



## Skeletons Reveal Human and Chimpanzee Evolution

hhmi | BioInteractive

Student Worksheet  
Click & Learn

### INTRODUCTION

This worksheet complements the Click & Learn [Skeletons Reveal Human and Chimpanzee Evolution](#) developed in conjunction with the 2011 Holiday Lecture Series *Bones, Stones, and Genes: The Origin of Modern Humans*.

### PROCEDURE

Follow the instructions below and answer the questions as you read through the Click & Learn. Click the arrow in the bottom-right corner of the screen to advance the slides.

#### Read Slide 2.

1. What is a phylogenetic tree used to illustrate?

**Read Slide 3.** Click on the video of Dr. White to listen to his description of the human branch of the tree of life.

2. Based on genetic evidence, humans are most closely related to which two species?
3. Are humans more closely related to gorillas or orangutans? State the evidence.

**Read Slide 4.** Click on the video of Dr. White to listen to his explanation of human evolution.

4. Charles Darwin proposed that modern humans directly descended from chimpanzees. Support or refute this statement with evidence from the video clip.

**Read Slide 5.** Click on the video of Dr. White to listen to his description of the human branch of the tree of life.

5. What is a hominid (or hominin)?
6. *Australopithecus* is an early hominid that is now extinct. Why does Dr. White contend that *Australopithecus* is not completely gone?

#### Read Slide 6.

7. Identify at least **two** sources of data that scientists can compare to determine the evolutionary relationships between two or more species.

**Read Slides 7 through 12.**

8. Bones are one anatomical feature that can provide a wealth of information. List **seven** things scientists can learn about an organism by examining its bones.

1.	
2.	
3.	
4.	
5.	
6.	
7.	

**Read Slide 13.** Click on the video of Dr. White to listen to his description of the discovery of *Ardipithecus ramidus*, or Ardi.

9. Once the finger bones of Ardi were discovered, why did the crew begin to excavate and sieve the surrounding area?

10. What was the point of marking the excavation site with small yellow flags?

11. Why did the excavation site for Ardi need to remain wet?

**Read Slide 14.** Click each of the anatomical structures to compare Ardi’s teeth, pelvis, and feet with those of chimpanzees and humans.

12. List the key features of each structure in the table below.

Anatomical Structure		Chimpanzee	<i>Ardipithecus</i>	Humans
Teeth				
Pelvis	Ilium			
	Ischium			
Feet				

13. State which conclusions can be drawn from each set of information.

Conclusions from teeth comparisons	
Conclusions from pelvis comparisons	
Conclusions from feet comparisons	

Click on “Continue to Summary” to go to Slide 15.

Read Slides 15 through 20. On Slide 18, click on the video of Dr. White discussing Ardi’s unique features.

14. Where does Ardi belong on the tree of life? State the evidence.

15. Based on your answer above, is Ardi the common ancestor of humans and chimpanzees? State the evidence.