

Pushing Up Earth's Surface

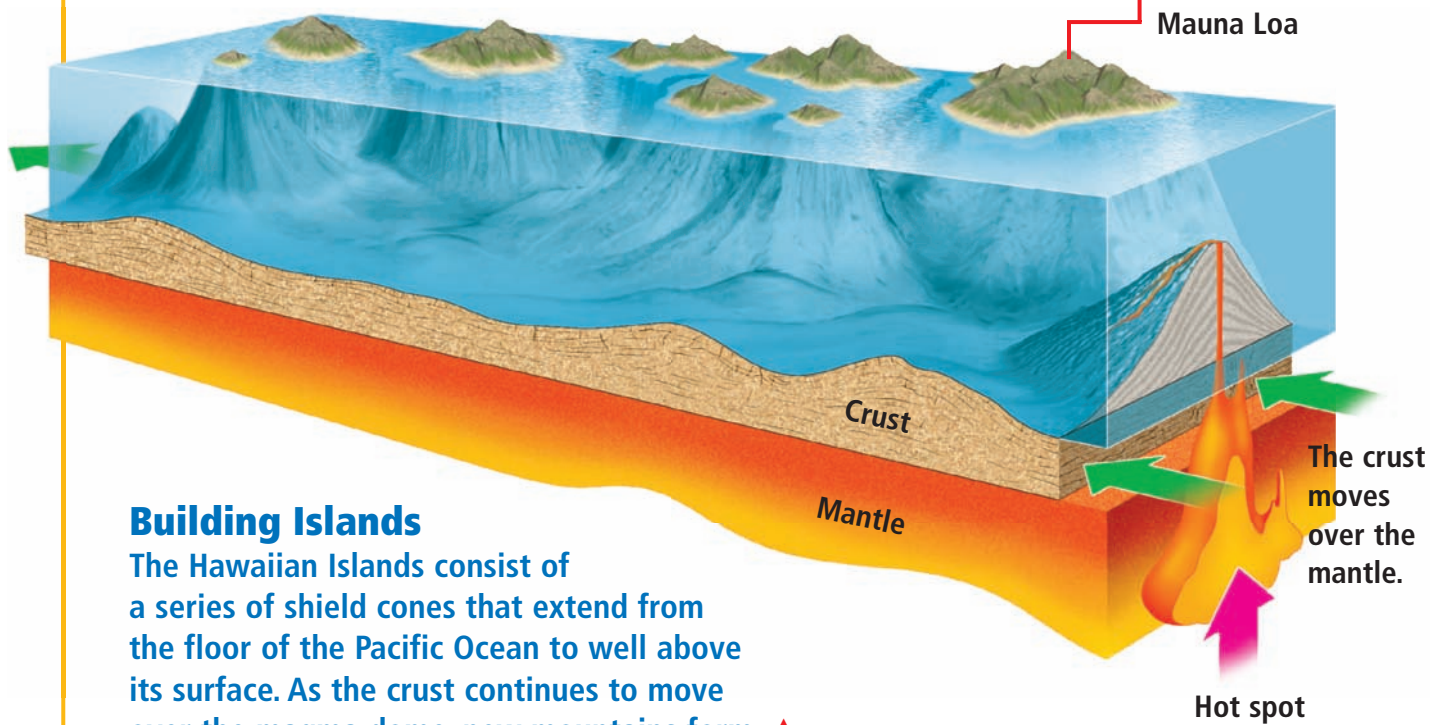
Surface features can be pushed up from below as well as built up from above. Not far below Earth's surface, temperatures are quite high. In some places, the conditions are hot enough to melt rock!

Melted rock below Earth's surface is called magma. Magma originates in a layer of Earth just below the crust. Pressure below the surface can cause magma to push up on Earth's crust, creating round, dome-shaped mountains.

In some places, magma can work its way up through the crust and flow out onto Earth's surface as lava. As lava flows, it cools and hardens into rock.

In some places, enough lava will build up to form a huge deposit with gently sloping sides. Such deposits are called shield cones. Shield cones often form on the ocean floor. For example, the Hawaiian Islands are actually the tops of several giant shield cones. The base of Mauna Loa, the largest of these cones, is about 4,500 m (15,000 ft) below the surface of the Pacific Ocean. Its peak rises over 4,100 m (14,000 ft) above the ocean's surface.

Compare this view of Hawaii from the International Space Station to the illustration below. ►



Building Islands

The Hawaiian Islands consist of a series of shield cones that extend from the floor of the Pacific Ocean to well above its surface. As the crust continues to move over the magma dome, new mountains form. ▲