



5-Minute Refresher: EARTHQUAKES

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Earthquakes – Key Ideas

- An earthquake is the shaking of the ground caused by the rapid movement of underground rock.
- Earthquakes occur when rocks in the crust break or move suddenly along faults.
- Earthquakes change Earth's surface rapidly.
- A powerful earthquake can cause extensive damage.
- Earthquakes can cause large ocean waves called tsunamis.
- Earthquakes are most likely to form at the boundaries of tectonic plates.

Earthquakes—Learning Objectives for Grades K-3

- Earth is always changing through natural processes
- Natural hazards can be quick events or occur slowly over time.

Earthquakes—Learning Objectives for Grades 4-6

- A variety of hazards result from natural processes.
- Humans cannot eliminate natural hazards but can take steps to reduce their impact.
- Natural hazards can be predicted or occur without warning.

Earthquakes- Prior Knowledge K-3

- It is likely students have heard about Earthquakes before and can explain their motion.
- Students may have experience participating in earthquakes drills at school.
- It is likely that students are familiar with other natural hazards, such as volcanoes.

Earthquakes- Prior Knowledge 4-6

- Students should be able to identify hazards that are more likely than others.
- Students should be able to explain that energy comes from Earth and that all Earth processes are a result from energy flowing and cycling.

Earthquakes – Common Misconceptions

- Earthquakes are caused by explosions from volcanoes.
 - **Reality:** An earthquake is not caused by a volcanic eruption. Faults are cracks in the Earth's crust that form along plate boundaries. When the plates move, pressure builds and energy is released in the form of an earthquake.
- The ground opens up during an earthquake.
 - **Reality:** Shallow crevasses can form during an earthquake however faults do not open up during an earthquake. Movement occurs along the plane of a fault, not perpendicular to it.

Earthquakes- Additional Information

Earthquakes impact structures differently depending on how they are constructed. To learn more check out the hands-on activity **Shaky Ground** at the following link:

[http://
siemensscienceday.discoveryeducation.com/
activities/shaky_ground.cfm](http://siemensscienceday.discoveryeducation.com/activities/shaky_ground.cfm)