

Tsunamis

INTRODUCTION



Tsunamis are massive waves that are caused by earthquakes, volcanic eruptions or other natural disasters. They are also called tidal waves. But, they actually have nothing to do with tides. The word tsunami comes from the Japanese language and means 'harbor wave'. These huge waves are extremely powerful and can destroy entire cities and coastlines. Fortunately, they do not happen very often. But, when Tsunamis happen, they cause many deaths and injuries.



Tsunamis can occur in all oceans or large seas. Around 80% happen along the Ring of Fire. It is an area along the edges of the Pacific Ocean where different plates of the Earth's crust collide against each other. These colliding plates often cause earthquakes and volcanic eruptions

which can result in a tsunami. Countries with long coastlines along the Pacific Ocean are vulnerable to tsunamis. These countries include Japan, the United States and Chile.

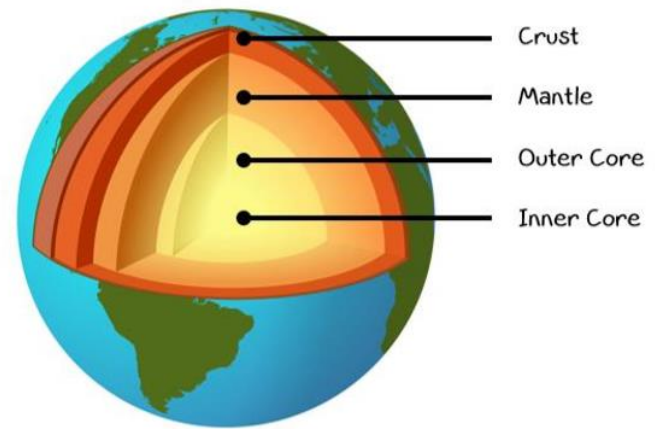
Fortunately, many coastlines have warning systems. If an earthquake occurs under the ocean that might trigger a tsunami. When this happens, the people get warned to leave the area or find high ground.



Tsunamis

HOW THEY FORM

The outermost part of the Earth is called the crust. It forms the surface of our planet. The crust consists of plates (tectonic plates) that fit together like a jigsaw puzzle. These plates are continuously moving, sliding and colliding against each other. Earthquakes are formed in the crust, along the edges of the plates (fault



lines). An earthquake occurs when plates of the Earth's crust move and collide against each other. When this phenomenon happens underwater, a massive amount of water suddenly moves. When the water is pushed up or moves into the gap, a tsunami is born.

Once the water is moved, it spreads into all directions. The waves may only be a foot high. Nonetheless, they are extremely long. The waves can be up to 60 miles long and reach speeds up to 500 miles an hour! That is almost the speed of an airplane. When a tsunami reaches shallower waters near a coastline, the waves slow down to around 50 miles per hour. However, the shallow water causes the wave to increase in height. Some tsunamis can be up to 100 feet high when they crash into the coast. Some tsunamis are so powerful that they can travel many miles inland.



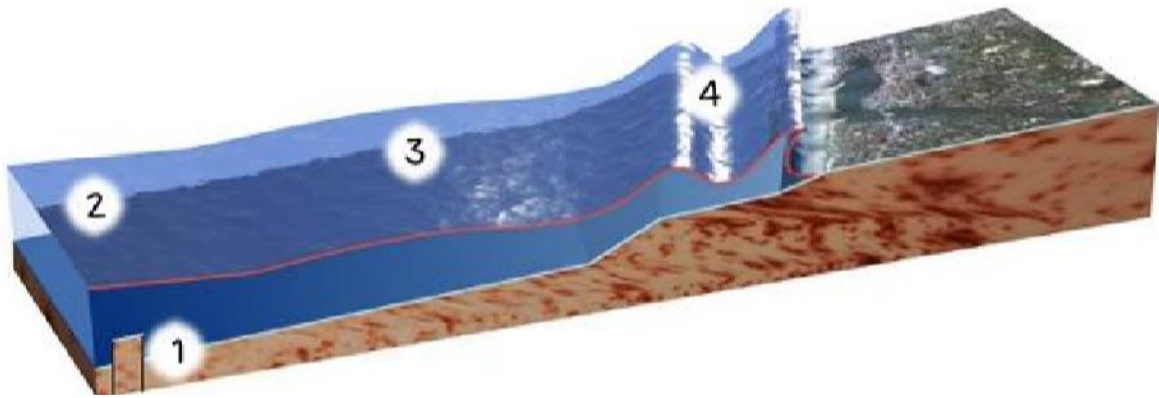
Exercise 4: Match the descriptions with their corresponding numbers on the image shown below.

() The waves are getting taller near the coast.

() Tectonic plates slide and collide against each other.

() The shaking suddenly moves a lot of water.

() Extremely long waves are formed that move very fast.



Dangerous Tsunamis

IN HISTORY

The Tohoku earthquake caused a tsunami that hit the east coast of Japan in 2011. The tidal wave reached heights of over 130 feet at some places and completely wiped out entire coastlines. The tsunami also severely damage a nuclear power plant and killed more than 15,000 people.



The deadliest tsunami ever recorded happened in 2004. A 9.1 magnitude earthquake near the coast of Indonesia in the Indian Ocean triggered a massive tsunami that killed more than 240,000 people in 14 countries.

The deadliest tsunami in the United States happened in 1964. Alaska was struck by a 9.2 magnitude earthquake that caused a major tsunami. Most towns along the coastal area were completely wiped out. The massive waves killed 119 people.

The tsunami with the highest waves took place in 1958. The mega waves were caused by a landslide and waves of 1,700 feet high!

Things to know

ABOUT TSUNAMIS



In the United States, Hawaii, Alaska, Washington, Oregon and California are at the highest risk for tsunamis.

Sometimes, half an hour before a tsunami strikes, the ocean water appears to drain away.

The waves of a tsunami are also called a 'wave train'.

A run-up and inundation are two words that are often used when speaking about a tsunami. A run-up is the highest point that the water reaches onshore above sea level. Inundation is the farthest distance that the water reaches inland.

The waves of a tsunami are different from normal waves because they do not curl and break. A tsunami wave looks like a wall of water that is moving to the shore.