

Caption Answer

Figure 13 tension

Make a Model

Seafloor Spreading Have students use paper to make a model of a divergent boundary with seafloor spreading. The model should be dynamic and show how spreading occurs. Students can draw parallel ridges on a long piece of paper and construct a mechanism for the paper to be drawn upward from both sides through a slot (the plate boundary), revealing “new” parallel ridges as it emerges. Accept any workable design.

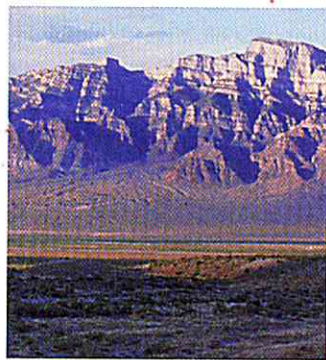
L2 ELL Visual-Spatial

Reading Check

Answer earthquakes

Figure 13 Fault-block mountains can form when Earth’s crust is stretched by tectonic forces. The arrows indicate the directions of moving blocks.

Name the type of force that occurs when Earth’s crust is pulled in opposite directions.



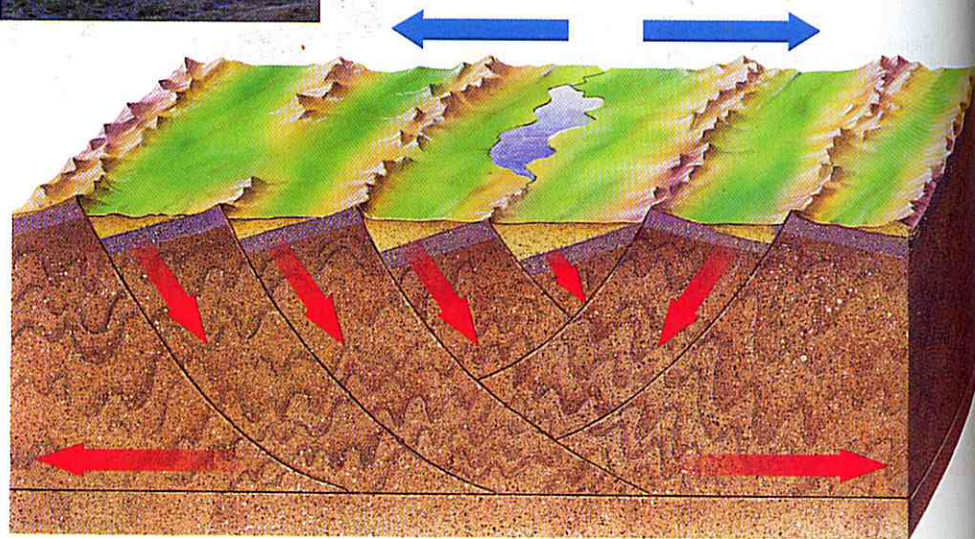
Features Caused by Plate Tectonics

Earth is a dynamic planet with a hot interior. This heat drives convection, which powers the movement of plates. As plates move, they interact. The interaction of plates produces forces that build mountains, create ocean basins, and cause volcanoes. When rocks in Earth’s crust break and move, energy is released in the form of seismic waves. Humans feel this energy as earthquakes. You can see some of the effects of plate tectonics in mountainous regions, where volcanoes erupt, or where landscapes have changed from past earthquake or volcanic activity.

Reading Check What happens when seismic energy is released as rocks in Earth’s crust break and move?

Normal Faults and Rift Valleys Tension forces, which pull apart, can stretch Earth’s crust. This causes blocks of crust to break and tilt or slide down the broken faces of crust. When rocks break and move along surfaces, faults form. Faults interrupt rock layers by moving them out of place. Entire mountain ranges can form in the process, called fault-block mountains, as shown in **Figure 13**. Generally, the faults that form from pull-apart forces are normal faults—faults in which the rock layers above the fault move down when compared with rock layers below the fault.

Rift valleys and mid-ocean ridges can form where Earth’s crust separates. Examples of rift valleys are the Great Rift Valley in Africa, and the valleys that occur in the middle of mid-ocean ridges. Examples of mid-ocean ridges include the Mid-Atlantic Ridge and the East Pacific Rise.



Differentiated Instruction

Challenge Have students place a piece of long, plastic tubing into the neck of a strong balloon and secure the tube so no air can escape from the balloon. Have them place the balloon at the bottom of an aquarium tank, with the tubing extending over the top of the tank. Then have students add alternating 2-mm layers of moist sand and dry sand to the bottom of the tank, covering the

balloon. If they wish, students can build a small city on the top sand layer. Then have one student slowly blow up the balloon until the sand begins to crack to simulate an earthquake. Another student can videotape the “earthquake,” and students can prepare a documentary showing how the quake affected the “city.” **L3 COOP LEARN Kinesthetic**