GENERATIONGENIUS
ALWAYS QUESTION. ALWAYS WONDER.

TEACHER GUIDE

TIMESCALE OF EARTH'S EVENTS
GRADES K-2

COMMON MISCONCEPTIONS

- **Earth's surface is constant and unchanging.**
  Earth's surface is constantly changing. Some changes are fast, such as those that are a result of earthquakes, landslides and volcanoes. Others are very slow such as changes resulting from weathering and erosion, or canyons forming from rivers flowing.

- **Earthquakes and Volcanoes randomly occur around Earth.**
  Earthquakes and volcanoes occur where Earth's tectonic plates meet. The common area on Earth where these plates collide is the Ring of Fire. Most earthquakes and volcanoes occur in these areas of the world.

- **Weathering and Erosion are the same thing.**
  Weathering and erosion are related, but they are different processes. Weathering is the actual breaking down of material through mechanical, chemical or biological processes. Erosion is the movement of the materials that have been broken down. Since these two terms are used together, students often confuse them or think they are the same thing.

EARTHQUAKES AND VOLCANOES

Earthquakes and volcanic eruptions are the result of tectonic plate movement. Due to the location of tectonic plates, most volcanic eruptions and earthquakes occur in what is referred to as the Ring of Fire. The Ring of Fire is where various large tectonic plates converge (come together) or diverge (move apart). This concept is too advanced for young students, so if they ask what causes earthquakes or volcanoes, simply let them know that earthquakes and volcanoes happen when the Earth's surface moves.

LANDSLIDES

Landslides commonly occur on steep mountain slopes where vegetation is limited. After wildfires, for example, many plants have been burned. Roots that once used to hold the ground in place have died and burned. Combined with heavy rains, conditions are ripe for a landslide. The force of gravity pulls the land, rock and mud downward.

TIPS FOR TEACHERS

Give students many opportunities to model or study common Earth processes that change the Earth's surface. If they can see specifically how these processes change the Earth's surface, they will be able to differentiate between similar processes more easily.