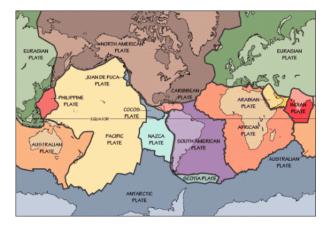


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MOVING TECTONIC PLATES



Scientists believe that <u>Planet Earth has tectonic plates</u> which move. This image, from the U.S. Geological Survey (USGS) depicts the location of those plates. PD

Because Earth's <u>tectonic plates</u> rest on the mantle's molten layer, those <u>plates</u> also move, although scientists do not exactly understand that <u>process</u>. Sometimes, when <u>tectonic plates</u> move, earthquakes <u>occur</u> or volcanoes <u>erupt</u>.

Scientists describe the deepest part of Earth - its core - as two separate sections. The <u>outer core</u> is a swirling liquid composed mostly of a nickel-iron alloy. Experts think the Earth's <u>magnetic field</u> is controlled by this part of the core.

Earth's solid <u>inner core</u>, made mostly of iron, <u>spins</u> independently from the rest of the planet and <u>is</u> about 4,000 miles <u>below</u> its crust. Scientists believe pressures at that level are about 45 million pounds per square inch. That is equivalent to 3 million times the air pressure at sea level.

How the earth's core impacts the tectonic plates (which "float" on top of it) has a lot to do with natural occurrences like earthquakes. During the years leading up to the San Francisco quake, however, few people really understood how, and why, earthquakes happened. They just understood the tremendous damage that could result from such a catastrophic event.

How frequently do earthquakes actually occur?

See Alignments to State and Common Core standards for this story online at:

http://www.awesomestories.com/asset/AcademicAlignment/MOVING-TECTONIC-PLATES-San-Francisco-Earthquake -of-1906

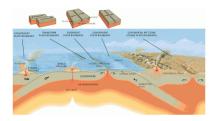
See Learning Tasks for this story online at:

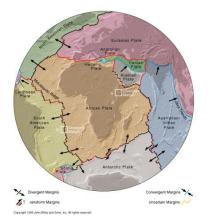
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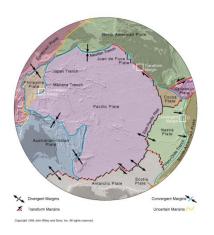
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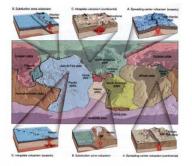
<u>Planet Earth's Tectonic Plates</u> Image online, courtesy USGS. PD View this asset at: http://www.awesomestories.com/asset/view/Planet-Earth-s-Tectonic-Plates







Distribution of Volcanoes



Moving Tectonic Plates

Drawing, courtesy USGS (United States Geological Survey). Cross section by José F. Vigil from *This Dynamic Planet* - a wall map produced jointly by the U.S. Geological Survey, the Smithsonian Institution, and the U.S. Naval Research Laboratory.

View this asset at: <u>http://www.awesomestories.com/asset/view/Moving-Tectonic-Plates</u>

Divergent and Convergent Tectonic Plates

Illustration, depicting the Earth's tectonic plates - mostly in the Eastern Hemisphere is from John Wiley and Sons, Inc., online via USGS (U.S. Geological Survey). View this asset at:

http://www.awesomestories.com/asset/view/Divergent-and-Convergent-Tectonic-Plates

Pacific Plate and Its Neighbors

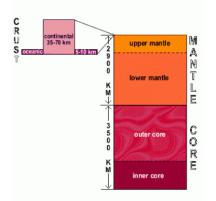
Illustration, depicting the Earth's tectonic plates - mostly bordering the Pacific Plate - is from John Wiley and Sons, Inc., online via USGS (U.S. Geological Survey). View this asset at:

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<u>Volcanoes - Relationship to Tectonic Plates</u> Image online, courtesy USGS. PD View this asset at: http://www.awesomestories.com/asset/view/Volcanoes-Relationship-to-Tectonic-Plates

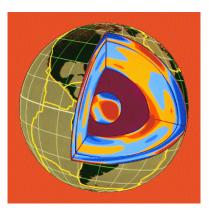
Figs. 4.31

Cross section of the Earth (not to scale)

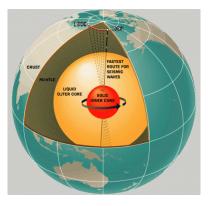


Cross Section of Planet Earth

Image online, courtesy USGS. PD View this asset at: http://www.awesomestories.com/asset/view/Cross-Section-of-Planet-Earth



Earth's Inner Core Image online, courtesy USGS. PD View this asset at: <u>http://www.awesomestories.com/asset/view/Earth-s-Inner-Core</u>



Rotation of Earth's Inner Core Image online, courtesy NASA. PD View this asset at: http://www.awesomestories.com/asset/view/Rotation-of-Earth-s-Inner-Core