Classroom activity

Classroom resources provided by Cairns Regional Council

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/resources/the-ultimate-guide-tsunami/#/

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 displaced can cause a tsunami

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get ready QUEENSLAND

Cairns REGIONAL COUNCIL

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 ad people caused by dangerous rips and currents along the west and south coasts

A: C. Though not devastating, Australia did experience some dangerous rips adn 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 & development of science	Science involves making predictions and describing patterns and of science relationships
3	Science	ACSHE051:Science as a Human Endeavour; Use and influence of science	Science knowledge helps people to understand the effect of their actions
3	Geography	ACHASSK069: Knowledge and Understanding	The similarities and differences between places in terms of their type of settlement, demographic characteristics and the lives of the people who live there, and people's perceptions of these places
3-4	Health & Physical Education	ACPPS035: Personal, Social and Community Health; Being healthy, safe and active	Describe and apply strategies that can be used in situations that make them feel uncomfortable or unsafe
3-4	Health & Physical Education	ACPPS039: Personal, Social and Community Health; Communicating and interacting for health and wellbeing	Discuss and interpret health information and messages in the media and internet
4	Science	ACSSU075: Earth and Space Sciences; Nature & development of science	Science involves making predictions and describing patterns and of science relationships
4	Science	ACSHE062: Science as a Human Endeavour; Use & influence of science	Science knowledge helps people to understand the effect of their actions
5	Geography	ACHASSK112: Knowledge and Understanding	The influence of people, including Aboriginal and Torres Strait Islander Peoples, on the environmental characteristics of Australian places
5	Geography	ACHASSK113: Knowledge and Understanding	The environmental and human influences on the location and characteristics of a place and the management of spaces within them

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5	Geography	ACHASSK114: Knowledge and Understanding	The impact of bushfires or floods on environments and communities, and how people can respond
5	Science	ACSHE083: Science as a Human Endeavour; Use and influence of science	Scientific knowledge is used to solve problems and inform personal and community decisions
5-6	Health & Physical Education	ACPPS054: Personal, Social and Community Health; Being healthy, safe and active	Plan and practice strategies to promote health, safety and wellbeing
6	Science	ACSSU096: Science Understanding: Earth and Space Sciences	Sudden geological changes or extreme weather conditions can affect Earth's surface
6	Science	ACSHE098: Science as a Human Endeavour; Nature & development of science	Science involves testing predictions by gathering data and using evidence to develop explanations or events and phenomena
6	Science	ACSHE100: Science as a Human Endeavour; Use & influence of science	Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives

Tsunami quiz

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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

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

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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