Lemurs, little and large

2-3rd grade
Language Arts, Science. Math

Lesson Description

Students practice measuring and learn that lemurs come in many sizes by measuring the length of Bitika the mouse lemur and other lemur species that she encounters on her evening adventure. The discussion focuses on lemur biodiversity (and also island gigantism and dwarfism) and the risks and benefits of being big and small.

Learning Goals: Students will know that lemurs come in a variety of sizes and be able to use different tools and units to measure them.

Students will be able to:

- Measure the length of different lemur species
- Describe why lemurs are so diverse in size
- Measure lengths using a variety of tools
- Compare various units of measurement
- Describe why island species are sometimes very large or very small
- Understand complexity of conservation issues

Materials needed:

- Sets of marked lemur measurement rope and identification, made using:
- Lemur Fact Cards
- Thick yarn or twine (15 feet long, one per group of students plus one for the teacher)
- Toilet paper, paper towel roll, or similar tube
- Paper clips (8 per group of students)
- Colored tape (to mark lengths on rope)
- Masking tape to tape the ends of the lemur measuring rope to the floor
- Menabe-Antanimena Ako Poster

1 HOUR

Looking at Lemurs

SETUP

Make the Lemur Measuring Ropes:

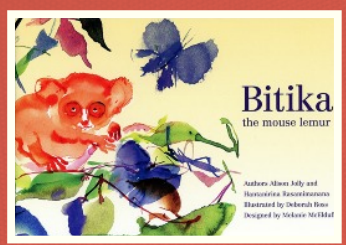
1. Print out one set of Lemur Fact Cards for each rope. Cut out each card and hole-punch the corner. Place a paper clip through the hole. The paper clip will be used to attach the card at the distance representing the length of each lemur depicted.

2. Cut one 15 foot length of yarn for each student group.

3. Measure the yarn at the distances indicated on the Lemur Fact Cards, marking each spot with the colored tape. Place a random card at each

For Background Information See:

Looking at Lemurs



Featured book:
Bitika the mouse lemur

distance. During the activity the paperclip should go through the yarn to prevent the card from moving. Mix the cards when you place them on the rope.

4. Attach the yarn to an empty toilet paper or paper towel roll so that students can wind and unwind it easily. Roll the yarn and the cards up onto the roll for storage (cards should not be attached to the yarn during storage to help prevent damage).

READ AND DISCUSS

1. Read Bitika the Mouse Lemur aloud to the class.

2. Explain to the students they are going to complete an activity that focuses on different sizes of lemurs. Review the different sizes of lemur species in the book and poster.

3. Explain that lemurs only live on the island of Madagascar. They come in many sizes, colors, body shapes and have different physical features. Pose the question: Why do you think there are so many different kinds of lemurs on the same island? Explain that the variety of life in the world or in a particular habitat or ecosystem is called biodiversity.

4. Review as a class some of the ways that lemurs show physical diversity (physical differences)- for instance size, color, ear shape and size, tail length and shape, body shape, facial features, leg length, size of hands, fingers, legs and toes etc. List these differences on the board.

5. Explain that today they will be looking at variations in size.

ANALYTICAL WRITING

Look at the different sizes of lemurs you have been reading about. Compare the size of each lemur species to that of an animal we have in the United States. How do they compare? How are they different?

LEMURS, LITTLE AND LARGE

2-3RD GRADE
LANGUAGE ARTS, SCIENCE. MATH

ACTIVITY

1. Pass out the tape measures, measuring ropes, a set of cards and two pieces of masking tape to each student group. Instruct each group to tape the ends of their rope to the floor with the masking tape so the ropes will be taut when they are completing their measurements. Explain that the taped markers on the measuring rope show the size or length of different lemurs. Each team will need to measure the length of each lemur (listed on the identification card) and match the cards to the correct length marked out on the yarn. (NOTE: This activity can also be completed together as a class rather than in teams.)

2. Introduce the measuring tape to the students. Have them look at the numbers and review how to find inches and feet. Introduce metric units such as centimeter and meter.

3. Choose one of the medium sized lemurs. For example, the mongoose lemur. Explain that the length of the lemur from the tip of its head to the base of its tail is 12 inches. Have students look for the number 12 on the tape measure. Explain that if you were to put the top of the lemur's head at '0', and ask it to stretch out on the measuring tape the end of its body (minus its tail) would be at 12 inches. Have the students attach the appropriate animal card to this length using the paper clip.

4. Students should continue using the measurement listed on the cards to match each card to the correct length. Finish the activity by having the students match the card to the extinct giant lemur.

5. When students have completed matching the cards to the correct lengths review the lemur species and sizes together as a class.

6. Consider incorporating addition/subtraction math story problems connected to the book:

LOOKING AT LEMURS

- Bitika saw three white sifakas asleep in a row. A silky sifaka is 21 inches long. What is the length of 3 sifakas? One sifaka woke up and jumped off of the branch. Two sifakas are left. What is the combined length of two sifakas?
- Bitika met 10 brown lemurs on the branches. One collared brown lemur is 16 inches long. What is the combined length of 10 collared brown lemurs?
- Additional options include converting inches to feet or metric units.

WRAP-UP

1. Complete the activity with a wrap up discussion. Use the following questions to guide you.
   - Were you surprised that lemurs came in so many sizes?
   - Why do you think there are so many sizes of lemurs on the same island?
   - What do you think caused the extinction of the giant sloth lemur?

2. Explain that while scientists still have much to learn about island species, animals that live on islands often grow very large or small. Review the "Island Rule" of gigantism and dwarfism (see the Educator's Guide for information about the Island Rule).

MATH EXTENSION

Not everything is measured in inches and feet! Nautical miles, fathoms, hands, furlongs, board feet and acres are all units of measurement. Use different measurement tools to measure the length of each lemur and compare various units of measurement. In addition to inches and feet, measure the lemur's length in centimeters. Try unique units of measurement such as paperclips, M&M's, jellybeans or post-it notes. Have students record their findings. Emphasize that these different units of measurement are different ways for saying the same thing.

LEMURS, LITTLE AND LARGE

2-3RD GRADE
LANGUAGE ARTS, SCIENCE. MATH

SCIENCE EXTENSION

Have students research island species (both modern and extinct) that display gigantism and dwarfism. How did they live? When did they live? If they are extinct –what was the cause?

GIANT SPECIES

Komodo dragon
Madagascar Hissing Cockroach
Dodo
Elephant Bird
Galapagos Tortoise
Moa
Sloth Lemur
Haast's Eagle
St. Helena Earwig
Minorcan Giant Lagomorph (Rabbit)
Flores Giant Rat
Madagascar Giant Jumping Rat
Corsican Giant Shrew
Giant Weta
Prehensile-Tailed Skink
Kakapo (New Zealand Parrot)
Solomon Island Skink

DWARF SPECIES

Cyprus Dwarf Hippo
Channel Islands Pigmy Mammoth
Bali Tiger
King Island Emu
Virgin Island Dwarf Gecko
Lowland Anoa
Zanzibar Leopard
Madam Berthe's Mouse Lemur
Cozumel Raccoon
Sardinian Dhole
Honshu Wolf
Key Deer
Madagascar Dwarf Chameleon
Philippine Sambar
Svalbard Reindeer
Balearic Islands Cave Goat
Cozumel Raccoon

Lemurs, little and large

2-3rd grade
Language Arts, Science. Math

EVALUATION

Evaluate the student's ability to measure and understand units by checking the lemur lengths on the cards and comparing them to the measuring ropes.

This activity meets the following national and Florida education standards

Florida state standards

2nd Grade Math	2nd Grade Science	3rd Grade Math	3rd Grade Science
MAFS.2.MD.1.1	SC.2.N.1.1	MAFS.K12.MP.5.1	SC.3.N.1.1
MAFS.2.MD.1.4		MAFS.3.OA.1.3	SC.3.N.1.6
MAFS.2.MD.2.5		MAFS.3.NBT.1.3	

National science standards

2nd and 3rd Grade
Characteristics of organisms
Organisms and environments
Form and Function

Next Generation National science standards

2nd Grade Interdependent Relationships in Ecosystems (2-LS4-1)
3rd Grade Inheritance and Variance of Traits (3-LS3-1 and 3-LS3-2)

Lemurs, little and large

2-3rd grade
Language Arts, Science. Math

MADAME BERTHE'S MOUSE LEMUR
Head-body Length: 3 inches/ 9 cm

INDRI
Head-body Length: 31 inches/ 80 cm

GREY MOUSE LEMUR
Head-body Length: 5 inches/ 14cm

MONGOOSE LEMUR
Head-body Length: 12 inches/ 30 cm

LEMURS, LITTLE AND LARGE

2-3RD GRADE
LANGUAGE ARTS, SCIENCE. MATH

WESTERN FAT-TAILED DWARF LEMUR
Head-body Length: 9 inches/ 23 cm

COLLARED BROWN LEMUR
Head-body Length: 16 inches/ 41cm

SILKY SIFAKA
Head-body Length: 21 inches/ 54 cm

GIANT SLOTH LEMUR (EXTINCT)
Head-body Length: 49 inches/ 1.25 meters