

Cats and Their Coats

How do the coats of big cats help them survive in different habitats?

Overview

Students explore what lions, tigers, and leopards look like and analyze how the animals' coats help them survive in their different habitats.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/cats-and-their-coats/>

Program



Directions

1. Activate students' prior knowledge about big cats and their physical features.

Discuss with students what they think of when they hear "big cats." Ask: *What pictures come to mind? What are some types of big cats that you can think of?* Elicit from students that big cats include lions, tigers, leopards, cheetahs, and other large predatory cats. Show students the first three websites, which are National Geographic photo gallery images of lions, tigers, and leopards. Ask: *What types of big cats are these? How do you know?* As each image is shown, prompt students to describe the specific physical characteristics of each cat, including the color and pattern of their different coats. For example, ask: *What color is the cat's*

coat? Are there any patterns on its coat? Does it have any patterns on its face? Elicit from students that lions are slightly smaller than tigers and have a mostly solid, light brown coat. Males also have manes that can be colors from light to dark brown, almost black. Tigers are the largest of the big cats. They are reddish tan with dark stripes. They are white on their underside and have white spots above each eye. Leopards are smaller than lions and tigers and are light brown with distinct dark spots.

2. Have students identify big cats and their roars.

As a class, have students explore the remaining three websites, which are each big cat's National Geographic Animals page, and practice correctly identifying the animals. Also have students try to predict and make the roaring sound of each big cat. Then play the audio recording of each from its page and see if students' predictions were correct. Play each recording again and see if they can tell a difference between the roar of the lion, tiger, and leopard.

3. Have students identify and distinguish between the different types of big cat habitats.

Explain to students that a habitat is the environment where an animal lives throughout the year or for shorter periods of time. For example, the habitat of a whale shark is the open ocean; the habitat of a prairie dog is the prairie. Ask: *Where do big cats live? What is their habitat like? Do they all live in the same type of habitat?* Elicit from students that most big cats live throughout parts of Africa and Asia, and their habitats can be very different. Since their habitats are different, big cats look different and use different strategies to survive. View each big cat's National Geographic Animals page again and point out the geographic range of each featured big cat (lion, tiger, leopard). Then revisit the National Geographic photo gallery images of each big cat and ask students to describe the habitats they see. Have students correctly identify the habitat images as savanna (grasslands with few trees and large, flat areas of grasses) or forest (habitats filled with trees and underbrush). On the left side of a sheet of paper, have students list the terms *savanna* and *forest*. On the right side, have students list the terms *lion*, *tiger*, and *leopard*.

4. Have students recall which big cat lives in each of the habitats described.

Tell students that they will now recall which big cat lives in each of the habitats described. Ask: *What does the term camouflage mean?* Elicit from students that many animals use camouflage to help them blend in to their surrounding habitat, or environment. Ask: *Have you ever heard of the term camouflage? Why would an animal need to blend in to its environment?* Elicit from students that camouflage helps protect animals from predators and other threats. It also helps them blend in and go undetected as they hunt. Students may be familiar with camouflage used by hunters or people in the military. In pairs or small groups, have students use their papers from Step 3 and draw a line to match which big cat (lion, tiger, or leopard) lives in each of the different habitats (savanna or forest). Encourage them to recall the big cats' coat colors and patterns to guide them in selecting the correct habitat. Have students view the National Geographic photo gallery images again. Discuss student answers and whether or not they correctly matched the habitats to the big cats. Explain that Africa's lions live in the grasses of the savanna; African leopards live in the tall grasses and trees of the savanna; and Asian tigers inhabit forests. Explain that the solid, light brown coat of the lion acts as camouflage and helps it hide in the dry, low-lying grasses of the African savanna. The tiger's reddish-tan tone and dark stripes help it hide in Asia's shadowy forest. The leopard's light coat with dark spots helps it hide in the tall grasses and trees of the African savanna. Discuss that both lions and leopards live in savanna habitat but, unlike lions, leopards can climb and live in trees.

5. Have students draw coats that act as camouflage in their chosen habitat.

Have students review what they learned about the coats of big cats and how coats help big cats survive in different habitats. Remind students that the color and pattern of big cats' coats acts as camouflage and helps them blend in to the habitats in which they live. This helps protect animals and helps them hunt. Tell students to imagine the habitat of one of their favorite places. They can think about their favorite vacation spot, an activity they like to do, or where they go to have fun with their friends or family. Tell them to imagine playing a game of hide-and-seek in that place. They need to design a coat of camouflage that they can wear to hide in the habitat of that place. Provide a few examples, such as a gray, striped coat to wear while they sit on the couch and watch television, or a blue, wavy-patterned coat to wear while swimming in the ocean. Tell students their drawing must include color and pattern and that they should be ready to describe the texture of their coats. On the board, model how to draw a simplified coat (or t-

shirt) shape. Have students copy the coat shape onto their own paper. Give students time to think about and color their coats. Then have them share their designs with their classmates. They must describe their place (habitat) and explain how their coat's color, pattern, and texture (camouflage) will help them hide in their place.

Informal Assessment

Observe student participation and responses throughout the activity and class discussion.

Extending the Learning

Have students do the activity again, using a different big cat or another animal of their choosing to see if and why their animal uses camouflage in its habitat.

Objectives

Subjects & Disciplines

Geography

- [Physical Geography](#)

Science

- Biology
- Natural history

Learning Objectives

Students will:

- compare and contrast the habitats and coat patterns of lions, tigers, and leopards
- describe how the coat patterns of big cats help them survive in different habitats
- create a human coat to act as camouflage for students in a habitat familiar to them

Teaching Approach

- Learning-for-use

Teaching Methods

- Discussions
- Inquiry

Skills Summary

This activity targets the following skills:

- 21st Century Themes
 - Global Awareness
- Critical Thinking Skills
 - Analyzing
 - Understanding
- Geographic Skills
 - Acquiring Geographic Information
 - Answering Geographic Questions

National Standards, Principles, and Practices

National Council for Social Studies Curriculum Standards

- **Theme 3:**

People, Places, and Environments

National Geography Standards

- **Standard 3:**

How to analyze the spatial organization of people, places, and environments on Earth's surface

- **Standard 8:**

The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

National Science Education Standards

- **(K-4) Standard C-1:**

The characteristics of organisms

- **(K-4) Standard C-3:**

Organisms and environments

Preparation

What You'll Need

Materials You Provide

- Crayons
- Drawing paper
- Pencils

Required Technology

- Internet Access: Required
- Tech Setup: 1 computer per classroom, Projector, Speakers

Physical Space

- Classroom

Grouping

- Large-group instruction

Resources Provided: Websites

- [National Geographic Animals: Big Cat Pictures](#)
- [National Geographic Animals: Tiger Pictures](#)
- [National Geographic Animals: Big Cat Cub Pictures](#)
- [National Geographic Animals: African Lion](#)
- [National Geographic Animals: Bengal Tiger](#)
- [National Geographic Animals: Leopard](#)

Background & Vocabulary

Background Information

The big cats of Africa and Asia are highly adapted predators. Africa's lions dominate the savanna. Leopards fill their own niche in the tall grasses and trees. Tigers are top predators of Asia's forests and can even hunt in mangrove swamps. One reason these big cats are so well adapted to their particular habitats is their ability to use camouflage. The solid, light brown coats of lions, the spotted coats of leopards, and the reddish-tan and striped coats of tigers help each big cat hunt and find protection within its preferred habitat.

Prior Knowledge

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Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
Big Cats Initiative	<i>noun</i>	National Geographic Society program that supports on-the-ground conservation projects, education, economic incentive efforts, and a global public-awareness campaign to protect big cats and their habitats.
camouflage	<i>noun</i>	tactic that organisms use to disguise their appearance, usually to blend in with their surroundings.
forest	<i>noun</i>	ecosystem filled with trees and underbrush.
habitat	<i>noun</i>	environment where an organism lives throughout the year or for shorter periods of time.
leopard	<i>noun</i>	large, spotted cat native to Africa and Asia.
lion	<i>noun</i>	large cat native to sub-Saharan Africa and Gir Forest National Park, India.
savanna	<i>noun</i>	type of tropical grassland with scattered trees.
tiger	<i>noun</i>	large cat native to Asia.

For Further Exploration

Websites

- [National Geographic Animals: Big Cats Initiative](#)
- [Encyclopaedia Britannica: Lion](#)
- [Encyclopaedia Britannica: Leopard](#)
- [Encyclopaedia Britannica: Tiger](#)



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