

BEHAVIORAL ADAPTATIONS

LESSON

9

Why Do Chimpanzees Use Tools?



Grade Level: **2-3, 4-6** | Subject Areas: **Science** | Time Frame: **1 hour**

Background Information: **Chimpanzee Adaptations: Built for Life in the Rainforest (pages 10-11)**

VOCABULARY:

Adaptation, tool, tool use

STUDENTS WILL BE ABLE TO...

- Replicate how chimpanzees learn and teach each other in their society
- Explain why the use of tools is an important chimpanzee adaptation
- Compare and contrast how people use tools and how chimpanzees use tools

WHAT YOU NEED

- Activity Sheet 9A: *Which Tool Works Best?*
- “Tool” items: rocks, sticks, twigs and leaves
- “Food” items: hard-to-crack nuts (Brazil nuts, walnuts, chestnuts, acorns, etc.), raisins and jar lids filled with water
- Empty paper bowl for each student
- Make sure the outdoor space has plenty of rocks, sticks, twigs and leaves for students to collect. If not, collect them and place them on the ground in the outdoor area.

NOTE: If nut allergies are a concern, replace the nuts with a hard candy or filled lollipop.

LEARNING ACTIVITIES

1. Define the term tool with the class and ask each student to make a list of the tools they use daily, along with how they learned to use the tool and who taught them.
2. Explain that like people, some animals, including chimpanzees also make and use tools. Using tools is an important adaptation that helps chimpanzees survive in their environment. Today, the class will be putting their tool-making skills to the test to learn about chimpanzee tool use.
3. Take the class outside into the space you have prepared. Divide the class into small groups of four.
4. Distribute a clipboard with activity sheet 9A to each group. Give each group a handful of nuts, some raisins, a jar lid filled with a thin layer of water and a bowl. Instruct students to search for tools that will help them complete the tasks found on the activity sheet. Remind students that their tools must be found within the schoolyard and come from nature.
5. Give students time to complete activity sheet 9A. Since chimpanzees learn from each other in the wild, it is also okay if students work together or ask other groups for ideas when solving the tasks.
6. Bring students back to the classroom. Review the background information on chimpanzee tool use and

discuss the activity. Direct students to compare and contrast human and chimpanzee tool use.

WRAP UP

7. Use the following questions to lead a wrap-up discussion:

Questions for Grades 2-3:

- What tools did you choose to use outside? Why did you pick these? *Tool choice could be based on size, shape, flexibility, etc. and will vary among students.*
- How did you learn to use a certain tool? *Students may say they learned through trial and error or by watching other classmates successfully complete a task.*
- How successful were you at completing the tasks using the tools you found outside? *Students' answers will vary.*
- Compare and contrast human and chimpanzee tool use and learning. Explain any similarities and differences. *Just like we often learn from watching our parents or friends, young chimpanzees watch others in their group to learn how to use tools. Also, both chimpanzees and people have the ability to address a challenge using tools. Although the types of tools we use may be different, some of the goals, such as obtaining and eating food are the same.*

Disney nature

chimpanzee

LESSON 9

BEHAVIORAL ADAPTATIONS

Why Do Chimpanzees Use Tools? (2 of 2)



Questions for Grades 4-6:

- Building upon the knowledge you've gained from this lesson, explain why tool use is an important adaptation in chimpanzees? *Tool use is important because it allows chimpanzees to access and eat food that may otherwise be out of reach. Tools are also important for cleaning hair and soothing wounds.*
- Compare and contrast human and chimpanzee tool use and learning. Explain any similarities and differences. *Just like we often learn from watching our parents or friends, young chimpanzees watch others in their group to learn how to use tools. Also, both chimpanzees and people can look at a challenge and come up with a way to address the challenge using tools. Although the types of tools we use may be different, some of the goals, such as obtaining and eating food are the same.*
- Think of the most complex tool used by humans and the most complex tool used by chimpanzees. Compare and contrast their use and sophistication levels. *Students' answers will vary. Discuss which tool is most complex overall and why.*
- Chimpanzees rely on tools in their daily life for a variety of uses. Think of five 'tools' that you use daily that you could not survive without and explain how you use them. *Students' answers will vary.*

EXTENDING THE LESSON: SCIENCE

Option 1: Modify this activity by using different food items such as chocolate candies, marshmallows, pretzel sticks, honey, grapes and rice. Provide students with utensils such as a pasta ladle, chopsticks, a drinking straw, toothpicks and a whisk (do not give students a fork, knife or spoon). Have students try to successfully pick up and transfer the provided food items into a dish using only the provided utensils. Have students record the tool that worked best for each food item. As a class, discuss which tools were most successful. Older grades should graph their results.

Option 2: In recent years, scientists have learned that other animals also make and use tools to solve complex problems! Divide students into small groups and have them research animals such as crows, ravens, sea otters, elephants and octopi that have been observed using tools. Encourage students to share their findings with the class.

CONNECT WITH NATURE

Chimpanzee communities across Africa use different types of tools to achieve specific goals. Divide the class into small groups and have each group complete their own research project on chimpanzee tool use in one of these countries: Ivory Coast, Tanzania, Uganda or Republic of Congo. Students should then present their findings to the class and discuss any similarities and differences.

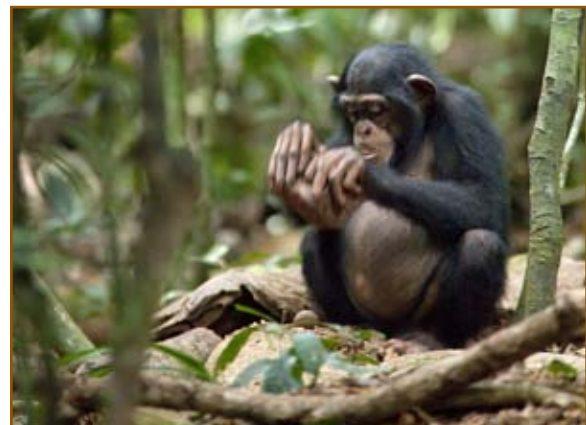
LESSON RESOURCES

For Students

- Jane Goodall Institute of Canada. *Chimp Behaviour: Tool Use*. Jane Goodall Institute. 18 August 2011. <http://www.janegoodall.ca/about-chimp-behaviour-tool-use.php>
- Trivedi, Bijal. *Chimps Shown Using Not Just a Tool but a "Tool Kit"*. National Geographic News, 6 Oct. 2004. Web. 18 August 2011. http://news.nationalgeographic.com/news/2004/10/1006_041006_chimps.html

For Teachers

- Boesch, Christophe and Hedwige Boesch-Achermann. *The Chimpanzees of the Tai Forest: Behavioural Ecology and Evolution*. New York, NY: Oxford University Press, USA, 2000. ISBN: 0198505078.
- Goodall, Jane. *The Chimpanzees of Gombe: Patterns of Behavior*. Cambridge, MA: Belknap Press, 1986. ISBN: 0674116496.
- Wrangham, Richard W., W.C. McGrew, Frans B. M. deWaal and Paul G. Heltne. *Chimpanzee Cultures*. Cambridge, MA: Harvard University Press, 1996.



This young chimpanzee is using a rock hammer to crack open nuts.

LESSON 9

ACTIVITY
SHEET 9A
for grades 2-6

BEHAVIORAL ADAPTATIONS

Why Do Chimpanzees Use Tools?



Which Tool Works Best?

1. Read each task below.
2. Look outside around your school for tools that might help you complete these tasks.
3. The tools you select must be already on the ground and come from nature. Do not pick flowers or leaves or break off living branches to use as tools.
4. Record which tool worked best to help you complete your task.

TASK 1: ANT FISHING

Chimpanzees love to eat ants! They use special tools to "fish" for and catch ants. Your task is to find a tool that will help you move all of the raisin "ants" into the bowl.

What tools did you try? _____

What tool was most successful and why? _____

TASK 2: NUT CRACKING

Chimpanzees in the Ivory Coast are very good at cracking nuts with special tools! Your next task is to find a tool that will help you crack all of the nuts without smashing them.

What tools did you try? _____

What tool was most successful and why? _____

TASK 3: COLLECTING WATER

Chimpanzees make special tools to collect water. Your task is to find a tool that will help you move the water from the jar lid into the bowl. Remember, you must use a tool, and cannot simply pour the water into the bowl!

What tools did you try? _____

What tool was most successful and why? _____



Learn more about chimpanzee tool use by seeing
Disneynature CHIMPANZEE in theatres!

Disneynature
chimpanzee