



**Australian Government**  
**Attorney-General's Department**  
Emergency Management Australia

## EMA Schools Education

# TSUNAMI INFORMATION



## Tsunami Activity Sheet No. 1

**What are Tsunami and how do they behave?**

## 1. What are Tsunami and how do they behave?

A tsunami (pronounced soo-nah-mee) is a series of very long waves that occur over a long period of time. The word 'tsunami' is a Japanese word that means 'harbour wave'. Written in Japanese it looks like this:

津波

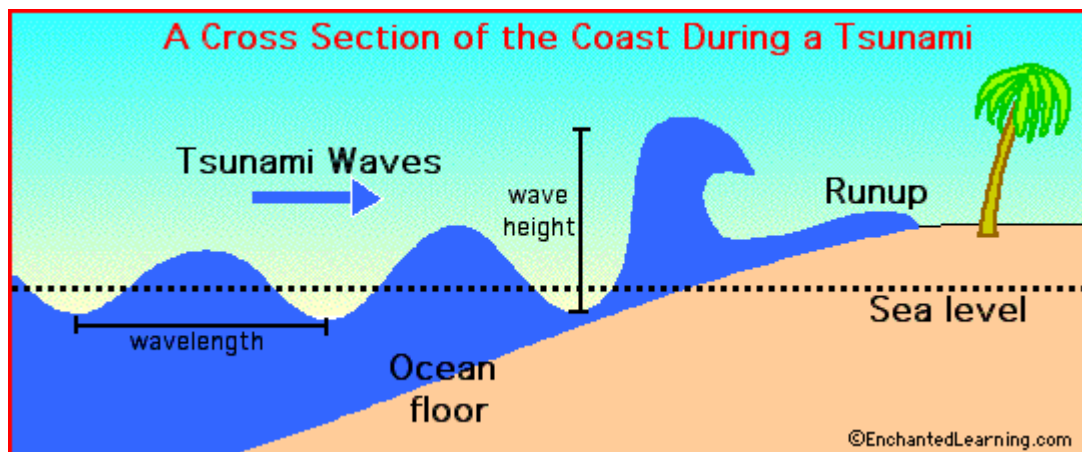
The top is "tsu" meaning harbour

The bottom is "nami", meaning wave.

### Defining a tsunami

Read the clear definition and description of a tsunami here.

<http://www.ga.gov.au/urban/factsheets/tsunami.jsp>



[Source: <http://www.enchantedlearning.com/subject/tsunami/>]

1. List three characteristics of tsunami waves.
2. How do tsunami and tidal waves differ? Draw up a table to show these differences. Draw a sketch of the above diagram and use the description that you have read to write additional notes about what is happening.

### What causes a tsunami?

Read how tsunamis occur at <http://www.ga.gov.au/urban/factsheets/tsunami2.jsp>

1. Name five events that may cause a tsunami to occur?
2. Do any of these events occur more often than others? Which is the least likely to occur?

**How do tsunami waves behave?**

Read about the features of tsunami waves here, supported with many diagrams. <http://www.enchantedlearning.com/subject/tsunami/> great introduction in simple terms with diagrams.

1. How much does an earthquake need to measure on the Richter scale before a tsunami can develop?
2. Describe a clue that might warn people on a beach that a tsunami might reach them.
3. Write definitions for the following terms: wavelength; wave crest; wave trough; wave period; run-up. Draw a sketch diagram of a wave to help you define the terms.
4. Use these terms (and a sketch) to describe what happens to a tsunami as it approaches the coast.
5. Collect equipment (bowl, water and rocks) and make a model of a tsunami. You may like to create a coastline with many characteristics such as wetlands and mangroves with a lot of vegetation; built-up areas; agricultural areas. Create your tsunami and describe what happens as the wave approaches and hits the different coastline areas.

Two more sites with animations showing tsunami waves travelling and breaking are found at <http://science.howstuffworks.com/tsunami3.htm> and <http://www.pbs.org/wnet/savageearth/animations/tsunami/index.html>

1. What type of energy is in the tsunami? What happens to that energy when it reaches the coastline?
2. Tsunami waves travel very quickly. How are they able to maintain this speed?

[http://www.prh.noaa.gov/itic/tsunami\\_events/media/graphics/general\\_maps/tsu\\_wave\\_characteristics.pdf](http://www.prh.noaa.gov/itic/tsunami_events/media/graphics/general_maps/tsu_wave_characteristics.pdf) has diagram of tsunami wave size from deep water to the coast.

1. Write a statement that summarises the relationship between wave depth, velocity, wavelength and wave height.

It takes different times for a tsunami wave to reach various coastlines.

[At this page](#), you will see a map of travel times of the Chilean earthquake.

1. Use an atlas to study the countries affected by a tsunami after the Chilean earthquake in 1960.
  - a. It took \_\_\_\_\_ hours to reach New Zealand.
  - b. It took \_\_\_\_\_ hours to reach Tasmania and \_\_\_\_\_ hours to reach the Australian mainland.
  - c. It took \_\_\_\_\_ hours to reach Taiwan.
  - d. It took \_\_\_\_\_ hours to reach the Aleutian Islands.
  - e. It took \_\_\_\_\_ hours to reach Papua New Guinea.
  - f. It took \_\_\_\_\_ hours to reach Hawaii.
  - g. It took \_\_\_\_\_ hours to reach Western Australia.
  - h. It took \_\_\_\_\_ hours to reach the Canadian coastline.