

TSUNAMI

Quiz

Preparation

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

Students can access necessary information via the Beach Safe Tsunami education and awareness pages at http://beachsafe.org.au/tsunami/ema/pages/01_ema.html.

PDFs of the pages are 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.

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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 rip currents along the west and south coasts

A: C. Though not devastating, Australia did experience some dangerous rip 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

Curriculum links

3	Science	ACSHE050: Science as a Human Endeavour: Nature and development of science	Science involves making predictions and describing patterns and relationships
4	Science	ACSSU075: Earth and Space Sciences Nature and development of science	Science involves making predictions and describing patterns and relationships
		ACSHE062: Science as a Human Endeavour; Use and influence of science	Science knowledge helps people to understand the effect of their actions
5	Geography	ACHGK030: Geographical Knowledge and Understanding	The impact of wildfires or floods on environments and communities and how people can respond
6	Science	ACSSU096: Science Understanding; Earth and Space Sciences	Sudden geological changes or extreme weather conditions can affect Earth's surface
		ACSHE098: Science as a Human Endeavour; Nature and development of science	Science involves testing predictions by gathering data and using evidence to develop explanations or events and phenomena
		ASHE099: Science as a Human Endeavour; Nature and development of science	Important contributions to the advancement of science have been made by people from a range of cultures
		ACSHE100: Science as a Human Endeavour. Use and influence of science	Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives

Sources

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

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- 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

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- C) a landslide off Sydney Heads