



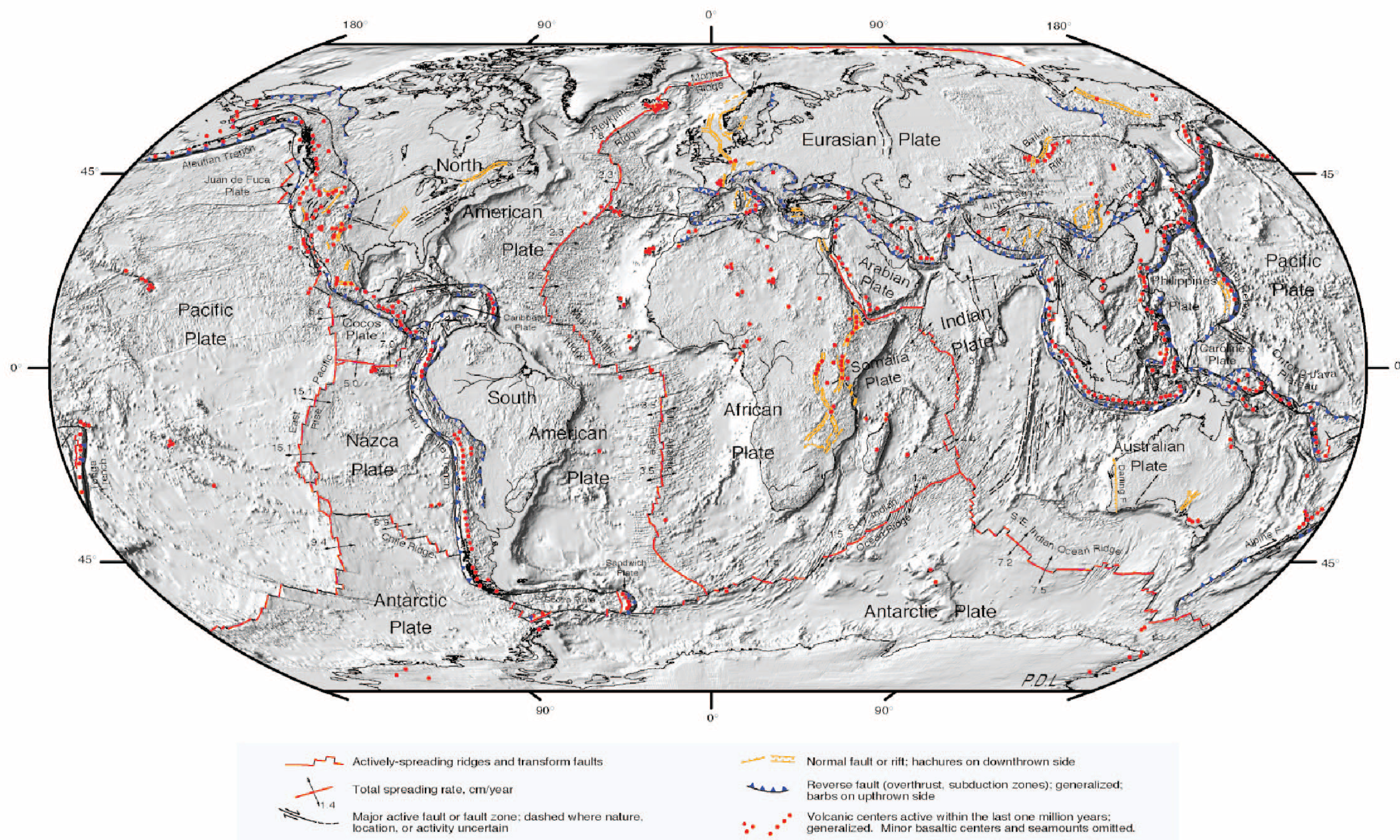
# DRILL DOWN DEEPER INTO GEOLOGY UNDER THE SEA

## What is plate tectonics?

Have you ever noticed that South America and Africa look like puzzle pieces that fit together almost perfectly? People have observed this for hundreds of years, but assumed it was impossible for them ever to have been actually once stuck together and now split apart.

We now know South America and Africa were once joined. All the continents are slowly moving. They have combined and broken apart at various times in the Earth's history. The ocean floor is moving too. Though the Earth's hard outer layer that we stand upon may seem as one solid shell, it is broken up into many large pieces, called plates. These plates are being pulled apart and pushed together as they ride the currents of hot fluid rock deep within the ocean. This understanding of how our planet works is called plate tectonics.

## DIGITAL TECTONIC ACTIVITY MAP OF THE EARTH Tectonism and Volcanism of the Last One Million Years



### Try This!

Check out the "Geology Under the Sea" backpack from the front desk to see if you can put together the pieces of the plate tectonics puzzle.

Learn more about how plate tectonics shapes our planet at [www.insearchofearthsecrets.com](http://www.insearchofearthsecrets.com).



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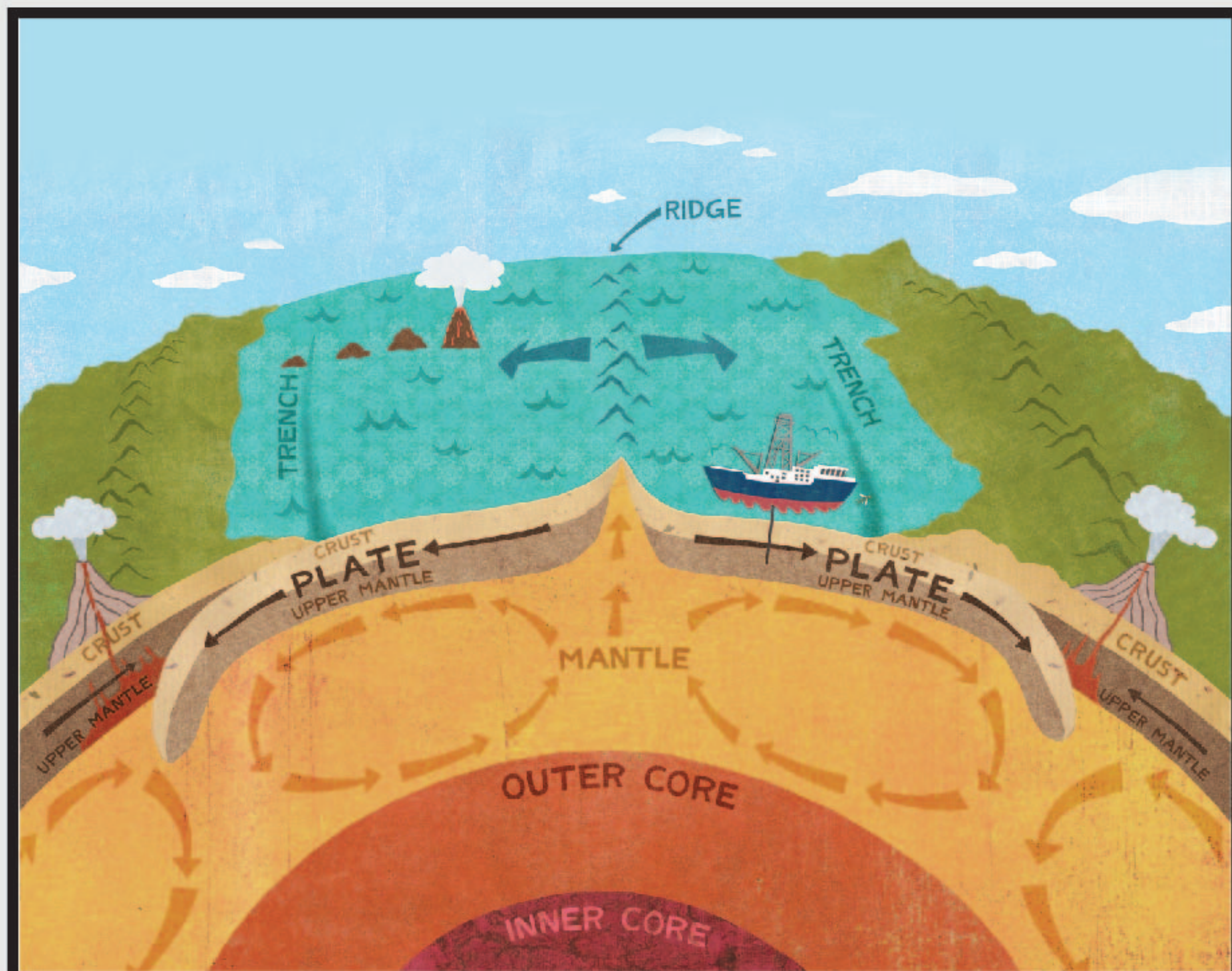
Collect your *Geology Under the Sea* passport sticker

## What is seafloor spreading?

One of the ways scientists were able to prove that plate tectonics was real was by drilling the seafloor. Scientists knew that there were the chains of volcanoes on the seafloor called mid-ocean ridges. They are the longest mountain ranges on Earth. When scientists began drilling deep sea cores, they found that the youngest rocks in the seafloor were always right near these mid-ocean ridges and the farther they got away from the ridges, the older the seafloor rock was. This showed that new seafloor was regularly being created at the ridges and the seafloor was spreading out from there (think about a sea floor conveyor belt).

Mid-ocean ridges are places where two currents of molten rock deep inside the Earth are pulling the seafloor apart. Magma rises up in the opening in the seafloor and creates the volcanoes of the mid-ocean ridges and new seafloor rock.

If the seafloor is spreading then why isn't the Earth getting bigger? To find out the answer to that, check out the Drill Down Deeper sheet for the Quakes and Waves kiosk.



EQUATOR

### Try This!

Check out the "Geology Under the Sea" backpack from the front desk to see if you can put together all the oceanic and continental pieces of the Earth's plate tectonics puzzle.



Learn more about the science of seafloor spreading at [www.insearchofearthsecrets.com](http://www.insearchofearthsecrets.com).