

## UNIT 4: Plate Tectonics and Earth's Interior

### LAB 4-7: CONTINENTAL DRIFT

**INTRODUCTION:** Since the early 19th Century, people have thought about the jigsaw fit of the continents. South America and Africa appear as though they could fit together.

Geologists have collected data that indicate that the continents are on separate "plates" of Earth's crust. Direct measurements of the relative motions of the continents have now shown that these semi-rigid plates are able to move toward or away from each other. They may also rotate. These motions are often associated with new crust (such as at the mid-Atlantic ridge) or they may force one plate to be consumed under another (for example, where the Pacific plate is being over-ridden by the Andes Mountains).

**OBJECTIVE:** You will see how the "jigsaw puzzle" pattern of the outline of the continents supports the theory of Continental Drift.

#### VOCABULARY:

sea-floor spreading:

subduction:

San Andreas Fault:

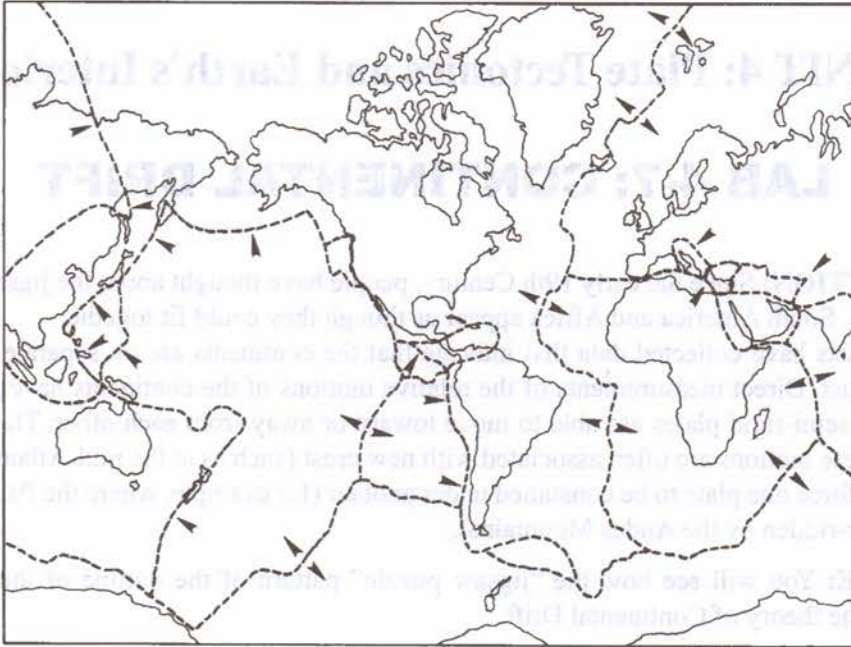
rift zone:

Pangaea:

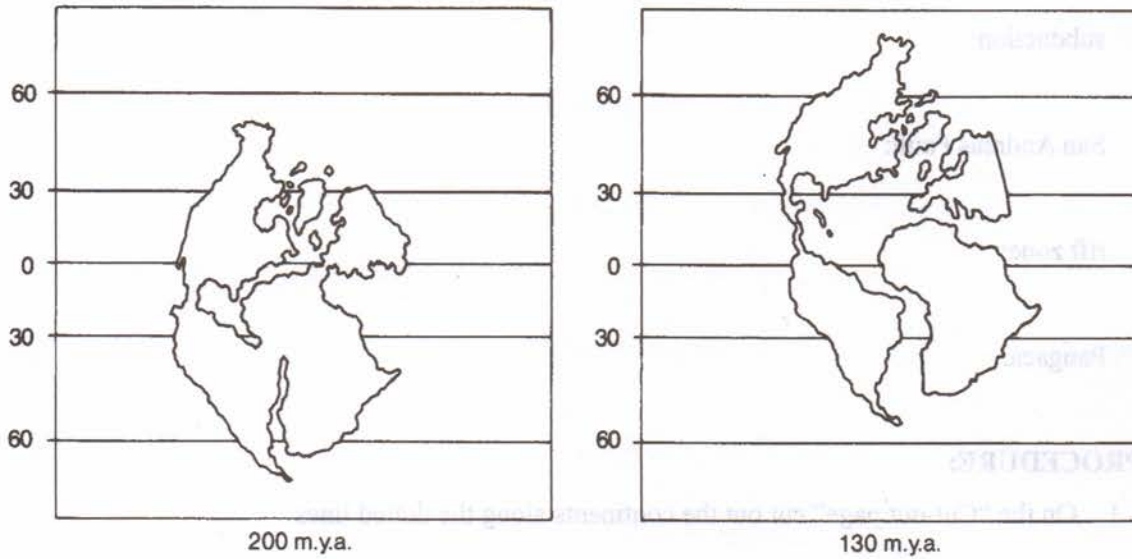
#### PROCEDURE:

1. On the "Cut-out page" cut out the continents along the dotted lines.
2. On a separate paper, fit them together to form one large landmass. Lines A and B should match up with their counterparts on the other continent.
3. Glue or tape the continents to the separate paper.

## TECTONIC PLATES

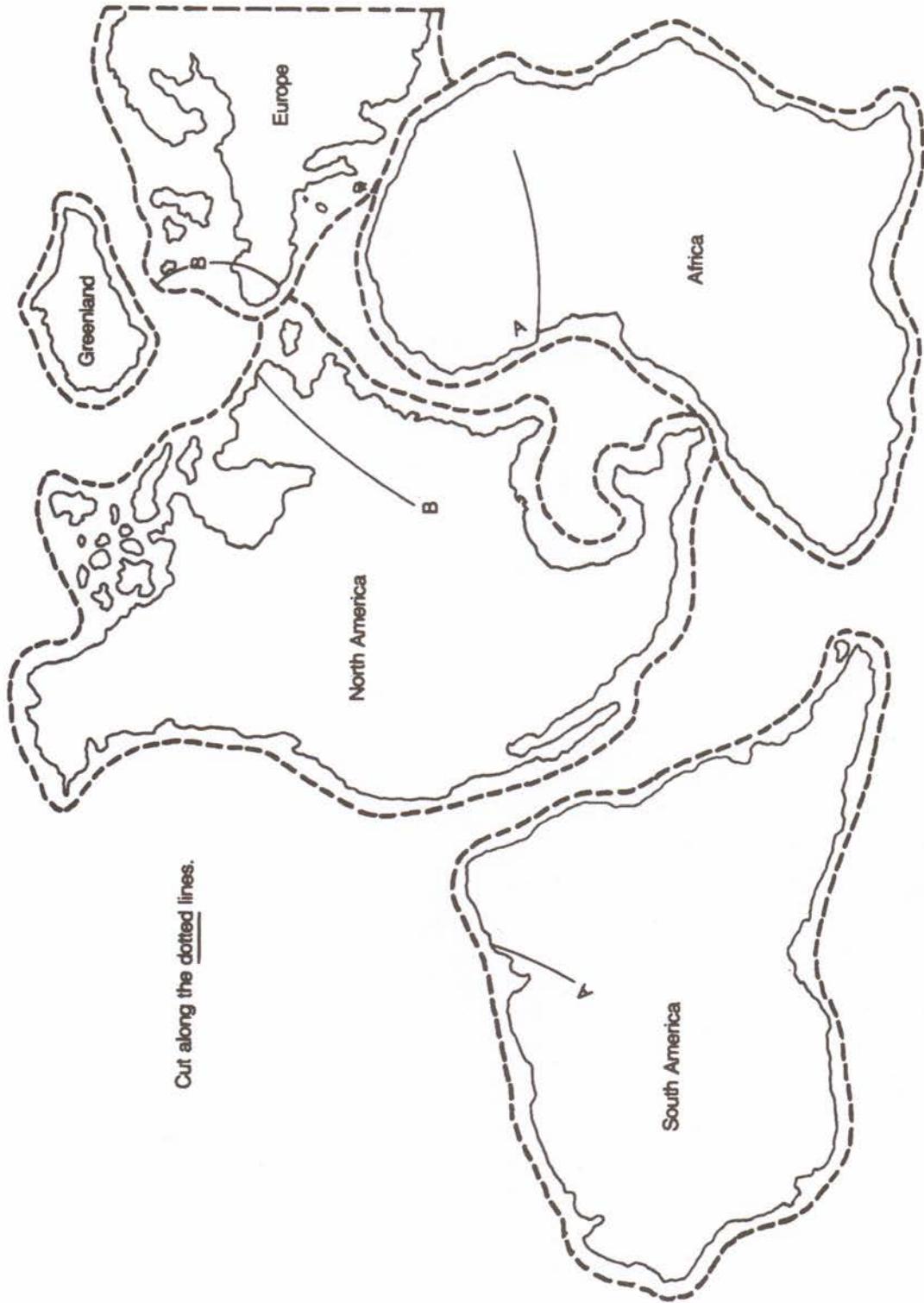


## CONTINENTAL DRIFT SEQUENCE



The diagram on the left represents the continent 200 million years ago and the diagram to the right represents the inferred positions 130 million years ago.

# CUT-OUT PAGE



Cut along the dotted lines.

**DISCUSSION QUESTIONS:** (*Answer in Complete Sentences*)

1. According to this lab, what was the inferred motion of North America relative to Africa that occurred 200 to 130 million years ago?
2. According to the maps of continental drift sequences, how has the position of North America relative to the equator changed over the last 200 million years?
3. Referring to the maps of continental drift sequences, compare the climate of the northeastern United States 200 million years ago to that of today.
4. Where in the United States is there measurable evidence that the continents are moving relative to one another?
5. What could explain the existence of coal deposits in Antarctica?

**CONCLUSION:** What evidence is there that the present-day continents were once a single landmass (Pangaea)?