

# Predictions Are Hard!

But the data from these instruments is not always helpful to volcanologists. Some eruptions just cannot be predicted.

Mount St. Helens erupting

## LET'S EXPLORE MATH

In 1980, Mount St. Helens erupted. Before the eruption, its height was 9,677 feet (2,950 m). Today, its height is 8,363 feet (2,549 m). Estimate how much smaller Mount St. Helens is today than before it erupted. Give the answer in feet and meters. *Hint:* Use rounding to the nearest 100 and subtraction to help you.

# Preparing for Disaster

Volcanologists try to predict if a volcano will erupt. Then they tell other experts. These experts try to guess what **damage** may happen to any towns near the volcano.

A town destroyed by a volcanic eruption

## Planners

Planners are experts that work with volcanologists. Planners choose the best routes people should use if they need to leave their towns. They also help decide when it is safe for these people to go back to their homes.

# Seismologists

**Seismologists** (size-MAWL-uh-jists) study earthquakes. They predict where big earthquakes may occur.



This seismologist is measuring the movements on a seismometer.

## Measuring Earthquakes

Earthquakes cause **tremors** in the earth. These tremors are measured on a scale called the Richter (RIK-tuhr) scale. An earthquake measuring less than 3.5 on the Richter scale is not usually felt by people. An earthquake measuring 6.0 or greater can cause serious damage.

Seismologists also use seismometers. Some seismometers measure the smallest earthquakes. Others measure larger earthquakes. Graphs record these movements.

## LET'S EXPLORE MATH

This table shows the number of earthquakes in the world per year measuring between 3.0 and 3.9 on the Richter scale. Use the table to answer the questions below. *Hint:* Use rounding to the nearest 100 to help you with your answers.

Year	2003	2004	2005	2006	2007
Number of earthquakes	7,624	7,932	9,191	9,990	9,889

- About how many earthquakes were there in 2003 and 2004?
- About how many earthquakes were there in 2005, 2006, and 2007?
- About how many earthquakes does this chart show altogether?