

The Giraffe

Lesson Objectives & Summary

Objective: Students will learn about the unique physical characteristics of the giraffe species and subspecies found in eastern Zambia. Students will focus on such physical attributes of the giraffe as the neck, coat color, and ossicones (horns) and will explore how different subspecies' possess unique characteristics based on their geographic location. Students will consider how certain physical features help the giraffe to survive in the wild. Students will also compare and contrast the unique physical characteristics of giraffes with those of humans.

Summary: Students will examine and sketch their fingerprints in order to establish that though some may seem similar, each fingerprint is uniquely different. Students will then watch "[The Giraffe](#)" video and read the corresponding blog, taking notes on the unique physical features of giraffes. Students will examine images of giraffe subspecies and discuss how the subspecies differ. Lastly, students will compare and contrast giraffe subspecies with some of the physical characteristics of human beings.

Standards & Benchmarks

From the Common Core Standards for Speaking & Listening Standards for Literacy in Science and Technical Subjects, Grades 4/5

- Engage effectively in a range of collaborative discussions with diverse partners, building on one another's ideas and expressing their own clearly (*Comprehension and Collaboration*)
- Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally (*Comprehension and Collaboration*)
- Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

From the National Science Education Standards, Grades K-4

- Students will understand that each plant or animal has different structures that serve different functions in growth, survival, and reproduction (*Life Science: The Characteristics of Organisms*)
- Students will understand that many characteristics of each organism are inherited from the parents of the organism, but other characteristics result from an individual's interactions with the environment (*Life Science: Life Cycles of Organisms*)
- Students will understand that an organism's patterns of behavior are related to the nature of the organism's environment, including the kinds and numbers of other organisms present, the availability of food and resources, and the physical characteristics of the environment (*Life Science: Organisms and their Environments*)

Grade Level:
Upper Elementary

DURATION:
1-2 Lessons

SUBJECTS:
Science

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Background Information for Educators

Giraffes are the tallest land mammals in the world, averaging 14 to 19 feet (4 to 6 meters) in height. Native only to the continent of Africa, giraffes are found predominantly in the plains and wooded areas between the Sahara Desert and South Africa.

While there is only one species of giraffe in the world, there are between 6 and 9 subspecies of giraffe, including the West African (Nigerian), Ugandan (Rothschild), Reticulated, Nubian, Masai, and Angolan species. Subspecies are differentiated by their coat coloring, spot patterns, and their geographic location. While most scientists believe that 6 subspecies of giraffe exist in Africa, recent genetic studies reveal that there may actually be 9 or more subspecies, and that some of these subspecies' populations are extremely few and are therefore highly endangered and on the verge of extinction (i.e.: West African (Nigerian) and Rothschild Giraffes).

Giraffes survive predominantly on a diet of leaves, buds, and branches. They tend to prefer acacia leaves, which their tall necks and long blue-black tongues are able to reach, despite the acacia tree's formidable thorns.

Guiding Questions	Key Vocabulary
<p>What are some of the unique physical characteristics of the giraffe that help it to survive in the wild?</p> <p>What is the difference between a “species” and a “subspecies”?</p> <p>In what ways are giraffe subspecies different?</p> <p>How are male and female giraffes different? (ossicones)</p>	<p>Species</p> <p>Subspecies</p> <p>Ossicones</p> <p>Survival</p>

Lesson Plan

1. Ask students to look closely at their index fingertip. Have students sketch the design that they see on their fingerprint. Then ask students to share their fingerprint sketch with another person. Ask students to discuss with students what the similarities and what the differences they noticed were.
2. Remind students that although many fingerprints may look similar, no two fingerprints are exactly alike. In the same way, animals (including the giraffe) also have unique markings and characteristics that make them different. Sometimes these differences may tell information about where a particular species or subspecies comes from.
3. Ask students to identify some of the physical characteristics that make people unique (i.e.: eye shape, hair color & texture, freckles, height, etc). Encourage students to celebrate the physical characteristics that make them each unique, rather than using their physical characteristics as a point of division or differentiation.

4. Have students watch "[The Giraffe](#)" video taking notes on the physical characteristics and traits of the giraffe that they notice from the video and blog.
5. Ask students to consider what physical traits giraffes possess to help them survive in the wild (i.e.: their long necks and long tongues make it easier for them to reach around thorny acacia trees).
6. Have students consider how people's physical characteristics often differ based on their heritage's originating geographic region (i.e.: People of Asian descent tend to have dark brown or black hair and almond-shaped eyes, whereas people of Scandinavian descent are fairer skinned and often have blue-grey eyes). Share with students that just like these similarities exist among people whose heritage is found in similar geographic regions, giraffe subspecies have similar markings that differentiate them from other giraffe subspecies. (Images of subspecies patterns available WildLifeRanching.com, and with descriptions of each subspecies available at NationalGeographic.com)
7. Divide students into groups and have each group research a specific subspecies of giraffe. Students should focus not only on the markings of their assigned subspecies, but also on the geographic location where they are found. In some cases, students may discover that their assigned subspecies is on the endangered list.
8. As a possible lesson extension, have students consider what factors may have contributed to those subspecies being endangered while others are not.

Assessment / Evidence of Understanding

- Students will identify some of the major differences among subspecies of giraffes, focusing on physical characteristics and geographic location.
- Students will be able to identify some of the unique characteristics of giraffes that help them to survive in the wild (i.e.: skin color and patterns enable giraffes to blend into environment; long necks and tongues enable them to get around acacia thorns to reach acacia leaves).

***** **Assessment Rubric follows on next page** *****

Assessment Rubric	Below Expectations	Meets Expectations	Exceeds Expectations
Giraffe Species and Subspecies Observations	<p>Student observations list general attributes of giraffes and may include some specific but limited information about giraffe subspecies.</p> <p>Student observations may be vague and general (i.e.: giraffes are tall).</p>	<p>Student observations list specific attributes of giraffes that help them to survive in the wild (i.e.: long necks, long tongues).</p> <p>Discussions of subspecies reflect a strong understanding of what differentiates each subspecies (i.e.: focuses on coat color, coat design, and geographic location)</p>	<p>Student observations not only list specific attributes of giraffe species and subspecies, but also represent an understanding of why some giraffe subspecies are endangered, whereas other giraffe subspecies are not.</p>
Comparing and Contrasting Giraffes and Human Beings	<p>Student comparisons may be general (i.e.: giraffes have long necks, while humans have short necks), but do not explain further how these characteristics help each survive in their native environment.</p> <p>Students may have some difficulty identifying similarities between humans and giraffes.</p>	<p>Student comparisons show that both giraffes and human beings possess unique characteristics. Some of these characteristics help each species survive (i.e.: giraffes long necks and tongues help them reach high branches, while human fingers enable them to pick things up)</p>	<p>Student comparisons show a deeper understanding of how both giraffes and human beings have unique physical attributes that reflect their native environment.</p> <p>Students also show a stronger understanding of how each species (humans and giraffes) possess specific physical attributes that help them to survive.</p>

Additional Resources

Live Science on Giraffes

<http://www.livescience.com/27336-giraffes.html>

Zarafa: A True Giraffe Tale

<http://www.npr.org/templates/story/story.php?storyId=5299974>

Giraffe Conservation

http://www.giraffeconservation.org/giraffe_facts.php?pgid=6