

Lesson Outline for Teaching

Lesson 4: Continent Building

A. The Structure of Continents

1. In most continents, the highest elevations are located close to the edges of the continent.
2. The lower, flat parts are located close to the middle of the continent.
 - a. There are few mountains in the interior of continents.
 - b. The interior parts of continents are formed of old igneous and metamorphic rocks and are the oldest parts of continents.
 - c. The middle parts of the continents are flat because millions or billions of years of erosion have worn the rocks smooth and level.

B. How Continents Grow

1. Continents can grow when volcanoes erupt, adding igneous rock to the surface of the land.
2. Continents can also grow when tectonic plates carry island arcs, whole continents, or continent fragments with them and add them to existing continents.
3. When the moving plate that is carrying the piece of land reaches a(n) continent at a(n) convergent boundary, the less dense piece of land gets pushed onto the edge of the continent, causing the continent to grow.
4. Continents can change size and shape due to rifting and become smaller due to weathering and erosion.

C. Continental Interiors

1. Rocks near the center or in the interior of continents are usually flat, stable, very old, and very strong.
2. An extensive area of level or rolling land is called a(n) plain.
 - a. In North America, most of the central area is called the Interior Plains.
 - b. The rock that form the Interior Plains came from smaller plates that collided about 1 billion years ago.
 - c. Shallow seas once covered these plains, and over millions of years, weathering and erosion have worn the plains so they are nearly flat.
3. Plate motion and isostasy can cause places to sink, or subside.
 - a. Basins are areas of subsidence and regions with low elevation.
 - b. When sediments erode off of mountains, they often collect in basins.
 - c. Animal and plant remains can also get buried in basins and converted by pressure and heat over millions of years into oil, natural gas, and coal.

Lesson Outline continued

- d. Therefore, basins are often important places, economically, because they contain valuable energy resources.
- 4. Plateaus are flat regions with high elevations.
 - a. Uplift causes some plateaus, such as the Colorado Plateau, to form.
 - b. Eruptions of lava can also form large plateaus.
- D. Dynamic Landforms
 - 1. Earth's surface is constantly changing.
 - 2. Mountains form and erode away.
 - 3. Continents grow, shift, and shrink.

Discussion Question

Look at a map of Africa. Where would you expect the oldest part of the continent to be? What would you expect it to be like? Explain your answer.

The oldest part of the continent of Africa is likely to be at the center of the continent. Students should expect it to be a nearly flat region that has old igneous and metamorphic rocks. Students should expect Africa to be this way because, like most continents, the youngest parts of the continent would be along the edges, where pieces get added as continents collide; the oldest parts would be in the interior of the continent. In fact, most of Africa is a plateau with two mountainous regions: the Atlas Mountains in northwestern Africa and the Ahaggar Mountains in the Sahara. Interested students might research the East African Rift System.