

Humans:

Our Most Familiar Primate

A Five-Lesson Elementary Curriculum by Katherine Franz



INTRODUCTION

Often when we consider the massive biodiversity present on planet Earth, we think of humans as distinct from other animal life. Yet *Homo sapiens* are complex and fascinating creatures, and it is worthwhile to think about the ways we are similar and different from other organisms. How did humans evolve? What makes us unique? Who are our closest relatives? This mini-curriculum consists of five short lesson plans that intend to engage elementary-age students with questions about species. Using the framework of biological anthropology, we will first orient ourselves among other Great Apes in the primate order. Next we will explore human morphology, our flexible diet, and our systems of social living. Finally, we will address one of humanity's most distinctive features-- our dependence on culture. My hope is that students will become curious about our day-to-day lifestyles as humans that we naturally take for granted, and view them as an interesting piece of the diverse tree of life.

Lesson Plan #1

Humans and Other Primates

Information Summary:

Humans belong to a group of mammals known as primates. On the whole, primates tend to have large brains, interact in social groups, and use vision as a primary sense (many other animals use smell). Some primates spend more time on land than in the trees, but we all have specialized adaptations for climbing. It is a common misconception that primates are synonymous with “monkeys” -- in reality, true monkeys only make up a single family of primates. The other living primate families include lemurs, galagos, lorises, tarsiers and apes. Humans are Great Apes, along with chimpanzees, bonobos, gorillas, and orangutans. We all descended from a common *ancestor*, making us close *relatives*. Scientists can look at our living relatives for hints about what a common ancestor might have been like.



Objectives:

1. Students will understand that humans are classified as mammals and as primates.
2. They will be able to name a few key features of primates.
3. Students will learn about the family of Great Apes.
4. Students will recognize the difference between an ancestor and a relative, and how this applies to comparative primate studies.

Procedure:

-Open with Discussion: What animal are you most familiar with? Responses are likely to include pets, animals viewed at the zoo, seen on television, etc. Remind students that humans are a kind of animal too! Humans are a type of *primate*.

-Primates: Make the distinction between monkeys and primates, and point to the above features that all primates share. Have students seen or read about specific species of primates?

-The Great Apes: Explain that the Great Apes are a smaller group within primates. The Great Apes include gorillas, orangutans, chimpanzees, bonobos, and humans. Displaying photos from the internet may be helpful.

-Relatives and Ancestors: Ask students to talk about the difference between ancestors and relatives. What do they mean in the context of their own families? We can use these words to talk about the relatedness of species. An ancestor is a species that gave rise to another. A relative is a species that shared a common ancestor. Explain the importance of this distinction to primate observational studies.

Activity:

-Video journaling: This activity gives the class an opportunity to observe the behavior of another Great Ape primate. Play the linked [video](#) from the Jane Goodall Institute, instructing students to write down observations or draw quick pictures. Ask your students questions such as:

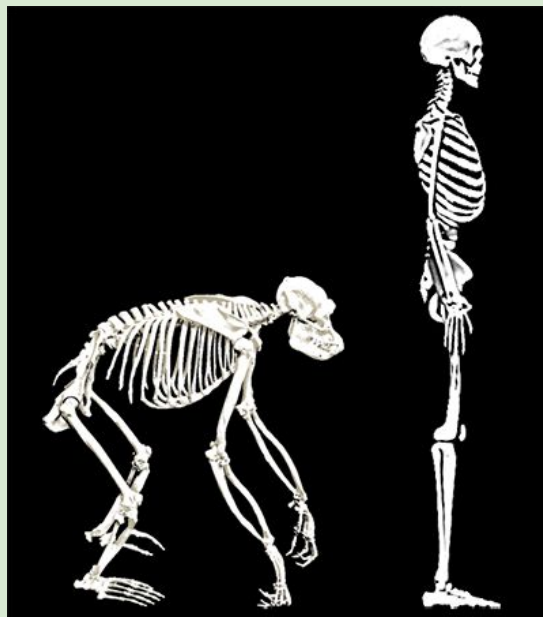
- What behaviors did the chimpanzees show that were similar or different from humans?
- How did they use tools?
- What was the importance of teaching?

Lesson Plan #2

Head, Shoulders, Knees, and Toes: Human Morphology

Information Summary:

Humans share many of the same bodily characteristics of other primates. We have long, flexible arms and legs with joints at the knees and elbows. This enables us to use many different kinds of motion (climbing, crawling, jumping, running) to move around. Another important trait of primates is our ability to grasp things with our hands and feet. Most other primates actually are better than us at grasping with our feet. We use them for walking, because we are bipedal (move around on two legs). Humans have a very large brain, even compared with other primates. However, we are born very small and immature. Our brains, along with the rest of us, develop a great deal outside of the womb. This is a reason why humans have such long childhoods.



Objectives:

1. Students will identify key morphological traits of primates.
2. They will understand that humans are the only primate to walk primarily upright, and that our hands and feet reflect this.
3. They will recognize that humans develop very large brains, but are born very small with lots of growing up (childhood) to do.

Procedure:

-Open with Discussion. What do primate bodies look like? Students should be familiar with the appearance of some primates. If helpful, showing more pictures can aid in this brainstorming process. As students suggest their own descriptions, make sure to mention the above characteristics of primates, and their importance in moving around (climbing in particular).

-Hands and Feet: Make clear that although humans and other primates have special grasping adaptations in their hands and feet, most other primates other than humans have feet that are much more similar to hands (for example, they have thumbs). Ask students if they can suggest a reason for this.

-Bipedalism in Humans. The major reason for foot-hand differentiation in humans is bipedalism, the act of habitually walking upright on two legs. Humans are the only primate to be primarily bipedal. What might be the benefits of walking, rather than climbing? (Hands are free, can in areas without trees).

-Big Brains, Small Babies: Explain that all primates have large brains, but humans have exceptionally large brains. What does this mean? Humans possess a high level of intelligence that helps them respond to their surroundings. However, babies are born with small brains inside a small body. Humans spend a long time growing and developing outside of the womb after they are born.

Activity:

-Bipedalism in Action: Have students run “time trials” for two different tasks: moving a pencil from point A to point B (using hands first, and then toes), and walking from point A to B (on two legs, and then on arms and legs (suggest “knuckle-walking”)). Which ways are humans more efficient? Which way do you think other primate species would be most efficient? What does this tell us about the way our body works?

Lesson Plan #3

sapien Snacktime: The Human Diet

Information Summary:

All animals are consumers, meaning that they get energy by eating living things. Consumers can be classified as carnivores, herbivores, or omnivores. Humans are omnivores, and are characterized by flexible diets that include all sorts of food sources (meat, fish, fruits and veggies, nuts and seeds, and even insects!). Our primate ancestors ate mostly a vegetarian, herbivore diet, as do most primates living today. All organisms are adapted to consume food sources that are available in their environments. We are the most geographically widespread primate-- the fact that humans can consume such a wide variety of foods has helped them live in environments all over the world.



Objectives:

1. Students will understand the differences between herbivores, omnivores, and carnivores, and name an example of each.
2. They will learn that most other primates each all vegetarian diets, and that humans have a particularly flexible range of foods.
3. They will relate the concept of diet with local food sources and geographic range.

Procedure:

-Open with Discussion: How do animals get their energy? Plants get it from the sun, but animals get it by consuming plants and other animals. Explain the difference between herbivores, carnivores, and omnivores. Ask students to name a few examples that might fit each category (hint: most large cats are carnivores, most other large mammals are herbivores, and some medium-sized are omnivores (like sloths, chipmunks, rats, racoons)).

-What do humans eat? Students should recognize that humans are, in general, omnivorous (although we can survive with a plant-based diet as well). Begin generating a brainstorming list of the types of foods that humans eat, naming each of the sources listed above.

-Primate diets: Ask students what they think other primates eat. They may find it surprising that even very large and muscular primates (think gorillas) are mainly plant eaters! Popular foods among primates include fruits, nuts and seeds, and leaves, which are all abundant in the rainforests that most primates live in.

-Food and environment: It's important that an organism eats foods that can be found in the natural habitat. Some animals get nearly all their energy from one food source-- pandas, for example, eat almost exclusively bamboo. Note that the ability to eat many different foods has allowed humans to spread out to different environments. From fishing in the arctic to harvesting fruits from the rainforest, dietary flexibility has allowed humans to live all over the world.

Activity:

-Lunchtime tracker: This activity helps students see the variety of foods that humans consume on a day-to-day basis. Keep a tally of the different kinds of foods students had as part of lunch during the day (i.e. how many students ate dairy? Grains? Meat? Vegetables? Fruit? Nuts? etc.)

- What kind of food was the most common?
- Why is variety important? (different foods have different nutrients to keep us healthy).
- What is your favorite kind of food group to consume?

Lesson Plan #4

‘Cause Your Friends are My Friends: Social Living

Information Summary:

Social living is an adaptive lifestyle of many different kinds of animals (dolphins, rodents, wolves, elephants, even some insects). Other animals are solitary, spending most time after birth on their own (bears, cats).

Although a great deal of variation exists between individual species, most are primates are social. Social animals spend lots of time together in groups and form close bonds with other members of the species. Humans are one example of a very social species. We typically live in family groups, and like to spend time with our friends learning and playing. Other species, such as the other Great Apes, have similar lifestyles. An important part of social living is communication with others. Many primates can communicate with one another using vocal calls, facial expressions, and motions. Humans are unique in that we also use speech and language.



Objectives:

1. Students will understand the meaning of social living, and name some possible pros and cons of living in groups.
2. They will understand humans as highly social creatures.
3. They will identify ways that humans and other animals communicate.

Procedure:

-Open with Discussion: What does it mean to be social? What do you think a social animal is? Explain the difference between social and solitary animals, and name a couple examples. See if you can discuss how aspects such as “sharing” and “safety” might constitute both pros and cons of social living.

-Humans are a social primate: Explain that most primates are social, and that they share some of the same modes of living (family, bonds with others in the group) and social activities (learning, games, grooming, sleeping) as humans.

-Communication: Explain that being able to communicate, or exchange information, is an important component of social living. How do other primates communicate with one another (see above)? How is human communication unique with language and what does that enable us to do?

-Honey bees as social animals: One interesting example of social insects are honey bees. See if students can name where bees live (together in a hive), how they communicate (waggle dancing to indicate food sources), and what kind of social structure they have (a queen, workers, drones). Here is a quick [video](#) from Oregon State University on bee communication.

Activity:

- “Social Media”: This activity gives the class an opportunity to reflect on how many people they interact with, and what kinds of things they do with others. Ask students to think about one social activity and who participates, and then make a drawing or other artistic media to show it. Have them share their social activities with others. Examples might include eating with family, playing with a friend or sibling, learning at school with classmates, etc.

Lesson Plan #5

Creatures of Culture

Information Summary:

While no single definition exists for something as complex as “culture,” anthropologists can think of it as the collection of beliefs, ideas, customs and traditions that characterizes a group. It’s made possible by our social nature combined with high levels of cognition. While some other animals, including many primates, have “culture,” human cultures have layers of complexity and affect us all of the time. Culture impacts the clothes we wear, the food we eat, and the way we sleep. It’s also reflected in our creative works of art and writing. Although humans are all part of the same species, there can be many different human cultures, or ways of living. Learning about the diversity of human cultures teaches us that there is no single “right” way to be a human!



Objectives:

1. Students will understand that culture is developed as a result of high cognitive capabilities combined with a very social nature.
2. They will learn that humans have a complex and layered culture that affects most aspects of daily living.
3. They will recognize that all humans share membership in a single species, we are members of different cultures. This creates diversity of peoples around the world and in the community.

Procedure:

-Open with Discussion: Do you think that our biology determines when we sleep? What about which foods we eat? The clothes we wear? While humans have biological constraints (i.e., we need food, sleep, shelter, etc.) there is significant variation in the way we meet these requirements.

-What is Culture? Consider the above definitions of culture and what culture includes. Discuss whether or not other animals have culture. Do they have traditions? Can they learn from one another? Does culture impact them on a daily basis to the same extent that it impacts humans?

-Cultural living: Explain the different ways we see culture in our everyday lives. How is culture reflected in the mundane (eating, sleeping, moving) as well as the creative (books, art, special ceremonies)?

-No One Way: Ask students to think about the ways that humans are all the same, and the ways we are different. Biologically, we are all part of the same species-- our bodies (including brains) have similar needs and work in similar ways. But there are many different cultural ways of being a human. This is what allows for great diversity and exchange of ideas!

Activity:

-All Are Welcome [Picture Book](#): This book is a fun way to talk about cultural exchange of food, traditions, and ideas within the classroom.

- What were the elements of culture that were talked about in the book?
- Did everyone come from the same culture or from different cultures?
- Are there any traditions from your culture or family you'd like to share?
- Was there a single "right" culture to be?