

Determining Human History from Fossil Evidence

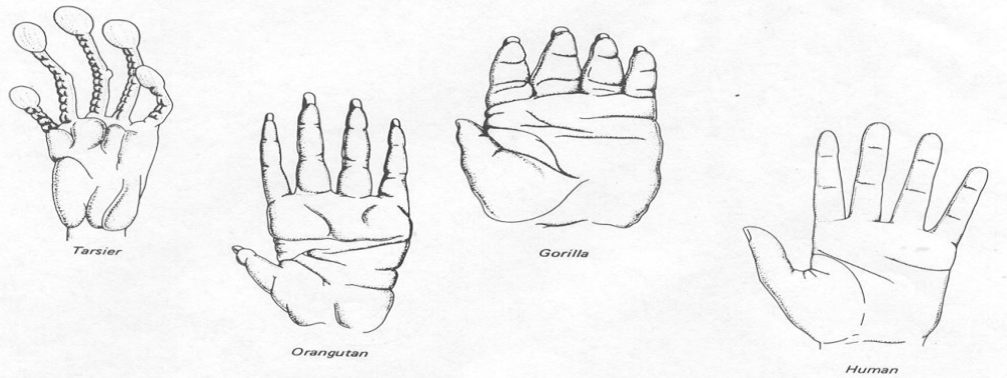
INTRODUCTION: Fossil remains provide a record of early humans and other primates (lemurs, monkeys, and apes). By studying primate fossils, anthropologists attempt to trace the beginnings of humans. Although humans and other primates have many similarities, humans did not evolve from apes. The evidence does, however, point to a common ancestor for primates.

The excitement of actually discovering and holding an ancient primate fossil cannot be duplicated in the lab but the identification process can be simulated. In this activity, you will examine pictures of primate fossil bones and teeth and simulate the measurements that an anthropologist would make. You will draw some conclusions about the evolution of primates.

MATERIALS: pictures of primate fossils Metric ruler Protractor

PROCEDURE:

1. First, examine the four kinds of **primate hands** drawn below. Look for similarities and differences. The evolution of hands and the ability to use hands (manipulation) is believed to be linked with the development of the brain. Answer questions 1 - 5 on the data page.



2. An **INDEX** is a comparison of two measured quantities. The **thumb index** compares the length of the thumb to the length of the hand. The diagram to the right shows the thumb and index fingers of a gorilla, *Australopithecus africanus*, and a modern human.

- Using a metric ruler, **measure** in centimeters the length of the thumb and index finger in each illustration from **the tip of the finger to the base of the palm** (heel of the hand). Record the measurement on the chart on the data page
- Measure the length of your own thumb and index finger in the same way. **Record on chart.**
- Determine the thumb index by multiplying the length of the thumb by 100 and dividing the result by the length of the index finger. Round off the answer to the nearest whole number. Record the **thumb index** on the Table in Part A of the Lab Report. Answer questions 6 - 9 on data page.

