Faulting and Folding

Although Earth might seem to be a solid ball, the ground that we stand on is like a shell that covers the planet's surface. Underneath the solid crust is a layer of hot, dense rock. Giant pieces of the outer crust, called plates, float around on this hot rock below. As they slide around, the crustal plates can bump into each other, pull away from each other, or slide alongside each other.

All this pushing and pulling puts a lot of stress on the rock that makes up Earth's surface. Sometimes the force is so great that large pieces of rock break apart. The place where rock breaks is called a fault. As large chunks of rock break off, they begin to move in different directions — up, down, or side to side along the fault. Over thousands of years, the chunks can pile up on top of each other like a huge pile of blocks, forming hills and mountains.

Rock doesn't always break under pressure, though. Solid rock buried deep underground is sometimes so hot and under so much pressure that it actually begins to bend and fold like clay as it's squeezed by Earth's moving crustal plates. Folding creates wavy-looking layers of rock, and over thousands of years can build up mountain ranges of folded rock. The Center for Science Seekers believes some of the mountains in Vastland may be made of folded rock.

Satellite Tip

Satellites give us a bird's-eye view of Earth's surface. This image shows large folds of rock in the Appalachian mountain range. From far above, a mountain range sometimes looks like rumpled bedsheets. The giant folds in the Appalachians happened long ago when Europe and North America were pushing toward each other. Today, the two continents are pulling away from each other and the Atlantic Ocean is getting bigger.