

Lesson Title: Being Human

Grade Levels: 5-8

Time Allotment: Two 45-minute class periods

Overview: In this lesson, students view and discuss video segments from the PBS program *The Human Spark*, as they learn about what distinguishes human beings from other species. In the Introductory Activity, students list similarities and differences between human beings and other species. In Learning Activity 1, students explore how human thought differs from that of chimpanzees and other species. In Learning Activity 2, students explore a variety of traits/abilities (including language & symbols, social life and the ability to walk upright) and learn how they have evolved in humans over millions of years and how these traits/abilities distinguish humans from other animals. In the Culminating Activity, students compose essays about what makes humans unique.

Subject Matter: Science; Psychology

Learning Objectives:

Students will be able to:

- Compare and contrast human traits/abilities with those of other species.
- Describe how human thinking differs from that of other species.
- Explain one specific human trait/ability and describe how it has evolved over time.
- Discuss at least four ways in which humans differ from other species.

Standards:

National Science Education Standards

www.nap.edu/catalog.php?record_id=4962

Grades 5-8:

Content Standard C: Life Science

As a result of their activities in grades 5-8, all students should develop understanding of:

- **Regulation and Behavior**
 - All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.
 - Regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive.
 - Behavior is one kind of response an organism can make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels, including cells, organ systems, and whole organisms.

Behavioral response is a set of actions determined in part by heredity and in part from experience.

- An organism's behavior evolves through adaptation to its environment. How a species moves, obtains food, reproduces, and responds to danger are based in the species' evolutionary history.
- **Diversity and Adaptations of Organisms**
 - Millions of species of animals, plants, and microorganisms are alive today. Although different species might look dissimilar, the unity among organisms becomes apparent from an analysis of internal structures, the similarity of their chemical processes, and the evidence of common ancestry.
 - Biological evolution accounts for the diversity of species developed through gradual processes over many generations. Species acquire many of their unique characteristics through biological adaptation, which involves the selection of naturally occurring variations in populations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.
 - Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. Fossils indicate that many organisms that lived long ago are extinct. Extinction of species is common; most of the species that have lived on the earth no longer exist.

National Standards for Psychology Curricula
www.apa.org/education/k12/national-standards.aspx

Standard Area IVC: Thinking and Language

- **CONTENT STANDARD IVC-1: Basic elements comprising thought**
Students are able to (performance standards):
 - **IVC-1.1 Define thinking as a mental process involved in the manipulation and understanding of information.** Students may indicate this by (performance indicators): a. Identifying mental images and verbal symbols as elements that comprise thinking.
- **CONTENT STANDARD IVC-4: Theories and developmental stages of language acquisition**
Students are able to (performance standards):
 - **IVC-4.3 Speculate on whether animals acquire and use language.** Students may indicate this by (performance indicators): b. Relating conclusions drawn from early attempts to teach language to primates; c. Discussing contemporary views on whether animals can acquire language.

Media Resources

The Human Spark, selected segments

- Human vs. Chimp Thinking
A discussion about how human thought differs from that of chimpanzees.
- Beyond the Present
A look at humans' unique ability to reflect upon events that have happened in the past and think about things that could possibly happen in the future.
- Thinking about Thinking
A discussion about the ability of humans to think about others' thoughts.
- Insight and Imagination
An overview of how insight and imagination distinguish humans from others.

Additional segments which students can use in their research for Learning Activity 2:

- A Matter of Size
A look at the brains of a rat, monkey, chimp and human and why some brains are bigger than others.
- Cooperation
A brief look at the cooperative and social nature of humans.
- Human Language
A look at the difference between human language and other species' communication systems.
- The Art Spark
An exploration of early cave art and what it tells us about our ancestors.

Website:

What does it mean to be human?

<http://humanorigins.si.edu/>

This Smithsonian Institution website explores what it means to be human and provides a variety of information, photographs and web interactives. The site features a "human characteristics" section, which can be used in Learning Activity 2. This section focuses on human characteristics which have evolved over the past 6 million years:

<http://humanorigins.si.edu/human-characteristics>.

Materials

For the class:

- Computers with internet access
- Computer, projection screen and speakers (for class viewing of online/downloaded video segments)

Before the Lesson

Prior to teaching this lesson, you will need to:

Preview all of the video segments and websites used in the lesson.

Download the video clips used in the lesson to your classroom computer(s) or prepare to watch them using your classroom's Internet connection.

Bookmark all websites which you plan to use in the lesson on each computer in your classroom. Using a social bookmarking tool such as [delicious](#) or [diigo](#) (or an online bookmarking utility such as [portaportal](#)) will allow you to save the links in one location.

Introductory Activity

1. Explain that in today's lesson students will explore what makes us human. Ask each student to think of one word to answer the question "What makes us human?" and to write that word down on a sheet of paper. Once everyone has written a word, ask the students to hold up their words to reveal them to the rest of the class. Ask for volunteers to discuss their word choices.
2. Divide students into pairs or small groups. Assign each group an animal. Ask each group to write down similarities and differences between humans and the group's assigned species. Encourage each group to list at least 5 ways humans differ from that animal, as well as five similarities. Some possible animals to include are: ant, bird, cat, chimpanzee, dog, fish, lion, monkey, parrot, snake.
3. Once groups have completed their lists, ask students to share their thoughts with the rest of the class. Create a two-column list with similarities in one column and differences in another. Write down all the similarities and differences the students describe.
4. Once all the groups have shared their thoughts, look over the list with your students and ask them to identify the main ways humans differ from most of the species on the list. Create a new list detailing the ways humans differ from other species. Discuss the list and ask the students if they want to add any additional traits to the list.

Learning Activity 1

1. Ask students which animal they think is the most similar to human beings. Let students know that one species which is very closely linked to us is the chimpanzee, with 99% of its genetic makeup being the same as in humans. Explain that humans and chimpanzees also share a common ancestor.
2. Let students know they will be watching a video segment from the PBS program, ***The Human Spark***, which compares the thought processes of humans and chimpanzees. Ask students to discuss how they think human and chimpanzee thoughts might be similar and how they might be different.
3. After students have shared their thoughts, explain that you are going to play a video segment featuring Daniel Povinelli, the Director of the Cognitive Evolution Center at the University of Louisiana, who conducts research with human children and chimpanzees. Ask students to identify what Povinelli believes are similarities and differences between the ways humans and chimpanzees think.
4. Play Human vs. Chimp Thinking. After playing the segment, ask students to discuss what Povinelli believes are similarities and differences between the ways humans and chimpanzees think.

Possible points to include in the discussion:

- *Similarities: Both can predict potential direct consequences of actions- for example, taking food away from another. Both can think about things they see, taste and touch.*
 - *Differences: According to Povinelli, humans can reflect upon their thoughts, while chimps probably cannot. Humans are able to reflect upon unobservable things while chimps cannot. Humans think about abstract things such as God, ghosts and gravity, while chimps probably do not.*
5. Explain that you will now be showing a video segment about human thought. Ask students to identify the ways in which human thinking differs from thinking in other species, as they watch the segment.
 6. Play Beyond the Present. After showing the segment, ask students to write down their thoughts about how human thinking differs from thinking in other species.
 7. After students have recorded their thoughts, explain that you will now be showing another segment about human thinking. As they watch the segment, encourage students to record additional thoughts they have about how human thinking differs from that of other species.

8. Play Thinking about Thinking. After playing the segment, ask students to discuss what the last two segments showed about how human thinking differs from thinking in other animals.

Possible points to include in the discussion:

- *Other species can reflect upon the present moment and think about how to respond, while humans can think about the present, and also think about the past and what might happen in the future.*
- *Humans can think about how to prepare for the future.*
- *Humans can learn from mistakes without making them, by thinking about the potential consequences and making decisions based on those thoughts.*
- *Humans can think about other people’s thoughts to a much greater extent than other species. Some species, like the great apes, appear to be able to understand what someone else is thinking, but have trouble reflecting upon what someone might be thinking about someone else’s thoughts. Humans, however, can reflect upon what other people are thinking about other people’s thoughts. A human, for example can think about what Person B might be thinking about Person C’s reflections about what Person D is thinking about Person E’s thoughts. Other species do not seem able to reflect upon others’ thoughts to this degree.*

9. Ask students to reflect upon and summarize how they think human thought differs from thinking of other species.

Learning Activity 2

1. Review the list students compiled earlier of the ways humans differ from other animals. Ask students to add new items to the list, if desired.
2. Explain that now students will explore the different ways humans differ from other species in more detail. Divide students into small groups and assign each group to one or more of the following topics:
 - Walking Upright
 - Tools & Food
 - Bodies
 - Brains
 - Social Life
 - Language & Symbols

Encourage students to explore the “Human Characteristics” section of the Smithsonian Institution’s “What does it mean to be human?” website at <http://humanorigins.si.edu/human-characteristics> to find information about their topics.

3. Ask students to find out the following about their assigned topics:
 - How does this trait/skill distinguish humans from other species?
 - How has this trait/skill evolved in humans over time?

Note: The following brief segments from *The Human Spark* can be helpful to groups researching the topics, “brains,” “social life” and “language & symbols”:

- ***For information about brains:*** A Matter of Size
- ***For information about social life:*** Cooperation
- ***For information about language & symbols:*** Human Language and The Art Spark

4. After students have conducted their research, ask them to share information about their assigned categories.

Culminating Activity

1. Play Insight and Imagination. After showing the segment, ask students to discuss some of the observations Alan Alda makes about how humans differ from other species.
2. Ask students to reflect on everything they have learned during the lesson. Ask each student to write an essay outlining the key ways humans differ from other species.
3. After students have completed their essays, ask students to share their thoughts with the class.
4. Lead a discussion about what makes humans unique.