



THE HUMAN ANIMAL

An online resource for practical human evolution learning

**What are the differences between modern humans and our closest ancient relatives?
Did early humans walk upright on two legs?
And what can we actually say about the diet of prehistoric humans?**

By comparing the anatomy of modern humans with our closest living relative, the chimpanzee, and fossil human bones, we can answer these and other questions about our own species' development. Modern 3D scanning technology has made it possible to compare exact copies of scanned bones from living and extinct species. Scanning technology is used by paleontologists worldwide, and you can use the same methods for practical human evolution teaching on *The Human Animal*.

IT requirements

- *The Human Animal* is an online tool and requires a stable Internet connection
- Most browsers support *The Human Animal*, although full screen viewing in Chrome and Firefox may cause problems
- To use the 3D tool on *The Human Animal*, you need to install **Flash**
- The 3D tool is easiest to use if you have a large screen and a mouse, but smaller **Flash compatible** units (tablets etc.) will do

A valuable science learning supplement

The Human Animal offers a unique opportunity to use practical exercises and authentic scientific methods in science learning. The students do the exercises and based on their measurements, calculations, and descriptions, they will reach a conclusion and reflect on the evolutionary processes that have gone before the occurrence of modern humans. The students' learning processes are supported by a practical approach to human evolution learning. *The Human Animal* gives access to specific examples that can be used to discuss evolutionary concepts like speciation, evolutionary trees, fossils, dating of fossils etc. *The Human Animal* can also be used to teach other biological topics like physiology, genetics, and molecular biology.

The Human Animal - an online resource

- A unique 3D tool based on cranial scans from four species
- Three films about relevant topics
- Fact sheets with descriptions of four hominid species
- A teacher's guide
- A 3D tool quick guide

Explore The Human Animal

Examine and compare jaw- and tooth size, nose length, and the position of the great neck hole from four living and extinct hominids:

- *Homo sapiens* (modern humans)
- *Homo erectus*
- *Australopithecus afarensis* ("Lucy")
- *Pan troglodytes* (Chimpanzee)



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How to use The Human Animal

- Arrange the students into groups of two. Each group may use one or two computers
- Chose an assignment (e.g. nose length) to be solved by all groups individually, and discuss the results in class. Afterwards, the students choose three to five assignments
- Give the students 90 minutes to do the assignments
- If they want to explore further, the students can use the 3D tool and watch the movies at home

Use The Human Animal while you teach

- **In the beginning:** as starting point, reference, and motivation
- **Halfway:** as evaluation and motivation for further work
- **At the end:** for repetition, reflection, and class round-up

Student preparations

To get the most from *The Human Animal* we recommend that:

- Students are prepared corresponding to the level of teaching *The Human Animal*
- Students follow the quick guide
- All groups learn how to use the 3D tool before doing the assignments

Teaching considerations

We recommend that you:

- Learn how to use the 3D tool in advance so that you can help the students with technical issues
- Consider how much background information the students need beforehand, and what questions need to be open and serve as motivation for the assignments and discussions
- Consider what specific output you want from teaching *The Human Animal*, and make the goals clear to the students before teaching

Obstacles

Experience shows that the following can be difficult when you teach evolution, human evolution, and *The Human Animal*:

- Using the grid lines correctly (e.g. measuring the nose length)
- Figuring out the structure, logic, and limits of a family tree
- Being confident with dating methods and the term dating
- Assessing limits and advantages of DNA information vs. information from fossil evidence
- Understanding that knowledge from fossil evidence is based on fossil fragments and the interpretation of these fragments

Tip!

The software can save the results as PDF files for written reports, oral presentations etc.