



# Tsunami Reading Comprehension **Answers**

1. Define a tsunami.

**A series of large ocean waves caused by earthquakes, underwater landslides, volcanic eruptions or asteroids.**

2. Describe where the majority of tsunamis occur.

**Most tsunamis occur on or around the Pacific Ring of Fire.**

3. Explain how an underwater earthquake can form a tsunami.

**Earthquakes can suddenly cause the seafloor to move upwards, transferring energy into the water above. The sudden movement and energy transfer create the conditions for forming large waves. Tsunami waves form as they travel into shallow water.**

4. Describe **one** other influence that can lead to the formation of a tsunami.

**Answers may include volcanic eruptions, underwater landslides or asteroid impacts.**

5. Describe **one** warning sign of an oncoming tsunami.

**Warning signs of an oncoming tsunami include:**

- an earthquake could be felt in local communities in the surrounding coastal regions;
- emergency sirens may start in areas that are prepared for a tsunami;
- text message notifications to smartphones can be sent to people living in areas that are prepared for a tsunami;
- the sea level may change rapidly just before a tsunami reaches the shoreline, such as the sea retreating suddenly before the giant wave arrives;
- news broadcasters may display or produce warnings in areas prepared for a tsunami.

6. Describe **one** short-term impact of tsunamis on coastal communities.

**Answers may include:**

- flooding of coastal areas;
- destruction of property, vehicles and personal belongings;
- loss of life;
- destruction of infrastructure such as bridges, roads, gas and electric mains;
- injuries for people caught in the pathway of the wave; the wave often contains debris that can cause injuries;
- hospitals can be overwhelmed by the number of people needing help;
- displacement of people who have had their homes destroyed by the wave;
- destruction of the local environment;
- contamination of water sources;
- uprooting trees;
- transportation interruption;

- communication can stop in areas affected by the wave;
- healthcare supplies can be disrupted;
- education centres can be disrupted.

7. Describe **one** long-term impact of tsunamis on coastal communities.

**Answers may include:**

- huge numbers of buildings may need to be rebuilt;
- infrastructure such as roads, electrical mains and water supplies may need to be rebuilt;
- psychological stress for survivors;
- loss of livelihoods and a lack of employment opportunities;
- economic costs;
- some people may never return to the area;
- changes to the environmental habitat;
- areas can become very vulnerable to another natural hazard event;
- loss of farming land due to flooding by salt water.

8. Describe **one** method communities can implement to reduce the impact of tsunamis.

**Answers may include:**

- early warning systems are used to give residents more time to evacuate from risk zones;
- preparedness and education for local communities on the best evacuation routes;
- practice tsunami drills can be used to increase preparedness;
- a ban on building on low-lying areas;
- building natural barriers such as mangroves or coral reefs to break up the power of waves as they move inland;
- building hard engineering management structures, such as sea walls to protect areas;
- sharing information and links with other international organisations to build a good knowledge base of the best possible strategies.

9. Describe how the Tsunami Early Warning System (TEWS) recognises the signs of a tsunami.

**The Tsunami Early Warning System (TEWS) includes sensors that monitor the area and gather information and data on normal conditions. The sensors can then spot when a strong wave moves past it.**

10. Describe what happens after the Tsunami Early Warning System (TEWS) identifies an oncoming tsunami wave.

**If the sensors detect a tsunami wave forming, they will send an early warning message or alert to local communities and emergency responders. The warning can also be sent via satellite communication to the internet or radio systems.**