

Natural Calamities 12



A natural calamity is the effect of a natural event that causes great loss to the environment and human life. It is called natural because the events are hazards or disasters which happen without human involvement and also we cannot stop them. Some examples of these calamities are—earthquakes, volcanic eruptions, tidal waves, draught and floods.

EARTHQUAKE

In an earthquake, huge masses of rock move beneath the Earth's surface and cause the ground to shake. Earthquakes occur constantly around the world. Often they are too small for people to feel at all.

The Earth's upper layer crust is made up of about a dozen rock masses called plates. These plates are moving all the time. In different places they move apart, collide, or slide past each other. Over time this movement results in release of energy in the form of shock waves. These waves spread through the rock in all directions, causing an earthquake. In the most powerful quakes, people thousands of kilometres away from the centre of the quake can feel the ground shake. The centre of the earthquake is called epicentre.

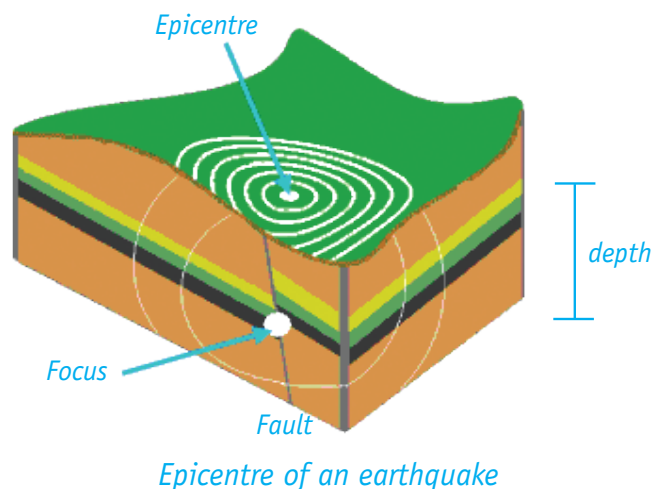
Effects

The earthquakes are not predictable and cause major damage. The damage depends on its strength and what kind of ground it is shaking. Loose soils shake more than solid ground.

The violent shaking during earthquakes often causes other Earth movements, such as avalanches. Some quakes that happen in or near oceans cause huge, destructive waves called tsunamis to sweep ashore.

Do You Know?

Most earthquakes start 16 km below the surface of the Earth.



Do You Know?

San Francisco was built over a landfill made by the rubble from an earlier quake.



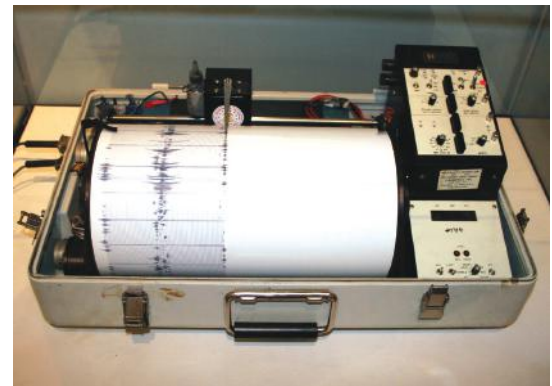
Earthquake

At times due to earthquake the area gets filled with water, mud, quick sand and buildings come crushing down.

Sometimes an earthquake is followed by aftershocks (small earthquakes) which can go on for a few more days.

Measuring Earthquakes

Scientists record the shock waves produced in an earthquake with an instrument called a seismograph. They measure the strength of a quake in different ways. The Richter scale measures earthquakes based on the amount of energy they release. The weakest earthquakes are close to zero on the scale; the strongest measure about 9. The Mercalli scale measures the amount of destruction caused by an earthquake on a scale of 1 to 12.



A seismograph

TIDAL WAVES



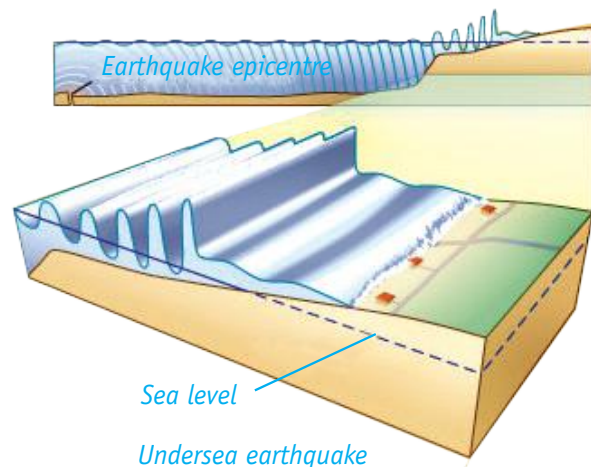
Tsunami

Tidal waves are also called tsunami though they are not caused by tides. In Japanese it means harbour waves. Tsunami usually follows an underwater earthquake, landslide, or a volcanic eruption.

These waves may travel for thousands of miles. They may move as fast as 800 kilometers an hour. As they approach a coastline, the waves

move more slowly. They also rise, often to heights as great as 30 meters. Tsunamis can destroy trees, buildings, and even whole beaches, coastal villages, or towns.

In this picture, an undersea earthquake is shown causing waves to spread out in the ocean. As the waves approach a coast, they hit land under the water. This makes the waves much larger. Crest is the highest point of a wave.



VOLCANO

A volcano is a mountain with a large opening at the top. When a volcano erupts, hot gases and melted rock from deep within the Earth find their way up to the surface. Volcanic eruptions may be very destructive. But they also create new landforms.



Lava



Volcano

During a volcanic eruption, hot melted rock called magma escapes from a vent, or opening, in the Earth's surface. Magma released from a volcano is known as lava. It glows red as it flows out of the volcano's opening. As it cools, it hardens into rock.

Effects

Eruption of volcanoes can cause a great damage to human lives, animals, and fields that come in its way. Due to the poisonous gas that erupts from the volcano, all living things in that area die, as they inhale the gas.

When a volcano is quiet for many years it is known as a dormant volcano. No one can ever say whether the dormat volcano will remain dormant or erupt again.

Do You Know?

The word volcano comes from the name Vulcan, which is the name of the "Roman god" of fire.

The Bauer island (near Andaman & Nicobar Islands) is the only active volcano in the Indian subcontinent.



A flooded area

FLOODS

Why do floods occur?

Heavy and continuous rainfall makes the rivers overflow which causes floods in nearby areas.

Floods can also be caused by the collapse of a dam which makes the excess water flow into adjoining areas.

Melting of snow in the summer causes river to overflow. Coastal areas are more prone to the floods, as the rapid change in air pressure may result in sea storms, known as cyclones or typhoons followed with heavy rain and storm. This causes floods in the coastal areas.

Floods cause heavy damages to the crops, lives, and properties. Along with floods come the most dreaded diseases like malaria, cholera, typhoid and dengue.

DROUGHT

Wherever there is a shortage of rain over a long period of time, there is a drought. Drought affects plants, animals, and people. It is a serious problem for farmers. Drought results from changes in the Earth's atmosphere. Some droughts are caused by shifts in the winds that bring rain to an area. Others are caused by changing ocean currents which affect the temperature and moisture of the air.



A drought-hit field

Know the Keywords :

Predictable	: Tell about in advance.
Crushing	: Break into small pieces.
Eruption	: Eject (steam, water or volcanic material) violently.

Point to Remember

- The Earth's crust is made up of plates.
- Earthquakes cause major damages to life and properties.
- Earthquakes also cause natural calamities like tidal waves, and landslides.
- Seismograph measures the location and strength of an earthquake.
- Seismograph is used to measure earthquake on the Richter scale.
- Melted hot rocks that pour out of a volcano are called lava.
- When a volcano erupts it throw out lots of harmful gases.
- A dormant volcano can erupt again.
- Tsunami is made up of many waves moving together.
- Usually Tsunami occurs after an earthquake.
- Floods occur due to heavy rainfall.
- Coastal areas are more prone to floods.
- Major cause for drought is very high temperature and no rain for a long time.

EXERCISE TIME

A. Multiple Choice Questions (MCQs).

Tick (✓) the correct word :

- The earth's crust is made up of _____.
a. waves b. plates c. gases
- Coasted areas are more prone to _____.
a. earthquakes b. floods c. tsunami
- _____ had erupted earlier but now it is not erupting
a. Dormant b. active c. tsunami
- The shortest earthquake measure the scale _____.
a. 5 b. 9 c. 7
- The tsunami waves rises to the heights as great as _____ meters.
a. 20 m b. 30 m c. 25 m

B. Fill in the blanks :

- Below the crust of the Earth lies the _____.
- Eruption of volcano caused a lot _____.
- _____ hardens before it flows far.
- _____ is a scale to measure earthquakes.
- Sometimes earthquake is followed by _____.
- Earthquake can cause many natural _____.
- The upper layer of the Earth's crust is made of _____.
- In the year _____ India had major earthquake in Gujarat.

C. Write 'T' for true and 'F' for false statements :

- Most earthquakes start 25 km below the earth's surface.
- Loose soils shake less than solid ground.
- The weakest earth sources are close to zero on the scale.
- Tidal waves are also called tsunami.
- Crust in the highest point of a wave.
- A volcano is a hill with a small opening at the top.

D. Say Yes or No :

- Tsunami means 'harbour waves' in Japanese. _____

2. Crust is the lowest point of wave. _____
3. Tsunami usually follows as earthquake. _____
4. Near the shore, ocean becomes shallower. _____
5. Tsunami is made up of one big wave. _____
6. Drought is caused by heavy rains. _____
7. Water is scarce in drought hit areas. _____

E. Match the following :

- | | |
|---------------------------------|--------------------------------|
| 1. The centre of the earthquake | a. the highest point of a wave |
| 2. Tsunami | b. magma |
| 3. Crust | c. drought |
| 4. Hot melted rock | d. harbour waves |
| 5. A shortage of rain | e. epicentre |

F. Answer the following questions :

1. Write two damages an earthquake can cause.
2. How is an earthquake measured ?
3. What happens when a volcano erupts ?
4. What makes waves larger near the shore in Tsunami ?
5. How are floods caused ?
6. Which are the dreadful diseases that spread during floods ?
7. What is drought ?



Creative Work

- Collect pictures of natural calamities from newspapers, magazines and internet and paste and label them here :

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- Imagine an earthquake happen while you were at school. Where will you go to be safe ? What action will you take to keep yourself safe ? Make a report.