survival. They should recognize that the habitat and the population are both dynamic. You may want to use the following points or questions to encourage further discussion:

- What did you learn about the needs of lemurs during the lesson?
- How are the habitat requirements of people similar to those of lemurs? How are they different?
- Give some examples of what happened to the lemur population during the game. Was the result what you expected before you played?
- How did you feel as a lemur if your habitat requirements were not available?
- Describe how the number of habitat elements and the number of lemurs changed during the game. How are the numbers related to each other?
- What happens when one species, for example, humans, uses a lot of one habitat element (space or trees for example) that is shared by other animals?

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MATH EXTENSION

After the game, you may choose to have students graph the recorded data by plotting the lemur numbers against years (each round equals 1 year). Bar graphs with different colors for each round work well. Discuss axis labels so that students will make sure to graph appropriately. The leader could also record the numbers of habitats and have students graph those results. Students could also use Microsoft Excel to create a table and graph on the computer.

Which "year" (round) showed the largest change in lemur population? Which showed the smallest? Can you tell what habitat change affected the lemur population the most? (They probably can't from the way the game is played, but that's a good point about limitations of data and the difficulty of predicting the effects of habitat. They could also re-play the game to graph changes in available habitat.)

ZOO EXTENSION

During a trip to the zoo, have students observe animals in their zoo habitats. Modern zoo habitats are designed to provide all the elements needed for animals to have healthy, enriched lives while still providing for proper care and safety of the animals and people. Students should look closely for habitat elements that may not necessarily be obvious (doors to shelter areas, hidden food stations). Take advantage of any opportunities to meet keepers and staff to learn more about how the habitat has been designed for the animals needs. Ask: How are the habitats similar to and different from their habitats in the wild? Ask: How do the design of the habitats take into account the differences in needs for different animals? Look for differences in reptile vs. mammal vs. bird habitats, for example: How are carnivores managed versus herbivores? Social animals versus solitary animals?

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EVALUATION

Students may be assessed on responses to questions in the pre/post discussion. If choosing the math extension, it can also be assessed using the accompanying worksheet.

THIS ACTIVITY MEETS THE FOLLOWING NATIONAL AND FLORIDA EDUCATION STANDARDS

FLORIDA STATE STANDARDS

2 nd Grade Science	3 rd Grade Science
SC.2.L.17.1	SC.3.N.1.1
SC.2.L.17.2	SC.3.N.1.3
SC.2.N.1.1	SC.3.N.1.6
	SC.3.N.1.7
	SC.35.CS-CP.1.3

2 nd Grade Physical Education	3 rd Grade Physical Education
PE.2.M.1.1	PE.23.M.1.1

2 nd Grade Math	3 rd Grade Math
MAFS.2.MD.4.10	MAFS.3.MD.2.3

NATIONAL SCIENCE STANDARDS

- 2nd and 3rd Grade
Transfer of energy (food chains)
Organisms and environments
Characteristics and changes in populations

NEXT GENERATION NATIONAL SCIENCE STANDARDS

- 2nd Grade: Interdependent Relationships in Ecosystems (2-LS4-1)
3rd Grade: Interdependent Relationships in Ecosystems (3-LS4-3, 3-LS4-4)

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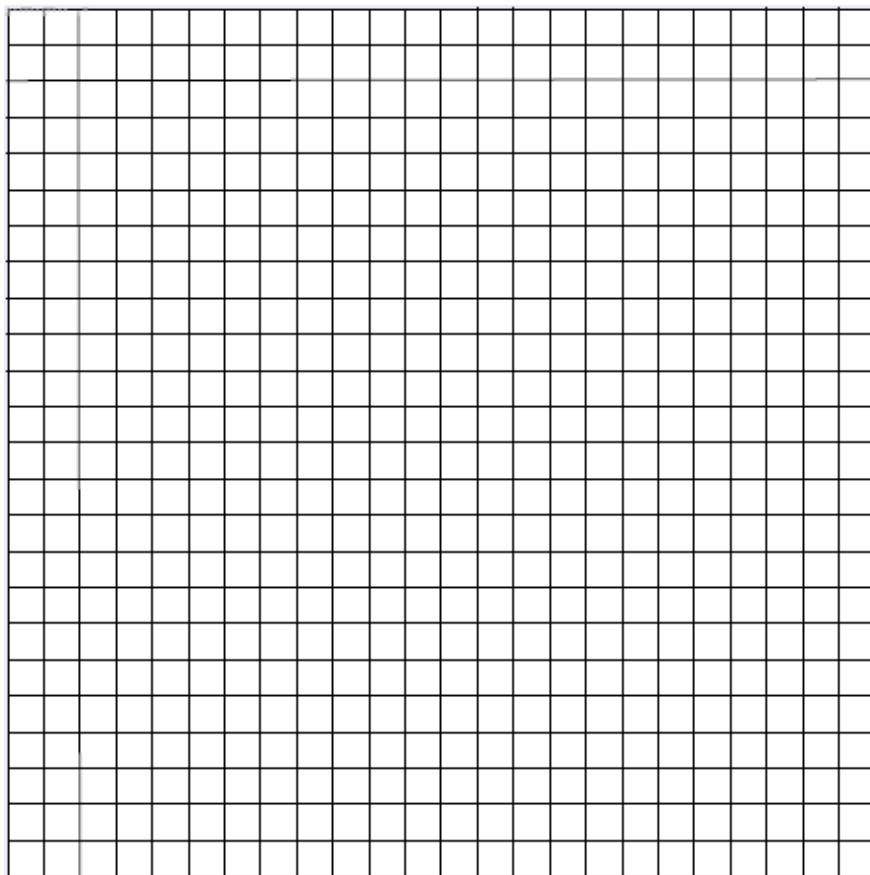
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GRAPH YOUR RESULTS

Graph the results from your population study. Each round = 1 year.

(20 points correct x-axis, 20 points correct y-axis, 20 points correct graph)



Answer the following questions about the activity:

What three habitat requirements were in the activity? (8 points for each one)

Food, water, shelter

How did the organisms act when their habitat requirements became limited? (8 points)

They compete harder, they are stressed, they fought for the requirements

Describe how population of organisms change over time with respect to habitat availability. (8 points)

Population numbers will rise as long as they have enough habitat requirements met. When habitat requirements run out, population goes down. It is a continuous cycle of ups and downs.