

# An Island is Born

When you put your feet on the ground, it feels solid and still. However, it is not. In fact, the earth changes all the time. Geologists are scientists who study how the earth changes.

Earthquakes are one way the earth changes. In September, 2013, a large earthquake struck Pakistan. It destroyed homes and caused injuries and even deaths. However, the destruction

also created something new: an island! Hours after the earthquake, an island, which was named the Gwadar mound, formed off the coast of Pakistan.

Scientists don't think it will last long. That's because islands like this, which are made of mud and sand, often appear and disappear after earthquakes. They form when the sea floor rises, and they disappear when it settles down. Ocean waves also quickly erode them away.

To explain why these islands form and disappear, geologists look at plate tectonics. Tectonic plates are massive pieces of rock underneath Earth's surface. All of

the land and water on Earth lie on top of tectonic plates. Heat currents created by the melted rock inside of Earth cause the plates to move. Earthquakes and volcanoes can occur when tectonic plates move.

As they move, tectonic plates push against each other and trap energy. Trapped energy can be released in earthquakes or when volcanoes erupt. Volcanoes form when one tectonic plate gets pushed under another plate. The sinking plate melts, creating the lava that erupts from volcanoes.

The Gwadar mound is a mud volcano. Trapped gasses under Earth's crust cause mud volcanoes to form as tectonic plates move. Heat causes the gasses to explode, and the soil and rocks to melt. Mud volcanoes are really boiling earth.

The Gwadar mound is the fourth island created by mud volcanoes since 1945. Like the others, it will probably not last long. However, the Gwadar mound shows us how our amazing Earth changes.



©2008 by Nick Taylor in Flickr. Some rights reserved <http://creativecommons.org/licenses/by/2.0/>



©2004 by Visit Greece in Flickr. Some rights reserved <http://creativecommons.org/licenses/by-nc-sa/2.0/>



## An Island is Born

Write all these words in the right places to complete this puzzle, which tells some things you learned about how earthquakes and volcanoes change the earth. You can reread the article before you begin, but don't look back at it while you are working. After you've completed the puzzle, read it to someone.



Earth	earthquakes	islands	large	melt
mud	Pakistan	plates	push	rocks

The ground looks solid and still, but sometimes it moves. Huge \_\_\_\_\_ lie just beneath the earth's surface. These rocks are called tectonic \_\_\_\_\_. As they move, they \_\_\_\_\_ against each other. This pushing can cause the types of movements seen in \_\_\_\_\_ and volcanoes.

Small earthquakes don't usually cause much damage, but \_\_\_\_\_ earthquakes can destroy homes and kill people. Large earthquakes can also create \_\_\_\_\_ in the ocean. The Gwadar mound, which is an island that was created when a huge earthquake struck off the coast of \_\_\_\_\_, is actually a \_\_\_\_\_ volcano. Mud volcanoes explode when the soil and rocks in them get hot enough to \_\_\_\_\_. Islands created by earthquakes can appear and disappear quickly, showing us how our \_\_\_\_\_ changes.

