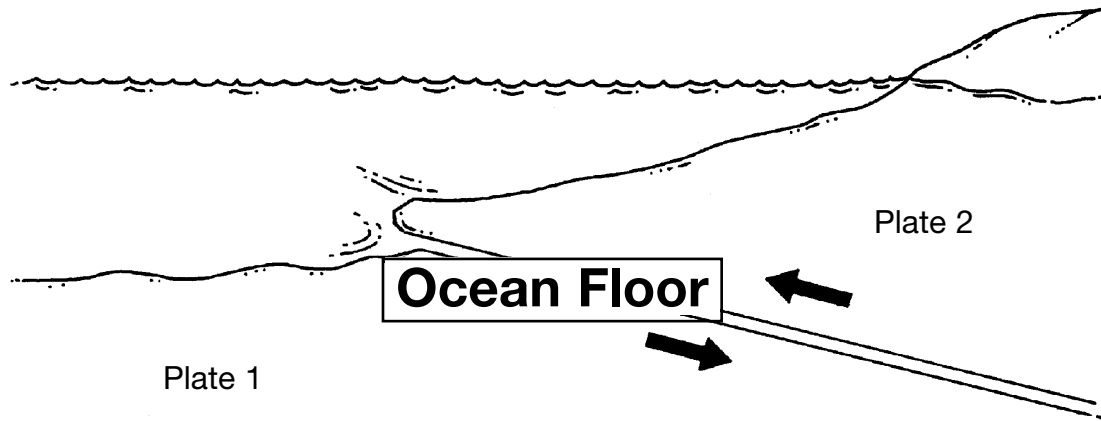


Dangerous Wave

Making the Connection: New research into the causes of tsunamis is a first step toward lessening the damage they cause.



This killer moves along the bottom of the ocean. It is swift and deadly. No, it isn't a shark. It's a tsunami—a fast-moving tidal wave of enormous force and speed.

Tsunamis can be the result of underwater landslides caused by a sudden drop in part of the ocean floor. They can also be caused by earthquakes. If an earthquake occurs near or under the water, it may set in motion a tremendous underwater wave. At the surface of the water, this underwater wave may look like little more than a gentle swell. But as it travels toward shore, its force gets stronger and stronger. When the wave reaches land, it can cause tremendous destruction. It goes crashing along the shore, bringing trees, houses, rocks, and people with it.

A large tsunami occurred in New Guinea, an island in the Pacific, in July 1998. It was caused by a landslide on the ocean floor which was triggered by an earthquake. Scientists have no way of predicting how often underwater disturbances will occur because they don't have a map of the floor of the Pacific Ocean. They don't know a lot about the floor of the Pacific except that

it is covered with mountain chains, valleys, and trenches. When an earthquake occurs or a part of the ocean floor shifts, some of these structures might collapse. What puzzled scientists about the New Guinea tsunami is that the earthquake that caused it was probably not more than 7.0 on the Richter scale.

Although an earthquake of 7.0 magnitude can be serious, scientists had always thought it was too weak to create a tsunami. The New Guinea tsunami disproved their hypothesis. Parts of the ocean floor may be so unstable that they will give way, causing a tsunami to go barreling toward shore.

Scientists hope to learn more about tsunamis by studying the ocean floor. One goal is to be able to predict the occurrence of tsunamis. That way people can leave the area. They can wait safely in a place where they and their possessions will not be harmed.

Work alone or with a partner to answer the following questions and share your ideas about tsunamis.

Location	Earthquake Magnitude	Deaths
Nicaragua	7.2	170
Indonesia	7.5	1,000
Japan Sea	7.6	330
Kuril Islands	8.1	11
Alaska	Landslide	1
Philippines	7.0	62

1. Tsunamis are more common in the Pacific Ocean than anywhere else. Which states in this country could be affected by tsunamis?

2. The chart gives information about several recent tsunamis. Use it to answer the questions.

a. Which tsunami was caused by the biggest earthquake?

b. Which tsunami caused the most deaths?

c. Which tsunami caused the fewest deaths?

d. Which tsunami wasn't caused by an earthquake?

e. Is this statement true or false? The bigger the earthquake, the more deaths caused by a tsunami.

3. A tsunami can travel as fast as 500 miles per hour. A person walks about 3 miles per hour. A car on a highway drives about 55 miles per hour.

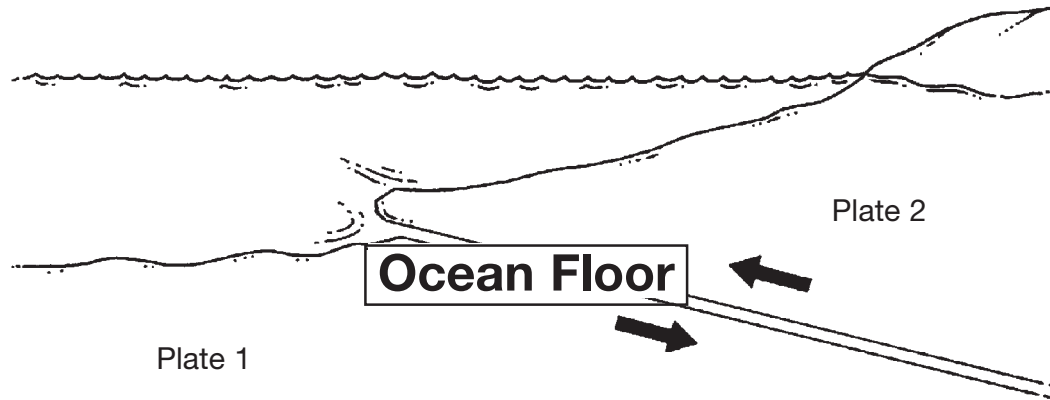
a. How many times faster than a person walks does a tsunami move? Round your answer to a whole number.

b. How many times faster than a car on a highway does a tsunami move? Round your answer to a whole number.

4. How do you think a tsunami affects the fish in an area where the tsunami strikes? Write your ideas about it below. Then work with a classmate to do research and find out more about this subject.

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1. Tsunamis are more common in the Pacific Ocean than anywhere else. Which states in this country could be affected by tsunamis?

Oregon, Washington, California

2. The chart gives information about several recent tsunamis. Use it to answer the questions.

- a. Which tsunami was caused by the biggest earthquake?

Kuril Islands

- b. Which tsunami caused the most deaths?

Indonesia

- c. Which tsunami caused the fewest deaths?

Alaska

- d. Which tsunami wasn't caused by an earthquake?

Alaska

- e. Is this statement true or false? The bigger the earthquake, the more deaths caused by a tsunami.

False

3. A tsunami can travel as fast as 500 miles per hour. A person walks about 3 miles per hour. A car on a highway drives about 55 miles per hour.

- a. How many times faster than a person walks does a tsunami move? Round your answer to a whole number.

170 times faster

- b. How many times faster than a car on a highway does a tsunami move? Round your answer to a whole number.

ten times faster

4. How do you think a tsunami affects the fish in an area where the tsunami strikes? Write your ideas about it below. Then work with a classmate to do research and find out more about this subject.

Answers will vary.
