

# Weighing the Evidence

One of the core propositions of biological evolution is that organisms alive today can be traced back through time to a common ancestor. Evolutionary biologists assert that the more similar organisms are genetically, the more closely related they are, and the more likely they are to have evolved from a recent common ancestor. In this activity, you will be considering whether the data you review supports the hypothesis that humans and chimpanzees share a common ancestor.

You will review each data set with your team members. After you review each data set, consider with your team members whether you think that data set supports the hypothesis. Then record in the chart how confident you are that the hypothesis is true based on the evidence. With each new data set you review, record your confidence level based on all the evidence you have reviewed to that point.

### Questions

Write your answers on a separate sheet of paper.


- 1 Regarding the hypothesis that humans and chimpanzees share a common ancestor, how much did your acceptance change from the first to the last piece of evidence you studied? How much did your confidence in your conclusions change as you accumulated more evidence?
- 2 Are you 100 percent sure that the hypothesis that humans and chimpanzees share a common ancestor is true? Explain.
- 3 What data did you find the least convincing? What data did you find the most convincing? Explain your choices.
- 4 Could all the data be recreated by another scientist? Why is this important in science?

### Hypothesis: Humans and chimpanzees share a common ancestor.

#### Evidence and Task

Data Set 1	Data Set 2	Data Set 3	Data Set 4	Data Set 5
compare human and chimpanzee physical traits	compare human and chimpanzee chromosomes	investigate the chromosome shuffle	investigate human chromosome 2	examine human telomere DNA code

#### Confidence in Hypothesis (1 – least confident to 10 – most confident)

Confidence based on Data Set 1	
Confidence based on Data Sets 1 and 2	
Confidence based on Data Sets 1, 2, and 3	
Confidence based on Data Sets 1, 2, 3, and 4	
Confidence based on all Data Sets	