TEACHING AND LEARNING ABOUT THE GREAT APES

by Carolyn E. Gecan

Seeing apes in their natural habitat is an experience not readily available to the average person. For whatever reason, most of us will never have an opportunity to research great apes in Africa or Southeast Asia. Nor will most of us have the financial resources to travel with commercial tours into the rain forests of either continent. Thanks to computers and the internet, teachers have a number of interesting options for engaging their students in learning about the lives of the great apes.

Thinking About a Zoo Field Trip?
In some locales, a local zoological park may afford your students the chance to see apes in captivity. Some zoos even offer the public a glimpse of apes in near-natural habitats. However, many areas of the country either do not have a zoo within easy visiting distance or do not have a zoo with great apes in residence. If your region has a zoo with an exhibit featuring great apes and you are considering a field trip to see them, do your own research first. You might want to begin by visiting the official web site of the Association of Zoos and Aquariums (AZA), an American organization (http://www.aza.org/accreditation) or the World Association of Zoos and Aquariums (http://www.waza.org/home/index.php?main=home). Is your local zoo accredited? If yes, check your zoo’s official web site. Is there a great ape exhibit? If yes, and there is live “web cam” coverage of its apes, monitor the site off and on for a few days. Would visiting these animals be beneficial to your students’ anthropology education? Would visiting these animals enhance your curriculum? Consider the conditions of captivity. Would you be comfortable taking your students to see the apes on display? If the local zoo is not accredited, try to find out why. Definitely visit the zoo yourself. You may decide that you do not want to take your students there, even if it does house great apes.

If you decide you want to accompany your students to the local zoo, provide them with activities to focus their attention on specific and concrete observational activities. From your own experience you may have noticed that many zoo visitors tend to spend very little time at any one exhibit. Your students may be conditioned to “skim” the zoo, especially if the animals are not particularly active. Enriching the student experience by providing pre-visit activities, observational requirements while at the zoo, and post-visit follow-up activities will enhance student learning. Some zoos, such as the National Zoological Park (NZP) in Washington, D.C., (http://nationalzoo.si.edu/Audiences/Educators/) have Education Departments that provide extensive information to help teachers plan their zoo field trips. These departments may provide printable activities for students of varying ages. The materials provided by the NZP provide a model of items to look for when you check your zoo’s website.

The 20th Anniversary Issue of AnthroNotes (Spring 1998, vol. 20 no. 1, pp. 9-12) provides an excellent set of activities in its “Teacher’s Corner: Zoo Labs.” These labs were written by Alison S. Brooks for classes at George Washington University; and adapted for high school anthropology students by Carolyn E. Gecan. Since apes are usually only a very small part of an overall collection of species at a zoo, an anthropology teacher might want to broaden the goals of her students’ zoo visit to include all non-human primates on exhibit. The Zoo Labs were designed with this larger population of animals in mind. The chart “Classification of the Living Primates” that follows the lab activities can be helpful in extending student focus from apes to other non-human primates. The 20th Anniversary Issue can be downloaded free from the Smithsonian Institution Digital Repository (http://si-pdr.si.edu/dspace/handle/10088/3541). Even as simple an assignment as requiring students to sketch their favorite ape at the zoo can slow down the observation process and force students to look more carefully at the animals.

Because some of the vocabulary used in the Zoo Labs may be new to students, plan a vocabulary-based lesson to illustrate the new terminology. For example, one lab activity instructs students to focus on primate locomotion. Does everyone in the class understand the term “locomotion” when applied to human and animal movement? Students can observe various types of locomotion while viewing a video or video clips such as those mentioned below.

Informal and amusing activities for the classroom or outdoors help to illustrate a few aspects of ape anatomy
Students attempt knuckle walking in Carolyn Gecan’s class. Photo courtesy Carolyn Gecan.

and locomotion. These can be used as part of an introduction to the Zoo Labs, as follow-up to a film, or as post-field trip debriefing. All work best with students dressed in jeans and with feet bare. All can be done indoors or out, but if possible, outdoors is much more fun. Because the last activity with the bananas will potentially create a mess, you should have paper towels on hand!

- **Try knuckle-walking as gorillas:** First, instruct students to crouch in place with bare hands on the ground, with feet, not knees, also on the ground. At your signal, have the class “walk” forward a brief distance. After stopping them, ask about potential problems that might be encountered if bare hands were constantly in contact with debris on the forest floor. Next, with students still in a crouch, tell them to roll their hands into fists and rise up onto the backs of their knuckles, fingers completely tucked in. Tell them to “walk” a few more feet forward. After stopping, ask them how knuckle-walking benefits the gorilla’s hands. To extend this comparison of gorilla and human anatomy, ask the students to describe various difficulties encountered while attempting the knuckle-walk: are the head and neck comfortable as one tries to look forward while walking? How might gorilla anatomy differ from human anatomy where the skull is attached to the neck? What about arm and leg length? This might be a good time to discuss the differences between habitual bipedalism (humans) and habitual quadrupedalism (great apes) as modes of locomotion.

- **Try fist-walking as chimpanzees:** Follow the exercise above but with a chimpanzee variation. Maintain the crouch stance. But, instead of rising all the way up on the knuckles of the fist, tell students to tuck their fingers loosely under so that the heel of the hand is resting on the ground. They then “walk” forward a short distance. Again request observations from your students about their insights into chimpanzee anatomy that they noticed while attempting this challenging mode of locomotion. How else would a chimpanzee hand be different from a human hand? Where would calloused skin be most necessary? How might wrists be different?

- **Try brachiating as the “lesser apes,” gibbons and siamangs:** Tell your students to imagine they are going to cross the room on a set of monkey bars. After raising their arms overhead and “grasping” the imaginary first rung with both hands, instruct them to “swing” the right hand one bar for-

Students discover they don’t have opposable great toes during the “Banana Day Challenge,” a popular activity.
ward to the second rung—about two feet away. Then, follow with the left hand moving to the third rung. Instruct them to freeze in mid-swing. Ask them to comment on how their bodies would move in space if they were really brachiating from rung to rung. Ask for comments on how the bodies of habitual brachiators might be different from humans and gorillas.

- Try “toe-centric” manipulations of objects: For these activities you will need the following items for each student: a pen or pencil, a large sheet of plain newsprint, and a banana. First, have students sit on the floor with bare feet with the paper and pen in front of them. Tell them that they must not use their hands at all. Instruct them to pick up the pen by using only their toes, grasp the pen in a position to write, and then print their names on the paper. Have the students share their accomplishments. Next, after finishing the writing exercise, they should put aside their pens and place the bananas on the paper in front of them. The “Banana Challenge” is another hands-free activity. They must pick up their banana, peel it with their toes, and hold it so that it can be raised to the chin. Once most in the class have done their best, conduct a discussion of what went wrong and why the task was so difficult. At this point, ask the students which is more specialized: the human hand or the human foot? How can they tell that the foot is more specialized? To emphasize this fact, ask them to stand and take a few steps while observing what their great toes do as they walk. How does having a forward facing great toe make habitual bipedalism easier than having an opposable great toe? How does having an opposable great toe contribute to chimpanzee locomotion?

- Follow-up: A writing assignment in class following the activities described above will enhance the experience for your students. Some of the discussion topics can be used as writing prompts. They can also serve as springboards for group or individual research projects and presentations on human and ape anatomy, evolutionary connections, and investigations of other non-human primates.

It's not easy if you don't have opposable toes! Writing activity in Carolyn Gecan's anthropology class.

Sources for “observing” the great apes in your classroom

Because so many students are eager and savvy internet users, you can develop lessons that draw upon these interests and skills. Many accredited zoos in our nation and elsewhere have “critter cams” trained on certain enclosures. Others provide a repository of short video clips that showcase specific animals and/or species. Students can “tour” many more of these on-line primate exhibits than would be possible on a local field trip to just one zoo. Provide your class with a web listing of such opportunities and allow them to visit with supervision. As they do, suggest they keep a log of the apes encountered, the activities they see, and anything else pertinent to the unit you are teaching. Plan virtual visits to various zoos by using the links provided at the AZA site (see page 8). A quick sampling:

- Zoo Atlanta's animal videos collection includes six very short pieces starring gorillas and orangutans (http://www.zooatlanta.org/).
- The San Diego Zoo’s “Absolutely Apes” page (http://www.sandiegozoo.org/zoo/ex_absolutely_apes.html) features seven orangutans and three siamangs living in a new, lush environment with enough room for the animals to swing freely. This zoo’s “ape cam” gives on-line visitors an opportunity to observe these animals as they go about their daily lives.
The Bronx Zoo provides access via its “Distance Learning Expeditions.” Read about the program “Gorillas, Gentle Giants in Crisis” on the Expeditions page (http://bnxzo.com/bz-education/distancelearning/).

In addition to the AZA members who provide access to materials on-line, there are very useful resources located at the Great Ape Trust (GAT) web site (http://www.greatapetrust.org/index.php). This particular site is rich with video clips, readings, web links, and scientists’ reports on their research into the minds of the great apes: bonobos, chimpanzees and orangutans. An entire unit could be centered on this one site alone. Sue Savage-Rumbaugh, whose research focuses on ape communication, intelligence, and society narrates a video about Kanzi, a bonobo, and other bonobos in the wild at http://www.ted.com/index.php/talks/view/id/76. When this talk was filmed, Kanzi and the other great apes in Savage-Rumbaugh’s research group resided at the Language Research Center on the Atlanta campus of George State University. Since then the apes and researchers have moved to the Great Ape Trust and more footage can be seen at the GAT web site. In particular, she can be observed wearing a mask while conversing with a bonobo, in order to remove any facial cues she might inadvertently provide for her research subject (http://www.greatapetrust.org/research/srumbaugh/rumbaugh.php#). Other resources:

- Access to a group of National Geographic ape videos with narration is provided at http://video.nationalgeographic.com/video/player/animals/mammals-animals/apes/gorilla_lowland_tools.html?source=G2114c&kwid=ContentNetwork1008198085 Some of the videos may be distressing to younger or more sensitive students. The topics covered on the second page include short videos on poaching and the recent executions of gorillas in Congo.

- For students who want to learn more about the research of Roger and Deborah Fouts with five chimpanzees who were taught American Sign Language, direct them to the Chimpanzee and Human Communication Institute (http://www.cwu.edu/~cwuchci/visitor_information.html) and its companion site, Friends of Washoe (http://www.friendsofwashoe.org/). Both offer photos, video clips, sample curricula for teachers and three webcams situated in three different parts of the chimps’ home. Even though Washoe died in 2007, and her companion Moja in 2002, these web sites are well worth a visit and provide information about all five animals. The printable “Chimpanzee Facial Expressions” hand-out is a hoot.

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