

The Mystery of the Far-Flung Fossils

Exploratory Activity

Let's go on a fossil-collecting expedition to the continents of South America, Africa, Australia, Antarctica, and the sub-continent of India. In South America you will collect fossils in Brazil. You will explore the coal fields of Gondwana in southern India. Some of your African rocks are in a gorge near Capetown. In Australia you'll look at rocks on the southern coast. Your fossils of Antarctica occur mostly beneath glacial ice in the mountains on the western shores. Since each continent is now separated from the others by oceans and seas, you must travel between them by plane and boat. You will look for fossils in sedimentary rocks of three ages.

Imagine that the five continents are each represented by a stack of sedimentary rocks on five tables around the room. The continents are in their natural geographical shape and their sizes are proportional. The blue, top layer represents modern times; and the pictures of the modern animals you see are native to the continent. The three lower layers depict sedimentary rocks of three past ages:

- Green Rocks (100 million years ago): Late in the Age of Dinosaurs
- Yellow Rocks (200 million years ago): Early in the Age of Reptiles
- Red Rocks (300 million years ago): The Coal Age

Fossils can be seen in sedimentary rocks of each past age. These are some of the important organisms that lived on the continents at those times. To identify and learn more about each fossil, refer to the "Fossil Catalog" provided by your teacher.

Record on your data sheet the names of fossils you find in the rocks on each continent for the past ages and the names of the animals now living on the present day continents.

Data Sheet

Time	South America	Africa	India	Australia	Antarctica
Present Day					
100 mya					
200 mya					
300 mya					

**mya = million years ago

Analysis Questions

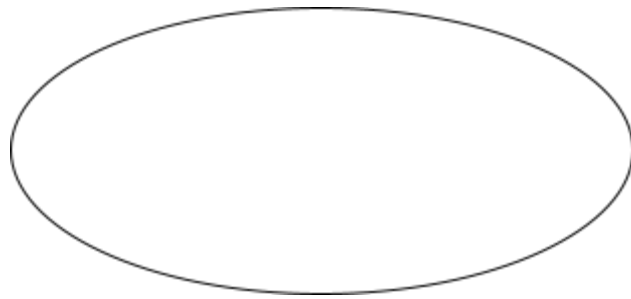
Now that the expedition is over, what sense can you make of your data?

1. On the basis of what you found in the red rocks,

a) what continents had similar fossils?

b) from this fossil evidence, which continents seem to have been connected 300 million years ago?

c) From the fossil evidence, draw the continents where you think they were situated 300 million years ago.



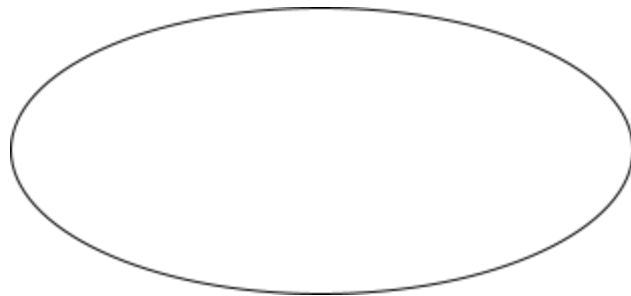
Southern Hemisphere (300 million years ago)

2. On the basis of what you found in the yellow rocks,

a) what continents had similar fossils?

b) from this fossil evidence, which continents seem to have been connected 200 million years ago?

c) From the fossil evidence, draw the continents where you think they were situated 200 million years ago.



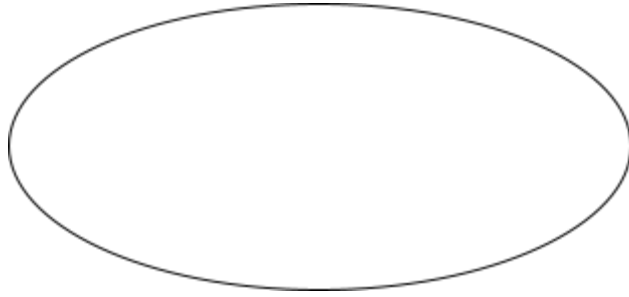
Southern Hemisphere (200 million years ago)

3. On the basis of what you found in the green rocks,

a) what continents had similar fossils?

b) from this fossil evidence, which continents seem to have been connected 100 million years ago?

c) From the fossil evidence, draw the continents where you think they were situated 100 million years ago.



Southern Hemisphere (100 million years ago)

4. Two species of living earthworms in the soils of southern South America and Africa were found to be very closely related (members of the same genus). Also, two species of living earthworms in soils of southern India and southern Australia were found to be very closely related (members of the same genus). How was the theory of continental drift strengthened by discoveries of closely related earthworms on widely separated continents?

5. List as many pieces of evidence as you can to support the theory of continental drift.

6. Why do you think it is so difficult for some people to accept the idea of continental drift?