

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 <https://knowledge.aidr.org.au/tsunami-the-ultimate-guide/#/>

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: 15 minutes

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

Curriculum links

7	Science	ACSHE223: Science as a Human Endeavour; Nature and development of science	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures
7	Science	ACSHE121: Science as a Human Endeavour; Use and influence of science	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity
7	Geography	ACHGK042: Geographical knowledge and understanding; Water in the world	Causes, impacts and responses to an atmospheric or hydrological hazard
7	Geography	ACHGS050: Geographical inquiry and skill; Collecting, recording, evaluating and representing	Represent spatial distribution of different types of geographical phenomena by constructing appropriate maps at different scales that conform to cartographic conventions, using spatial technologies as appropriate
7	Humanities & Social Science	ACHASSK183: Knowledge and Understanding; Geography	The way that flows of water connect places as they move through the environment and the way these affect places
7	Humanities & Social Science	ACHASSK185: Knowledge and Understanding; Geography	The nature of water scarcity and ways of overcoming it, including studies drawn from Australia and West Asia and/or North Africa

Classroom activity

Classroom resources provided by Cairns Regional Council



7-8	Health & Physical Education	ACPPS072: Personal, Social and Community Health; Being healthy, safe and active	Practise and apply strategies to seek help for themselves or others
7-8	Health & Physical Education	ACPPS073: Personal, Social and Community Health: Being healthy, safe and active	Investigate and select strategies to promote health, safety and wellbeing
7-8	Health & Physical Education	ACPPS077: Personal, Social and Community Health; Contributing to healthy and active communities	Plan and use health practices, behaviours and resources to enhance health, safety and wellbeing of their communities
8	Science	ACSHE135: Science as a Human Endeavour; Use and influence of science	Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations
8	Science	ACSHE136: Science as a Human Endeavour; Use and influence of science	Science understanding influences development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management
8	Geography	ACHGK053: Geographical Knowledge & Understanding; Landforms and landscapes	The causes, impacts and response to a geomorphological hazard
9	Science	ACSHE160: Science as a Human Endeavour; Use and influence of science	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities
9	Science	ACSHE161: Science as a Human Endeavour; Use and influence of science	Advances in science and emerging science and technologies can significantly affect people's lives including generating new career opportunities
9	Science	ACSSU180: Science Understanding; Earth & Space Sciences	The theory of plate tectonics explains global patterns of geological activity and continental movement
9	Geography	ACHGK063: Geographical Knowledge & Understanding; Biomes and food security	The challenges to food production, including land and water degradation, shortage of fresh water, competing land uses, and climate change, for Australia and other areas of the world
9	Geography	ACHGS069: Geographical Inquiry and Skills; Interpreting, analysing and concluding	Identify how geographical information systems might be used to analyse geographical data and make predictions
9-10	Health & Physical Education	ACPPS091: Personal, Social and Community Health; Being healthy, safe and active	Plan, rehearse and evaluate options (including CPR and first aid) for managing situations where their own or others' health, safety and wellbeing may be at short or long term risk
9-10	Health & Physical Education	ACPPS096: Personal, Social and Community Health; Contributing to healthy and active communities	Plan, implement and critique strategies to enhance health, safety and wellbeing of their communities
10	Science	ACSSU189: Science Understanding; Earth and Space Science	Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere
10	Science	ACSHE191: Science as a Human Endeavour; Nature and development of science	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community
10	Geography	CHGK070: Geographical Knowledge & Understanding; Environmental change and management	The human-induced environmental changes that challenge sustainability management

Tsunami quiz

Myths about tsunamis

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- False

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?

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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