

# FOR TEACHERS: PRE-VISIT ACTIVITIES grades 9-12

**How to Use:** Try any or all of the activities below in advance of your visit to the Spitzer Hall of Human Origins. You can also photocopy the worksheet on the opposite side of this page and distribute it to students to use as they walk through the exhibition. They'll need a pen or pencil and a hard surface to write on.

## What Is Human?

Initiate a class discussion over the question: "What does it mean to be human?" Encourage scientific and cultural perspectives.

## Evolution and Human Diversity:

Share the sidebar in this guide on "Evolution and Human Diversity" with your students. Discussion points:

- How are human beings different from one another? How are they alike?
- In what ways are human traits "mixed up" among individuals? Why does this occur?
- Do you think genes define race? Why or why not?

## Explore Bipedalism: Have students...

**Walk:** Walk as you usually do, then walk so your toe hits the ground before your heel. Why do you think the heel-first stride is easier? Humans have an arch in their foot that acts like a spring. Apes have flat feet. How is the arch important in walking upright?

**Balance a skull:** Classrooms that have access to models of human and animal skulls can try the "broomstick test": Insert a stick into the foramen magnum of each skull. Balance each skull on the stick. What does the tilt of the head suggest about the ability of the species to walk upright?

**Compare skeletons:** Print out and photocopy images of three skeletons—chimpanzee, human, and Neanderthal—from [amnh.org/education/humanorigins](http://amnh.org/education/humanorigins). What differences do you see between the skeletons? Similarities? How are the skeletons adapted for walking on either two or four legs?

## You can correlate your visit to the Spitzer Hall of Human Origins to the NEW YORK STATE THE LIVING ENVIRONMENT CORE CURRICULUM STANDARDS

### Standard 1

**Key Idea 1:** The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing and creative process.

Performance Indicators: 1.1a, 1.1b, 1.2a, 1.4a

### Standard 4

**Key Idea 2:** Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.

Performance Indicators: 2.1b, 2.1c, 2.1e–j

**Key Idea 3:** Individual organisms and species change over time.

Performance Indicators: 3.1a–h, 3.1k, 3.1l

**Key Idea 4:** The continuity of life is sustained through reproduction and development.

Performance Indicators: 4.1a, 4.1e

# FOR STUDENTS: DURING YOUR VISIT

## Skull Sketching:

1. Observe skulls on the "Our Family Tree" exhibit, or pick a skull elsewhere in the hall. Note its species and date below, then sketch the skull.
2. Label the **cranium**, **forehead**, **brow ridges**, **teeth**, and **chin**.
3. Repeat steps 1-2 with another skull.
4. On the back of this sheet, describe how the shape and structure of the hominid skull changed over time.

Species: \_\_\_\_\_

Species: \_\_\_\_\_

Skull Date: \_\_\_\_\_ years old

Skull Date: \_\_\_\_\_ years old



## Tracking DNA:

Find the panel "DNA: A Record of the Past" in the first section of the exhibition. What type of DNA is used to track:

Female ancestry? \_\_\_\_\_ Why? \_\_\_\_\_

Male ancestry? \_\_\_\_\_ Why? \_\_\_\_\_

## Map Migrations:

1. Find the diorama scene with the hyena. (The human is *Homo erectus*.) Read the lower panel to learn about the "Out of Africa" hypothesis of how modern humans evolved and migrated globally.
2. Go to the Earliest Migrations map to see how scientists picture the "Out of Africa" hypothesis.
3. Use the map to draw each of the five waves of migration. Label the approximate date of each wave.

