


HOMINID ADAPTATIONS

Grade Level	Ideal for 6 th -8 th grade Appropriate for ages 12-15	
Exhibition	<i>Evolving Planet</i>	
Time	1 hour	

Overview

In this exploration, students will investigate the fossil remains of hominids to learn about how organisms have changed over time. Students will first identify characteristics of all hominids and then compare and contrast features of four different hominids.

Guiding Questions

What are characteristics of hominids? How are hominids alike and different?
How has the existence and characteristics of hominids changed over time?

Key Words

Adaptation - the process of genetic change within a population, as influenced by natural selection

Evolution - the process of change by which new species develop from preexisting species over time

Extinction - the disappearance of a species or a population

Connections to Standards

Next Generation Science Standard

Disciplinary Core Idea LS4.A: Evidence of Common Ancestry and Diversity

Anatomical similarities and differences between various organisms living today and between them and organisms in the fossil record enable the reconstruction of evolutionary history and the inference of lines of evolutionary descent. (MS-LS4-2)

Trip Tip: When students first enter an exhibition, encourage them to look around freely before asking them to concentrate on completing this guide. Becoming familiar with their learning space will help students focus.

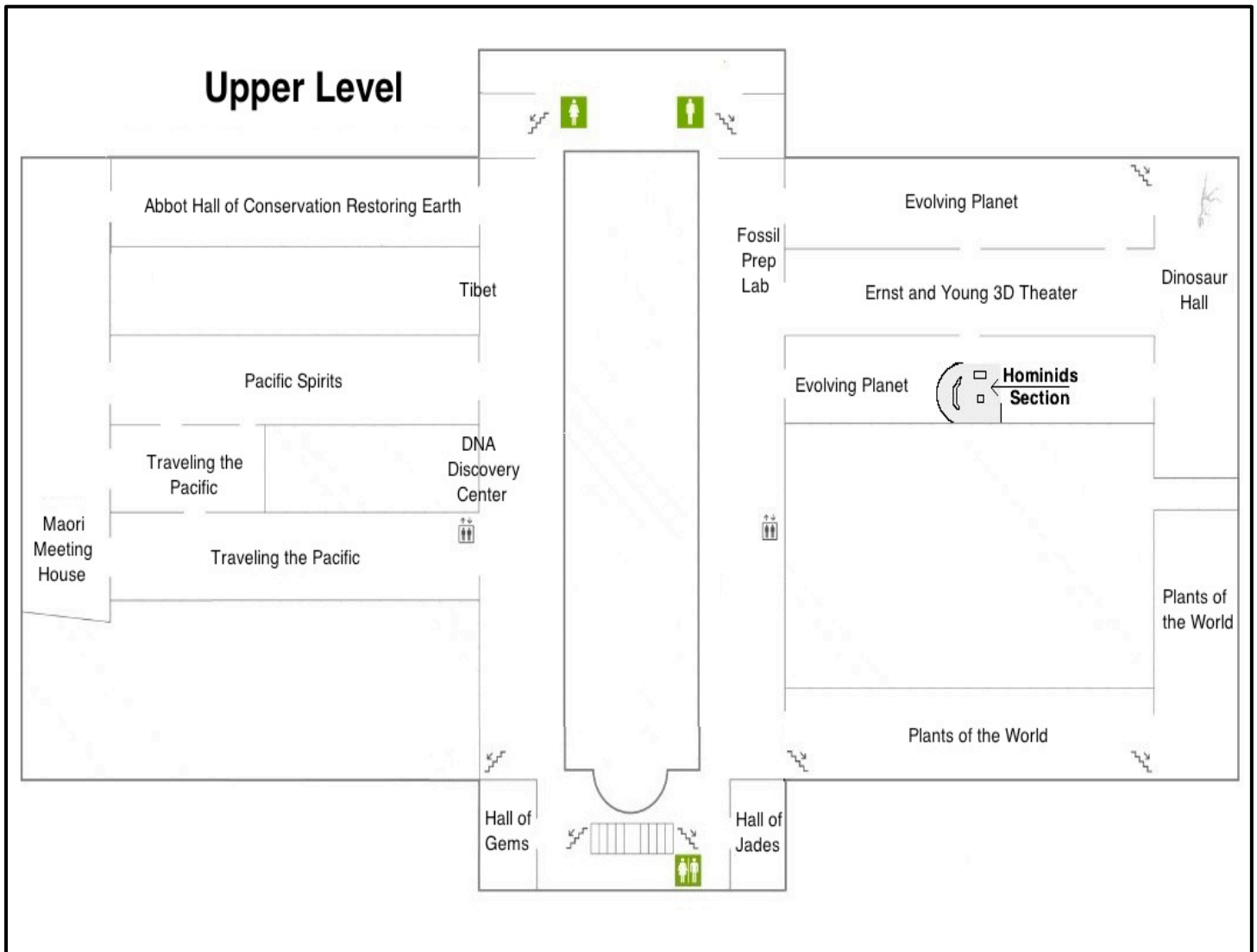
HOMINID ADAPTATIONS

Chaperone Guide

Map

Exhibition:

Evolving Planet (Upper Level)



If you have extra time, visit these related exhibitions:

Ronald and Christina Hall Of Birds (Main Level)

Reptiles and Amphibians (Main Level)

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Chaperone Guide

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Student Guide

Name _____

Think (before you explore) – Review the terms below

A **primate** is a mammal with specific traits that developed for life in the trees such as limbs for grasping, highly mobile digits, and forward facing eyes.

An **ape** is a *primate* with specific features such as no tail and very mobile hip and shoulder joints.

A **hominid** is a *primate* that evolved from *apes*. Hominids have evolved differently than apes because they are built to walk upright on two legs all the time.

Are you a hominid? (**Circle** one)

Yes

No

At The Field Museum you will explore the fossil remains of hominids to learn about how organisms have changed over time.

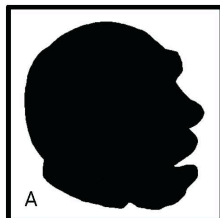
Observe and Explain (in the exhibition) – Part A

Travel to the ***Evolving Planet*** exhibition on the **Upper Level**. Find the **Hominids Section**, located just past the **Dinosaur Hall**, and complete the activity below.

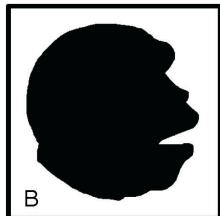
1. **Check off** the hominid skeletons below as you find them in the **Hominids Section**.

- ☐ *Australopithecus afarensis* (5.3-1.8 million years ago)
- ☐ *Homo ergaster* (1.8 million – 10,000 years ago)
- ☐ *Homo neanderthalensis* (1.8 million – 10,000 years ago)
- ☐ *Homo sapiens* (10,000 years ago - present)

As hominids, the species listed above have several features in common. However, there are also differences between hominid species. Carefully look at the differences in the brow and jawline of the profile of each hominid shown below. **Draw a line** to match each profile picture to the name of the hominid that it represents.



A



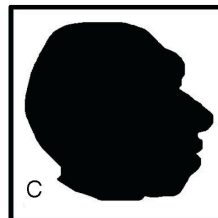
B

1. *Homo neanderthalensis*

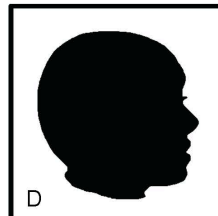
2. *Homo sapiens*

3. *Australopithecus afarensis*

4. *Homo ergaster*



C



D

Trip Tip: Before you begin, find a bench or a spot on the floor. Give the students an overview of this activity and ask them to complete the **Think** activity.

Trip Tip: If students want more information about what exactly a hominid is, look at the panels that are in the middle of the **Hominids Section** in the ***Evolving Planet*** exhibition.

Trip Tip: Have students observe the reconstructed models of the hominid heads in front of each case to complete the matching activity.

Answers:

- 1 = C
- 2 = D
- 3 = B
- 4 = A

Location Tip: Encourage students to walk quickly through the first part of the ***Evolving Planet*** exhibition, straight to the **Hominids Section**, where a model of Lucy, a hominid in a glass case, will greet you. Your group can return to the first part of the exhibition once you complete this activity.

HOMINID ADAPTATIONS

Chaperone Guide

Observe and Explain (in the exhibition) – Part B

In the **Hominids Section**, look at the model of the hand in front of each hominid. Use the ruler along the edge of this paper to **measure** the length and width of each hand. Based on your observations, fill in the chart below.

Hominid	Length (in.)	Width (in.)	Given its features, mark the most appropriate function of this hand
<i>Australopithecus afarensis</i>			<input type="checkbox"/> Thin fingers for precision with tools <input type="checkbox"/> Small curved fingers for climbing <input type="checkbox"/> Thick palms and fingers for warmth
<i>Homo ergaster</i>			<input type="checkbox"/> Thin fingers for precision with tools <input type="checkbox"/> Small curved fingers for climbing <input type="checkbox"/> Thick palms and fingers for warmth
<i>Homo neanderthalensis</i>			<input type="checkbox"/> Thin fingers for precision with tools <input type="checkbox"/> Small curved fingers for climbing <input type="checkbox"/> Thick palms and fingers for warmth
<i>Homo sapiens</i>			<input type="checkbox"/> Thin fingers for precision with tools <input type="checkbox"/> Small curved fingers for climbing <input type="checkbox"/> Thick palms and fingers for warmth

Observe and Explain (in the exhibition) – Part C

1. Find the model of Lucy. Lucy was built to walk on two legs but also spent time climbing in trees. What features of Lucy's body would make her good at climbing and moving through trees?

2. List 3 ways that Lucy's physical features are similar to modern humans (you!).

3. List 3 of Lucy's physical features that are different from modern humans.

Share and Compare (after you explore)

We (*Homo sapiens*) are the only hominids that live on Earth today. Why do you think that is? What might have caused the other hominids to become extinct?

Trip Tip: Find a quiet spot in the Museum to discuss the **Share and Compare** ideas or ask students to draw and write answers to these questions when they return to school.

Trip Tip: Encourage students to discuss and explain the reasoning behind the functions they choose.

Trip Tip: Encourage students to measure to the nearest half or quarter inch by creating additional marks on the given ruler if needed.

Trip Tip: Guide students to examine specific features of Lucy, such as: height, arm length, head shape, body hair, teeth, and finger shape and length.

Trip Tip: Scientists are still trying to answer the **Share and Compare** questions. Guide students to create possible explanations by thinking about how other species have become extinct, such as the passenger pigeon in 1914 and the dinosaurs 65 million years ago.

HOMINID ADAPTATIONS

Student Guide

Name _____

Think (before you explore) – Review the terms below

A primate is a mammal with specific traits that developed for life in the trees such as limbs for grasping, highly mobile digits, and forward facing eyes.	An ape is a <i>primate</i> with specific features such as no tail and very mobile hip and shoulder joints.	A hominid is a <i>primate</i> that evolved from <i>apes</i> . Hominids have evolved differently than apes because they are built to walk upright on two legs all the time.
Are you a hominid? (Circle one)	Yes	No

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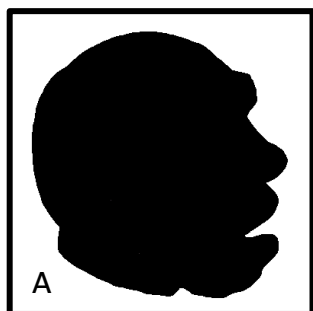
Observe and Explain (in the exhibition) – Part A

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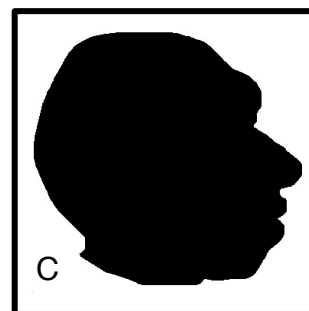
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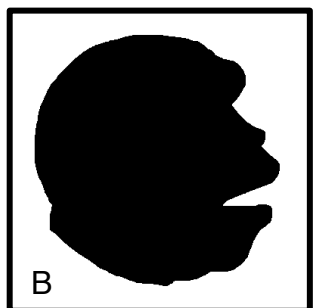
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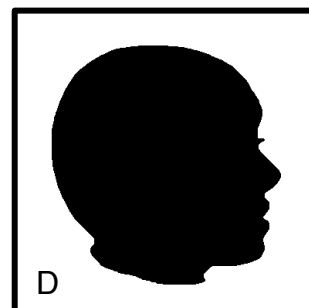


2. *Homo sapiens*



3. *Australopithecus afarensis*

4. *Homo ergaster*



Observe and Explain (in the exhibition) – Part B

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Share and Compare (after you explore)

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