

ADAPTATION

1. **Rodents have been around for thousands of years and are considered the most successful group of mammals. Look at the different rodent skulls and skeletons in the exhibit area and identify some key features that would support this statement.**

2. **Find the skulls or skeletons listed below. Identify a major adaptation each animal has and how it helps the animal survive in a particular environment (Look at each animal carefully and be sure to read the exhibit labels).**

Crocodile:

Chimpanzee:

Ram:

Zebra:

Bullfrog:

Snow Leopard:

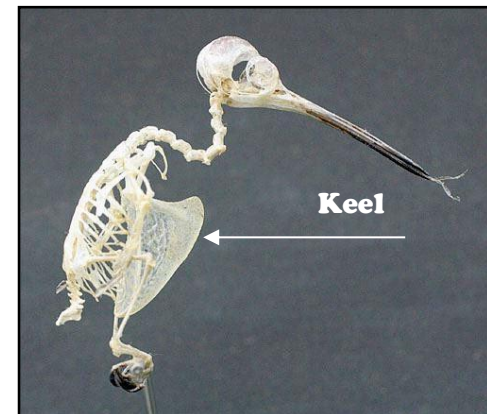
BIRDS

1. **Find the display case with the Rhea and the Hummingbird.**

Look at the hummingbird skeleton from the side (reference the image below if you cannot see it). The bone protruding from the bird's chest is called a keel and it is an extension of the hummingbird's sternum (bone that holds both sides of the rib cage together).

Why do you think this keel is an important part of certain bird's skeletons?

Does the Rhea have the same extension?



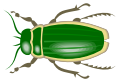
2. Find the display case with bird skulls. Look at each beak closely and determine what kinds of food you think it eats. Then, match the name of the bird with the general type of food below.

Chuck Will's Widow
Little Green Heron
Flamingo
Owl
Duck
Woodpecker
Buzzard
Cedar Waxwing
Crow
Hawk

Meat



Insects



Fruit/Plants



Fish

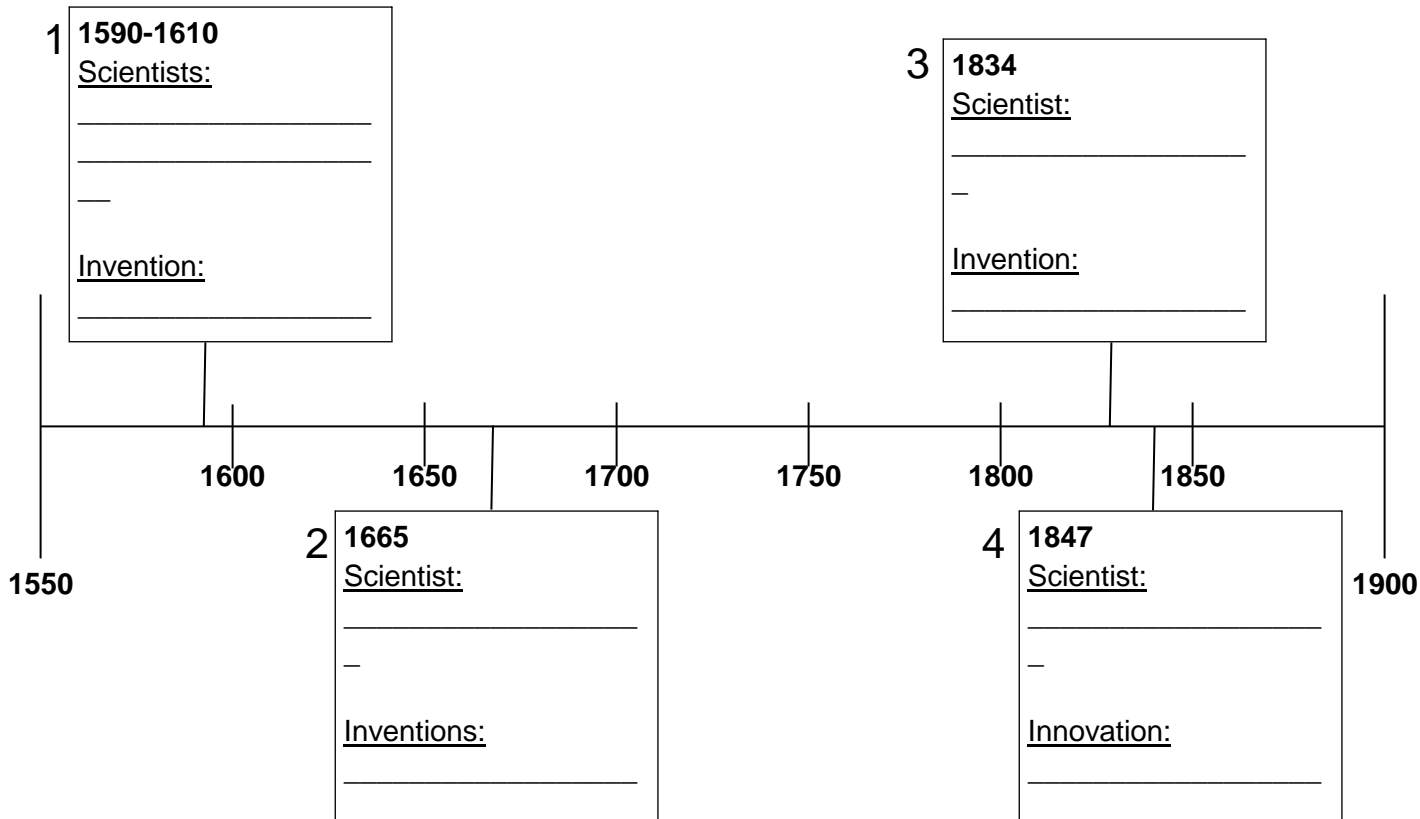


SMALL WORLDS

1. Look at and read about the various parts of the plant cell. Draw a plant cell below making sure you include and label the chloroplast, the nucleus, the cell wall, and the mitochondria.

Name two organelles that the plant cell has that the animal cell does not.

2. Look inside the port holes for images of the fleas. Read the information and fill in the blanks below to trace the development of the microscope. Find the name of the scientist and the invention or innovation they contributed to the history of the microscope.



3. Who discovered protozoa and bacteria, thus earning the title “the father of Microbiology?”

INSECT ZOO

1. Find the pie graph of animal species biodiversity. From the numbers of species listed on this graph, one can determine what percentage of all species a certain family is by dividing the number of species in a group by the number of species total.

How many total species are known on Earth?

What percentage of all species are insects?

What percentage of insects are Lepidoptera (Butterflies and Moths)?

If Diptera (two-winged flies like mosquitoes and house flies) flies make up 22% of insects, how many species of Diptera are known?

2. Find the cases of butterflies sorted by continent. What differences do you notice between North and South American butterflies, and why do you think these differences might help the butterflies survive in different environments?
3. Find the panels on forest succession. If you were in a field in which there were only a few small pioneer trees growing, in which stage of succession would this forest be?

MAMMALS OF THE MID-SOUTH

1. Find the section of the Mammals exhibit about the Rodent family. Identify four of the animals found in this family.
 - 1.
 - 2.
 - 3.
 - 4.

Identify three shared characteristics between the different members of this family.

- 1.
- 2.
- 3.

2. Find the section of the Mammals exhibit about the Shrew family

Identify three shared characteristics between the different members of this family.

- 1.
- 2.
- 3.

One of these animals is the eastern mole, which can dig 30 centimeters in a minute. How many centimeters could it dig in an hour?

How many meters is that?

3. Using the evidence you collected above, fill in the chart below with three ways the rodent and shrew family are alike and ways they are different.

Alike	Different

GEOLOGY

1. **Look at the images taken in 1904 to chronicle the effects of the 1811-1812 New Madrid Earthquakes. What evidence did Fuller collect to show that the damage was beginning to repair?**
2. **In what period were the Appalachian Mountains formed?**
3. **What two scales are used to measure earthquakes?**

Read the newspaper editorial from a man who lived through the New Madrid Earthquake in 1811. Using just the evidence in the article, how would you rate his experience on the Mercalli scale?

DINOSAURS AND FOSSILS

1. **Look and see the different “rock records.” If while exploring a rocky field one day you come across some rocks with ripple marks, cross bedding, and salt crystal casts, then what could you determine about what this area might have looked like thousands of years ago?**
2. **Look at the petrified wood slab across from the Dilophosaurus. You can determine how old a tree was when it was cut down by counting the rings on the stump. How old do you think this tree was?**

How long might it take to petrify wood?