



Short Film
Great Transitions: The Origin of Humans

hhmi | BioInteractive

Educator Materials

AT A GLANCE GUIDE

DESCRIPTION

The short film *Great Transitions: The Origin of Humans* highlights the most important hominid fossil discoveries of the past 50 years and the insights they provide into human evolution, focusing on three key traits: bipedality, tool use, and larger brains.

KEY CONCEPTS

- The fossil record details the history of life on Earth, including transitions from one major group of animals to another.
- DNA evidence indicates that the human lineage split from that of our closest relative, the chimpanzee, about 7 million years ago—a timing that is consistent with fossil evidence.
- Traits that distinguish modern humans from modern chimps include bipedality (the ability to walk upright on two legs), extensive tool use, and larger brains. Fossil evidence provides information about when and where each of these traits evolved.
- Tracing the evolution of distinct traits shows that, like other major transitions, the evolution of humans from quadrupedal apes occurred in distinct phases.
- Fossil evidence reveals that bipedalism arose over 4 million years ago and predates tool use and the evolution of larger brains by at least a million years.
- Fossils also provide evidence about the environment in which a species lived. For example, bipedalism evolved when humans were still living in forests and climbing trees.
- Finding and identifying fossils is difficult and time-consuming work. Almost every individual that lived on Earth left no fossil evidence of its existence.

CURRICULUM AND TEXTBOOK CONNECTIONS

Curriculum	Standards
NGSS (2013)	MS-LS4-1, MS-LS4-2, MS-ESS1-4, HS-LS4-1
AP Biology (2012–13)	1.A.4, 1.B.2
IB Biology (2009; 2016)	5.4.2, D.3.5, D.3.6, D.3.7–3.10; 5.1
Textbook	Chapter Sections
Miller and Levine, <i>Biology</i> (2010 ed.)	16.4, 19.1, 26.3
Reece <i>et al.</i> , <i>Campbell Biology</i> (AP ed., 9th ed.)	22.3, 25.2, 34.8

SUGGESTED AUDIENCE

This film emphasizes how scientists find fossils and use fossil evidence to determine when specific traits evolved. It is appropriate for students in middle school, high school, and college-level biology courses.

KEY REFERENCE

Smithsonian National Museum of Natural History. “What Does It Mean to Be Human?” Last modified October 24, 2014. <http://humanorigins.si.edu/>.