By Hannah Tytus

Arcadia-Overview

Third, Fourth, and Fifth Graders

Seven Sessions

Previous Lesson: Evolution

Lesson: Comparative Osteology: Our Place in the Primate Family Tree

*Materials*

* Cooked crickets (optional)
* Skull casts (we used skulls of a chimpanzee, Australopithecus afarensis, Homo erectus, Homo Neanderthalensis, and a modern human)
  + *NOTE:* We understand that skull casts are expensive and difficult to acquire. If no casts are available, showing pictures of chimpanzee and human anatomy (i.e. hands, feet, upright skeletons, skulls, etc.) side-by-side can help students understand how we conclude that we are most closely related to chimpanzees.

*Review*

* Living things *adapt* to their environment to survive
* Sometimes these *adaptations* are passed down to the next generation
* Over time, these changes accumulate and a whole new species can be formed.

*Focus*

* How are we related to primates, including extinct primate species? How do we use bones to confirm this relationship?

*Learning objectives*

* To define and understand what classifies a primate.
  1. A primate is an omnivorous mammal characterized by having hands, hand-like feet, forward-facing eyes, varied locomotion, and complex behaviors.
  2. Primates are typically tree-dwellers.
* To know that humans are apes (not monkeys), and therefore also primates.
  1. Humans are considered primates because we fit all the characteristics defined above.
* To understand the function of a phylogenetic/evolutionary tree
  1. An evolutionary tree-or phylogenetic tree-is a diagram that shows the evolutionary relationships between different species.
  2. We shared a common ancestor with monkeys, but we are not descended from them.
* To visualize the physical transition from the chimpanzees to *homo sapiens* by observing hominin evolution
  1. Hominin: the group of primates consisting of modern humans, extinct human species, and all of our immediate ancestors.
  2. Chimpanzees, bonobos, and any other nonhuman ape is not included in this.

*Guided Practice (Activity):*

* Observe different parts of human and nonhuman primate anatomy.
* Ask students to identify the differences and similarities.
* Ask: how could this change have been an adaptation to the environment?
  1. *Example*: Observing the hands and feet of apes, we can hypothesize that their long fingers helped them climb trees more easily.