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NARRATED BY MORGAN FREEMAN

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DISCOVER THE MYSTERY OF MADAGASCAR

Use the map inside to learn about Madagascar's
LEMURS—found nowhere else on Earth.

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Education Partner



The Duke Lemur Center, located in Durham, North Carolina, is the only university-based facility in the world dedicated to the preservation and study of prosimian primates. Here, 238 lemurs from 17 different species live on 70 acres of preserved forest. More than 100 researchers per year study lemurs at the Center, while tens of thousands of visitors travel from all over the world to meet these captivating animals. <http://lemur.duke.edu/imax>



WELCOME TO LEMUR ISLAND

Lemurs are evolutionary relatives of monkeys, apes, and people. They live natively on the island of Madagascar, and nowhere else.

Madagascar is the world's fourth-largest island, and 9 out of 10 of its species are found nowhere else.

Lemur in Latin means "ghost" and many of the Malagasy people believe lemurs are similar to spirits or ghosts because of their haunting stare and night activity.

The Malagasy name "sifaka" comes from the distinct call this animal makes as it travels through the trees: "shif-auk."

Until recently, gray mouse lemurs were thought to be the smallest living primate. This was disproven when the pygmy mouse lemur, thought to be extinct, was rediscovered.

Indris are among the most tree-loving lemurs. They avoid the ground and spend most of their time climbing and jumping from tree to tree.

Bamboo lemurs eat large amounts of bamboo, which contains a potentially toxic chemical. Scientists don't fully understand how they eat so much bamboo without being poisoned.

Ring-tailed lemurs live in big groups of up to 24 animals. Females rule the groups.



USE YOUR MAP SKILLS

- 1 Maromokotro is part of which massif?
- 2 Six rain forests border the island's east coast. Which body of water is closest to them?
- 3 What river flows through the capital city?
- 4 What percentage of plants and animals evolved on Madagascar and nowhere else?
- 5 Which lemur species is the smallest?
- 6 Which Madagascar species is named for its long neck?
- 7 Centre ValBio is located in what national park?
- 8 What province is the Tsingy Stone Forest located in?
- 9 What massif is in the southern part of Madagascar?
- 10 Are ring-tailed lemurs found north or south of Antananarivo?

SNACK LIKE A LEMUR

Lemurs mainly eat leaves, nuts, flowers, fruits, and seeds. Make these yummy lemur-inspired bars to enjoy with your family!

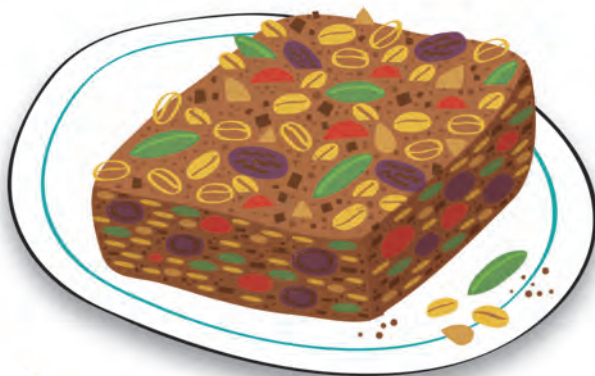
Fruit-and-Nut Bars

(Adapted from thekitchn.com)

Makes 12 bars

Ingredients:

- 1/4 cup melted coconut oil
- 3 tablespoons peanut butter
- 3 tablespoons brown rice syrup
- 1/4 cup ground flaxseeds
- 1 1/4 cups applesauce
- 1 teaspoon vanilla
- 3 cups rolled oats
- 1/2 cup raisins
- 1/2 cup dried cranberries
- 1/4 cup pumpkin seeds
- 1/4 cup sunflower seeds
- 1/4 cup chopped Madécasse chocolate (or any milk/dark chocolate)
- 1/2 teaspoon cinnamon
- 1/4 teaspoon salt



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- 1 Parents, preheat oven to 325°F. Line an 8x8 baking pan with parchment paper.
- 2 Invite children to measure out the ingredients for this step. In a small saucepan over low heat, combine the melted coconut oil, peanut butter, and brown rice syrup. Stir until melted. Remove from heat and add the ground flaxseeds, applesauce, and vanilla. Whisk to combine, and let the mixture cool slightly.
- 3 In a large bowl, have children combine the oats with the dried fruit, seeds, chocolate, cinnamon, and salt. Pour the liquid mixture over the dry ingredients and stir until combined.
- 4 Press the mixture into the pan, flattening with your hands to create an even surface.
- 5 Bake until golden, about 45 minutes. Cool completely in pan. Lift and cut into squares.
- 6 Store bars in an airtight container in the refrigerator.



WE ARE FAMILY

What's it like to be a lemur? In some ways, very different from life as you know it. Like humans, lemurs and other primates have opposable thumbs, which means they can use them to touch each of the fingers on the same hand. Try this activity to see what life would be like without these flexible digits.

Materials: Package of toothpicks, stopwatch, masking tape

Procedure:

- 1 Spread out several dozen toothpicks on a table.
- 2 Time each family member as they pick up all the toothpicks as fast as they can. Have each family member pick up the pile of toothpicks three times, then average the results.
- 3 Take turns taping each family member's thumb and index finger together. Repeat steps 1 and 2.
- 4 Try doing other normal activities with your thumbs taped. How difficult is it to eat a snack? Pick up a cup of water? Write your name?

Think About It:

- 1 What was each person's average time for picking up toothpicks when using his or her thumb freely?
- 2 What was each person's average time for picking up toothpicks with a taped thumb?
- 3 How big of a difference did the thumb make in manipulating objects?
- 4 What was it like doing other activities without the use of your opposable thumb?
- 5 Primates such as lemurs evolved for life in the trees. Talk about how an opposable thumb would be especially useful in the treetops.

WORKSHEET 1: Reading Nonfiction Text

Lexile Level: 820

Name: _____

DIRECTIONS: Read the passage below and answer the questions that follow on a separate sheet of paper.

AN AMAZING DISCOVERY IN THE LAND OF LEMURS

Excerpted from Spirit Animal: My Life with the Lemurs of Madagascar by Patricia Chapple Wright (2014), with permission from Lantern Books.

For Dr. Patricia Wright, Madagascar is a land of beauty and wonder—and challenges.

Wright's Madagascar tale began in 1985, shortly after she finished graduate school for anthropology and became a **primatologist**. She had just gotten a job at the Duke University Primate Center, now known as Duke Lemur Center, when her boss told her about *Haplemur simus*, the greater bamboo lemur.

A number of lemurs in Madagascar **specialize** in eating bamboo plants. The greater bamboo lemur was the biggest. In 1851, explorers to Madagascar described seeing this grayish-brown lemur with tufts of fur on its ears. But by the 1960s, the greater bamboo lemur seemed to have disappeared. Scientists feared that it had become **extinct**.

Was it really gone forever? Wright's boss wanted to know for sure. He gave her a challenge: Go to Madagascar and find the missing lemur.

Wright left the following spring. She traveled from North Carolina to the rain forests near Ranomafana, in eastern Madagascar. The search was not easy. She did not speak **Malagasy**, the local language. She knew only a little French, the second language of Madagascar. Locals warned her that the forest was dangerous. As she searched for lemurs in the jungle, she had to climb steep peaks and travel far from civilization.

But the hard work paid off. During one of those difficult **expeditions**, Wright came across a grayish-



Dr. Patricia Wright—American primatologist, anthropologist, and conservationist

brown lemur with pale ear tufts: the greater bamboo lemur! She and her team of explorers and scientists had found it. It was still alive!

Rediscovering the greater bamboo lemur was a **triumph**. But there was more excitement in store. Walking through the forest one day, Wright spotted a glimpse of golden fur in the bamboo above her. It was a lemur, but she'd never seen anything like it. In fact, no other scientists had either. She had found a new species—*Haplemur aureus*, the golden bamboo lemur.

Wright wanted to learn as much as she could about the golden bamboo lemurs. She followed them through the forest, watching their behavior and taking notes. One day, she heard a creak and a crash. It was the sound of a falling tree. Then she heard another. **Timber harvesters** were nearby, chopping down rosewood trees to sell for their valuable wood.

Wright was worried. Both the greater bamboo and golden bamboo lemurs were rare. They depended on that forest for survival. If their **habitat** disappeared, so would the lemurs.

She decided to take action. First, she visited Madagascar's Water and Forest Director. She explained that the lemurs were unique, and they were in trouble. He agreed to help her create a national park to protect the forests of Ranomafana. But first,

Wright would have to raise money and win support from local villagers. For the second time in her career, she accepted an almost impossible challenge.

In the years that followed, Wright visited more than 50 villages, explaining to locals that a park would be valuable for people and for lemurs. She helped the villagers build dams to grow rice along the rivers, instead of working for timber companies or cutting trees for farmland. She helped them build schools and medical clinics. On top of all that, she raised enough money to make the park a reality.

Ranomafana National Park was established in the spring of 1991, just five years after Wright first set out to rediscover the greater bamboo lemur. Thanks to the hard work of Wright and her fellow team members, the lemurs have an improved chance at survival.

CORE VOCABULARY

primatologist:

Primatologists are scientists who study primates, the group of mammals that includes lemurs, monkeys, apes, and humans.

specialize:

To specialize is to focus on one area of work, or to learn a lot about one subject.

extinct: If an animal or plant has become extinct, it has died out.

Malagasy: Malagasy is the official language of Madagascar.

expedition:

An expedition is a long journey that someone goes on for a special purpose.

triumph: A triumph is a great victory or success.

timber harvesters:

Timber harvesters cut down trees, prepare and process them, and load the trees or logs onto trucks to sell.

habitat: A habitat is the place and natural conditions in which a plant or an animal lives.

READING COMPREHENSION QUESTIONS

1. About how many decades passed between the time the last greater bamboo lemur was spotted and the time Patricia Wright went to search for them?
2. Describe some of the challenges Wright faced while searching for the greater bamboo lemur.
3. What threat to the lemurs did Wright discover?
4. How did Wright help convince villagers to support a national park?
5. What two big challenges did Wright face early in her career?

GO DEEPER WITH RESEARCH

Choose one of these questions to research and write about.

1. What does *aureus* mean? How does it relate to the common name of the species it describes?
2. Why is French spoken in Madagascar?

Greater
bamboo
lemur



2. Madagascar was once a French colony.

1. *Aureus* is an ancient Roman-era gold coin. The *Haplorhina aureus*, or golden bamboo lemur, is named for its visible areas of gold fur.

Research Questions Answer Key

1. About two decades passed.
2. She did not speak the local language. She had to travel far into deep, dangerous forest, climbing difficult terrain.
3. Wright discovered that timber harvesters were taking trees from the forest, destroying lemur habitat.
4. She helped them find other sources of income, such as rice farming. She also helped them build schools and clinics.
5. She was challenged to find a very rare lemur, and then to save it from extinction by creating a national park to protect it.

Reading Comprehension Answer Key



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WORKSHEET 2: Reading Informational Text

Lexile Level: 830

Tsaranoro Mountain

Name: _____

DIRECTIONS: Read the passage below and answer the questions that follow on a separate sheet of paper.

LEMURS IN TROUBLE

With its wealth of varying landscapes and distinctive wildlife, Madagascar is a place unlike any other.

Most of the **species** on this African island are found nowhere else. In fact, Madagascar has more unique species than any other country. Those species include more than 90 types of lemurs, from tiny mouse lemurs to 3-foot-tall indris. Many **conservationists** say that working to sustain the health of Madagascar and preserving its incredible **biodiversity** are top priorities. But these are big challenges.

Ninety-four percent of lemurs are threatened with **extinction**. Forty-nine species are listed as **endangered**. Another 24 species are **critically endangered**. They're among the most threatened species on the planet.

For some species, it's already too late. Giant lemurs once roamed the forests of Madagascar. One was as large as a gorilla! But after humans arrived on the island about 2,000 years ago, those animals died out. Scientists think they were driven to extinction by hunting and changes to their **habitat**.

Unfortunately, those problems still exist. More than 90 percent of the island's original vegetation has been chopped down. As more of the forest disappears, Madagascar's lemurs are losing their homes.

Many of the local Malagasy people practice a traditional form of farming called *tavy*, or **slash-and-burn** agriculture. They cut down vegetation and burn it to release its nutrients into the soil. After a couple of years of farming, the soil is no longer **fertile**. Farmers must slash and burn another plot of land.

Trees are also cut down for timber and for fuel.

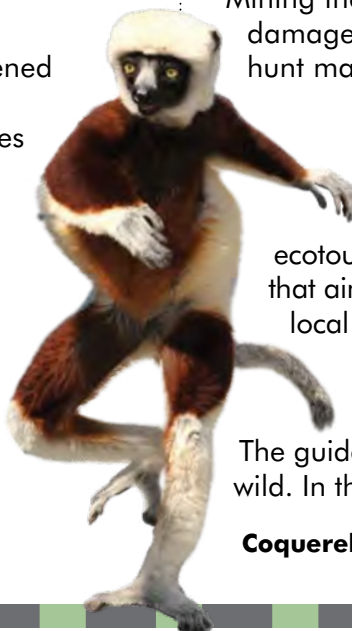
Mining the land for minerals and gemstones damages forests, too. On top of that, people still hunt many lemur species for food.

Conservationists are working to change all that.

For some, a key plan is to develop ecotourism on Madagascar. Ecotourism is tourism that aims to support conservation and benefit local communities.

Some conservationists want to train locals to work as wildlife guides, for instance. The guides can lead tours to observe lemurs in the wild. In that way, guides earn a living and also have

Coquerel's sifaka

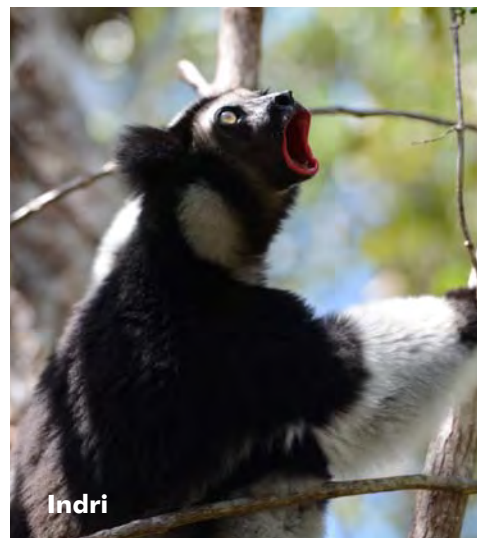


reason to help protect the lemurs from threats such as **poachers**.

But will ecotourism help? Madagascar is one of the world's poorest countries, and ecotourism doesn't always mean jobs or revenue for locals. It also has a fast-growing population, which needs food and other resources to survive.

Even though it's damaging to land, tavy has been practiced for generations. For many Malagasy farmers, it's the only way they know to grow crops, and providing for their families daily takes priority. Critics worry that if hunting or logging are outlawed, locals may discover their everyday activities are suddenly illegal.

In response, conservationists say wildlife conservation must be done in partnership with locals. By helping locals find new ways to farm and to earn a living, they can protect Madagascar—and its nonhumans—together.



Indri

CORE VOCABULARY

species: The group into which animals and plants are divided according to things that they have in common.

conservationists: A conservationist works to protect valuable things, especially forests, wildlife, and natural resources.

biodiversity: In nature, biodiversity allows for a wide variety of animals and plants to live in a single area.

extinction: If an animal or plant has become extinct, it has died out.

endangered: A type of plant or animal that is endangered is in danger of becoming extinct, or of dying out.

critically endangered: An animal or plant is critically endangered when there is an extremely high risk of extinction in the immediate future.

habitat: The place and natural conditions in which a plant or an animal lives.

slash-and-burn: A kind of farming in which areas are burned and cleared for planting; the ash provides some fertilization and is mostly free of weeds.

fertile: Land that is fertile is good for growing lots of crops and plants.

poachers: Illegal hunters

READING COMPREHENSION QUESTIONS

1. Give two reasons why Madagascar is a top priority for conservation.
2. Why has the lemur habitat been destroyed?
3. What are the benefits and drawbacks of slash-and-burn agriculture?
4. What is ecotourism? How might it help save lemurs?
5. Why do critics have concerns about ecotourism?

GO DEEPER WITH RESEARCH

When did Madagascar break away from the African continent? How has this affected Madagascar's wildlife?

Madagascar separated from Africa more than 130 million years ago. The plants and animals evolved in isolation, leading to the evolution of unique organisms unlike those found elsewhere.

Research Questions Answer Key

1. Madagascar has more unique species than any other country. Lemurs are highly threatened, with 94 percent classified as being in danger of extinction.
2. Forests are cut down for agriculture, fuel, and timber. Mining for gems and minerals also damages forests.
3. Slash-and-burn agriculture allows poor families to grow food. However, it destroys forest habitat for wildlife, as well as forest resources for people.
4. Ecotourism is tourism that supports conservation and benefits local communities. If locals can earn a living from ecotourism, they may be less likely to perform activities that damage the forest, and may also have a greater desire to protect lemurs from harm (since their livelihoods will depend on them).
5. Some critics worry that ecotourism could harm the local Malagasy people, who are often very poor and need resources such as land, food, and fuel to survive.

Reading Comprehension Answer Key



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Mouse lemur