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**SYNOPSIS:**

This revealing report starts with a satellite view of Mother Earth and quickly goes deep beneath the surface to seek out those violent forces that shape our environment.

We discover how millions of years ago, an enormous super continent broke apart and the pieces drifted on a sea of molten magma to form today's landmasses.

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**CURRICULUM UNITS:**

Earth Science  
Ecology  
Geography  
Geology  
Oceanography  
Seismology

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**CAREER OPPORTUNITIES:**

Archaeologist  
Cartographer  
Ecologist  
Engineer  
Geographer  
Geologist  
Geophysicist  
Instrument Technician  
Oceanographer  
Seismologist  
Surveyor  
Volcanologist

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**ISSUES AND CRITICAL THINKING:**

1. Discuss how buildings can be constructed to withstand an earthquake, and how government agencies and non-profit organizations prepare for these natural disasters.
2. The San Andreas Fault in California is like a ticking time bomb. All experts agree there will be another big earthquake there someday, they just can't agree on when. Discuss some of the technologies being used to improve the predictions of seismic activity.
3. Select two different major volcanic eruptions from history and compare them in terms of their geology and destruction. Also discuss how the face of the earth was changed as a result of the eruptions. Did they have an effect on weather?
4. Compare the Richter and Mercalli scales for measuring the intensity of earthquakes.
5. Discuss the lost continent of Atlantis and some of the theories about where it was and what happened to it.
6. Discuss how plants and animals return to land devastated by a volcanic eruption. Mt. St. Helens is a good case study.

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**GLOSSARY:**

**CRUST-** the cool outer shell of the Earth, made from rock, stone and mineral deposits.

**EARTHQUAKE-** measured with the Richter scale, some small earthquakes can go unnoticed by most people; however, large ones can cause extensive damage and loss of life. Earthquakes are caused when two adjacent plates in the earths crust suddenly shift.

**FAULT-** a crack in the Earth's crust.

**GEOLOGY-** the science dealing with the structure of the Earth's crust and the formation of rocks and minerals.

**GEYSER-** a natural spring that throws up hot water and steam.

**LAVA-** molten material expelled by a volcano.

**MAGMA-** molten rock deep within earth.

**MANTLE-** Semi-molten rock between the crust and core.

**PLATE TECTONICS-** the theory of continental drift.

**RIFT ZONE-** a fault that is opening up between two plates.

**SEISMIC-** Vibrations in the Earth caused by earthquakes and other explosions.

**SEISMOGRAPH-** an instrument for measuring vibrations in the Earth. Plots of these vibrations, measured on a Richter Scale, tell scientists the intensity of an earthquake.

**SONOGRAPH-** Similar to a seismograph, these instruments are used to measure underwater seismic activity on the ocean floor using sound waves.

**SUBDUCTION TRENCH-** a fault where one plate is being forced under another. This causes the formation of volcanoes and large mountain ranges.

**VOLCANO-** a vent in the Earth's crust where lava and gasses escape. Some volcanoes like those in Hawaii are constantly erupting, while others like Mt. St. Helens explode suddenly with the force of an atomic bomb.

## The Wonders of Earth Science



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## GEOLOGY: OUR RESTLESS PLANET



### TMW MEDIA GROUP

2321 Abbot Kinney Blvd., Venice, CA 90291

(310) 577-8581 Fax (310) 574-0886

Email: [sale@tmwmedia.com](mailto:sale@tmwmedia.com)

Web: [www.tmwmedia.com](http://www.tmwmedia.com)

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