

# NATURAL DISASTERS

## EARTHQUAKES

The earth is broken into giant pieces of rock known as plates. These plates form the earth's crust. The plates are always moving slowly and will sometimes bump into each other. Earthquakes may occur when the plates collide. They may also occur far away from these plates at cracks in the earth's surface. These cracks are known as faults. Earthquakes may also happen along fault lines.

An earthquake is a sudden shift in the earth's crust. Most earthquakes occur along faults when large blocks of rock break apart and release huge amounts of energy and pressure. This energy is released as shock waves that ripple across the earth's surface. These waves may be felt and measured. Earthquakes are measured using a Richter Scale, which measures the intensity of the shock waves. While some earthquakes may destroy entire cities, others occur unnoticed.

An earthquake starts where rocks move against each other and break off. The movement of the rocks creates energy 10,000 more powerful than the first atomic bomb. The place where the rock breaks off is called the focus. This usually happens less than 45 miles below the ground. Right above the focus and on the surface of the ground you will find the strongest shaking and this area is called the epicenter. What is amazing is how fast the break travels--2 miles per second.

*»An earthquake is like a stone thrown into the water. After the stone hits the water waves move outwards from the center.«*

### o **RICHTER SCALE:**

- 0-2** Not felt by people
- 2-3** Felt little by people
- 3-4** Ceiling lights swing
- 4-5** Walls crack
- 5-6** Furniture moves
- 6-7** Some buildings collapse
- 7-8** Many buildings destroyed
- 8-Up** Total destruction of buildings, bridges and roads

## VOLCANOES

A volcano is an opening in the ground that spits out hot gases, rock and lava. The eruption can be so bad it can blow the top off the mountain.

A volcano is formed when plates hit each other. One of the plates goes under the other. This is where the earth heats and melts the rock into magma and gases. This can happen as deep as 100 miles below the earth. Magma settles in pools or chambers near the surface. This is where eruptions take place.

The volcanoes around Hawaii are not created by a tectonic plate, but hot spots. Hot spots are places that have fierce heat in the mantle. This heat causes magma to bubble and move to the surface. The scientists believe that these volcanoes were formed by a column called a mantle plume. These columns measure about 100 miles in diameter and can rise 5 to 10 inches yearly.

### o **Things that come out of a volcano:**

- **Lava** - sticky--hardens when cooled
- **Rock fragments** - sticky magma--pressure breaks it into fragments
- **Volcanic dust** - can be carried around the globe -- bright red
- **Volcanic ash**
- **Volcanic bombs** - size range from baseballs to basketballs
- **Gas** - mostly steam - with CO<sub>2</sub>, N, SO<sub>2</sub>

## o Classification of Volcanoes

**Active** - erupt constantly

**Dormant** - inactive

**Extinct** - inactive (probably will not erupt again)

**Intermittent** - erupts less than an active

## TORNADOES

A tornado is a spinning column of air. This does not sound threatening until you hear all the details. Inside a tunnel wind speeds can move up to 40 to 300 miles per hour. The winds produce a vacuum in the funnel that can suck up everything in it's path. Tornadoes are also called *twisters* or *cyclones*.

It was believed that the Greek God Aeolus kept the wind in a cave with a huge rock blocking the entrance. He would open the cave at his whim which would produce storms, but we know that the rotation of the earth makes wind. These patterns are studied throughout the world. Tornadoes are controlled by these wind patterns.

There are tornadoes happening all over the world, but the United States has more tornadoes because the weather patterns are right for producing tornadoes.

## FLOOD

For the most part, there are two main types of floods. These kinds include a flash flood, and a regular flood. Though both are extremely dangerous, flash floods are often the worse of the two.

A flash flood occurs when there is a huge storm with lots of rain. If the rain is heavy enough, the ground can quickly flood. This is a flash flood. Since flash floods give little early warning, they often kill many more people than regular flood.

The other type of flood is when the ground is covered with water due to a long period of rain, or when a dam or levee breaks. Since a flood that comes from a storm often lasts many days to do any damage, not as many people are killed or injured as there are in other types of floods.

Still, floods can cause some good for the surrounding land. When a river floods, it is naturally clearing itself of sediment. Since this dirt is almost 100 per cent minerals, it acts as great fertilizer for the flood plains.

## DROUGHT

During a drought, the land can become starved of food or contaminated with mineral salts and even when it does rain, often the ground cannot support growth.

The main cause of all drought is insufficient rainfall. This can be due to global patterns of air circulation, like the Sahara - or, it can be created by man.

The effects of dams and watering in hot climates can have a dramatic effect on the environment. The dams and watering preventing rivers from running their natural course can dry the land. This prevents water steam from rising to create rain clouds.

In a natural desert like the Sahara, dry air descends over the region bringing clear skies and hot sunshine. These hot deserts get little rain at any season. The problem often lasts for many years with rainy seasons failing to show.