

# Tsunami Quiz

## Preparation

This lesson will inform students of the causes and impacts of tsunamis within Australia and overseas.

Provide students with PDFs of the pages attached to this lesson plan.

Give students sufficient time to read the web pages, either within class time or as a homework task.

Ask students to make notes of the key findings of the article.

Suggested reading time: 20 minutes.

Ask students to complete the quiz either

individually, in pairs or conduct the quiz together as a class after reading the web pages.

If web access is not available in class, provide students with the attached quiz.

Suggested time for answering questions: 15 minutes

After reading the article conduct an in-class discussion to go over students' responses to the questions.

Suggested time for in-class discussion: 15minutes

## Quiz questions and answers

### Myths about tsunamis

Q1: Tsunamis are caused by the tides

True

False

A: *False. Most tsunamis are caused by undersea earthquakes*

Q2: Most tsunamis can pass unnoticed in the deep ocean

True

False

A: *True. Tsunamis are very small in the deep ocean*

Q3: A tsunami is a series of fast, low and long waves

True

False

A: *False. The reef might slow a tsunami down or reduce its impact on Cairns but it will not stop a tsunami completely.*

### How do tsunamis work?

Q4: Which answer/s best describes the tsunami phenomenon. It includes:

A: one main stage

B: three overlapping stages

C: five distinct stages

A: *B. Tsunamis have three distinct but overlapping stages*

Q5: Complete the sentence. Wind swell waves ...

A) behave the same way as a tsunami

B) behave differently to tsunamis

C) are caused by a tsunami

A: *B. Tsunami and wind-driven waves behave differently to each other*

Q6: The energy within a tsunami can cause them to:

A) fly in the air

B) travel long distances inland

C) explode

A: *A. The energy contained in a tsunami can cause them to travel a long distance inland*

### Causes of tsunamis

Q7: The majority of tsunamis are caused by volcanic eruptions in or near the ocean

True

False

A: *False*

Q8: Most undersea earthquakes and volcanic eruptions occur along subduction zones

True

False

A: *True. Most undersea earthquakes and volcanic eruptions occur along subduction zones.*

Q9: Undersea landslides can cause localised tsunamis?



True  
False

A: *True. Any movement that causes water to be displaced can cause a tsunami*

### Tsunamis through history

Q10: Draw lines to match the tsunami events in the left column to the cause of the tsunami in the right column

1883 Krakatoa	Volcanic eruption
1998 Papua New Guinea	Undersea landslide
1958 Lituya Bay	Landslide into the sea
1946 Hilo	Undersea earthquake

A: *As set out above*

### Impact of tsunamis on Australia

Q11: Australia may be susceptible to tsunami because of the following:

- A) it is surrounded by tectonic plate boundaries
- B) asteroids are always falling into the ocean nearby
- C) it is close to Japan

A: *A. There are active tectonic plate boundaries to the north and east of Australia*

Q12: What effect did the 2004 tsunami in the Indian Ocean have on Australia

- A) no effect of all
- B) total devastation of the west coast of Australia

C) several incidents involving boats and people caused by dangerous rips and currents along the west and south coasts

A: *C. Though not devastating, Australia did experience some dangerous rips and currents along the west and south coasts.*

Q13: A campsite on the west coast of Australia was devastated by

- A) a tsunami in 1960 caused by an undersea earthquake off the coast of Chile
- B) a tsunami in 2006 caused by an undersea earthquake south of Java
- C) a tsunami in 2007 caused by an undersea earthquake off the Solomon Islands

A: *B. Campers at Steep Point were lucky to escape when localised tsunami destroyed their campsite*

Q14: In 1960, Sydney Harbour experienced tsunami waves caused by

- A) an undersea earthquake off the coast of Chile
- B) a sub-marine landslide off the coast of Papua New Guinea
- C) a landslide off Sydney Heads

A: *A. The 1960 Chile tsunami resulted in the largest recorded tsunami along the east coast of Australia*

### Source

Australian Government and Surf Life Saving Australia, Beach Safe, Tsunami Education and Awareness. Available via: [http://beachsafe.org.au/tsunami/ema/pages/01\\_ema.html](http://beachsafe.org.au/tsunami/ema/pages/01_ema.html)

## Curriculum links

11	Geography	ACHGE012: Geographical knowledge and understanding; Overview of natural and ecological hazards	An overview of the nature of natural hazards (atmospheric, hydrological, and geomorphic) and ecological hazards
11	Geography	ACHGE013: Geographical knowledge and understanding; Overview of natural and ecological hazards	The concept of risk as applied to natural and ecological hazards
11	Geography	ACHGE023: Geographical knowledge and understanding; Depth and study of an ecological hazard	The magnitude, frequency, duration, temporal spacing and effects of the hazard
11	Geography	ACHGE024: Geographical knowledge and understanding; Depth and study of an ecological hazard	The diffusion and resulting spatial distribution of the hazard, and how an understanding of biophysical and human processes can be used to explain its spread
11-12	Earth & environmental science	ACSES098: Science understanding; The cause and impacts of Earth hazards	Earth hazards result from interactions of Earth systems and can threaten life, health, property, or the environment; their occurrence may not be prevented but their effect can be mitigated
11-12	Earth & environmental science	ACSES099: Science understanding; The cause and impacts of Earth hazards	Plate tectonic processes generate earthquakes, volcanic eruptions and tsunamis; the occurrence of these events affects other Earth processes and interactions (eg ash clouds influence global weather)
11-12	Earth & environmental science	ACSES100: Science understanding; The cause and impacts of Earth hazards	Monitoring and analysis of data, including earthquake location and frequency data and ground motion monitoring, allows the mapping of potentially hazardous zones, and contributes to the future prediction of the location and probability of repeat occurrences of hazardous Earth events, including volcanic eruptions, earthquakes and tsunamis
11-12	Geography	ACSGE013: Geographical knowledge and understanding; Overview of natural and ecological hazards	The concept of risk as applied to natural and ecological hazards
12	Earth & environmental science	ACSES094: Science as a human endeavour; The cause and impact of earth hazards	People can use scientific knowledge to inform the monitoring, assessment and evaluation of risk
12	Earth & environmental science	ACSES098: Science Understanding; The cause and impact of earth hazards	Earth hazards result from the interactions of Earth systems and can threaten life, health, property, or the environment; their occurrence may not be prevented but their effect can be mitigated
12	Earth & environmental science	ACSES099: Science Understanding; The cause and impact of Earth Hazards	Plate tectonic processes generate earthquakes, volcanic eruptions and tsunamis; the occurrence of these events affects other Earth processes and interactions (for example, ash clouds influence global weather)
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# Tsunami quiz

## Myths about tsunamis

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- True
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**Q2: Most tsunamis can pass unnoticed in the deep ocean**

- True
- False

**Q3: A tsunami is a series of fast, low and long waves**

- True
- False

## How do tsunamis work?

**Q4: Which answer/s best describes the tsunami phenomenon. It includes:**

- A: one main stage
- B: three overlapping stages
- C: five distinct stages

**Q5: Complete the sentence. Wind swell waves ...**

- A) behave the same way as a tsunami
- B) behave differently to tsunamis
- C) are caused by a tsunami

**Q6: Draw down distance can depend on ...**

- A) wavelength of a tsunami
- B) slope of the beach
- C) both of the above

**Q7: The energy within a tsunami can cause them to:**

- A) fly in the air
- B) travel long distances inland
- C) explode

## Causes of tsunamis

**Q8: The majority of tsunamis are caused by volcanic eruptions in or near the ocean**

- True
- False

**Q9: Most undersea earthquakes and volcanic eruptions occur along subduction zones**

- True
- False

**Q10: Undersea landslides can cause localised tsunamis?**

- True
- False

## Tsunamis through history

**Q11: Draw lines to match the tsunami events in the left column to the cause of the tsunami in the right column**

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**Q14: A campsite on the west coast of Australia was devastated by**

- A) a tsunami in 1960 caused by an undersea earthquake off the coast of Chile
- B) a tsunami in 2006 caused by an undersea earthquake south of Java
- C) a tsunami in 2007 caused by an undersea earthquake off the Solomon Islands

**Q15: In 1960, Sydney Harbour experienced tsunami waves caused by**

- A) an undersea earthquake off the coast of Chile
- B) a sub-marine landslide off the coast of Papua New Guinea
- C) a landslide off Sydney Heads