

8. Find the “Our family tree has many branches” display. What is the most significant change between *Australopithecus africanus* and *Homo sapiens*?

Why do scientists think that *A. sediba* was evolving down a separate evolutionary branch and is not a direct ancestor of modern humans?

9. Find “The Mystery of the Ice Age Extinction” display. How can scientists use this recent extinction to understand current events?

10. Find “Mass Extinction #6?” Complete the Preserving Biodiversity activity. What can you do to help preserve biodiversity?



Discovery Guide Evolution: Life Through Time Grades 9-12

Directions

Answer the guide as you travel through *Evolution: Life Through Time*. This guide is meant to be completed while in the gallery with a chaperone.

1. Find the “Evolution explains the Galapagos finches” display. What is *speciation*?

How is it illustrated by finch species on the Galapagos Islands?

2. Find the coral displays in the Devonian Period. Tropical reefs in Michigan, was covered by a shallow sea. (450 million years ago). What symbiotic relationship allows the corals in these reefs to survive?

What does each organism provide for the other?

3. **Find the “A massive stash of ancient carbon” display.** Much of the coal we burn started out as forested wetlands during the Carboniferous Period, 359 to 323 million years ago.

How was the coal formed?

Why does burning the coal lead to an increase in global temperatures and climate change?

4. **Find *Dimetrodon*.** *Dimetrodon* was not a dinosaur but a synapsid. What is the distinguishing skeletal feature of synapsids?

What group of animals are the only synapsids on Earth today?

5. **Find *Majungasaurus*.** *Majungasaurus* was a Cretaceous dinosaur that lived on Madagascar. How did *Majungasaurus* get to Madagascar?

What evidence indicates that there were poor environmental conditions on Madagascar while *Majungasaurus* lived?

6. **Find the *Archaeopteryx*.** How did *Archaeopteryx* support Darwin’s theory of evolution?

What conditions in Solnhofen, Germany allowed this unique discovery to take place?

7. **Find *Maiacetus*.** What bones show one of the best-documented transitions in the evolution of early mammals?

How do these differentiate modern mammals from our ancestors, reptiles, and birds?