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Continental-continental The third type of convergent boundary forms when two continental plates collide. Continental-continental boundaries form long after an oceanic plate has converged with a continental plate. Recall that continents are often carried along attached to oceanic crust. Over time, an oceanic plate can be completely subducted, dragging an attached continent behind it toward the subduction zone. As a result of its denser composition, oceanic crust descends beneath the continental crust at the subduction zone. The continental crust that it pulls behind it cannot descend because continental rocks are less dense, and will not sink into the mantle. As a result, the edges of both continents collide, and become crumpled, folded, and uplifted. This forms a vast mountain range, such as the Himalayas, as shown in **Table 17.1**.

Transform boundaries A region where two plates slide horizontally past each other is a **transform boundary**, as shown in **Figure 17.19**. Transform boundaries are characterized by long faults, sometimes hundreds of kilometers in length, and by shallow earthquakes. Transform boundaries were named for the way Earth's crust changes, or transforms, its relative direction and velocity from one side of the boundary to the other. Recall that new crust is formed at divergent boundaries and destroyed at convergent boundaries. Crust is only deformed or fractured somewhat along transform boundaries.

PROBLEM-SOLVING LAB

Interpret Scientific Illustrations

How does plate motion change along a transform boundary? The figure at the right shows the Gibbs Fracture Zone, which is a segment of the Mid-Atlantic Ridge located south of Iceland and west of the British Isles. Copy this figure.

Analysis

- 1. Draw** arrows on your copy to indicate the direction of seafloor movement at locations A, B, C, D, E, and F.
- 2. Compare** the direction of motion for the following pairs of locations: A and D, B and E, and C and F.

Think Critically

- 3. Differentiate** Which three locations are on the North American Plate?
- 4. Indicate** the portion of the fracture zone that is the boundary between North America and Europe.

- 5. Assess** Which two locations represent the oldest crust?



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