



Terrifying Tsunamis

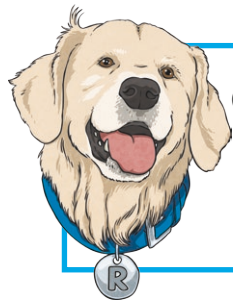
What is a Tsunami?

The word tsunami is pronounced /soo-NAH-mee/. It comes from two Japanese words: tsu meaning 'harbour' and nami meaning 'wave', so tsunami literally means 'harbour wave'. A tsunami is an extremely large wave, which can travel across the ocean faster than jet plane, destroying everything in its path – including whole islands and everything on them.



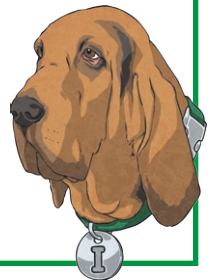
As they are both powerful and destructive, tsunamis are sometimes called tidal waves by mistake. A tsunami is not the same as a tidal wave because tsunamis have nothing to do with the tide.

Usually, two tsunamis happen every year across the world, with a really bad tsunami happening once in every fifteen years. Around four out of every five tsunamis happen within the 'Ring of Fire' – an area in the Pacific Ocean where earthquakes and volcanic eruptions often take place.



Q1: What does the word tsunami mean?

Q2: Why might people confuse tsunamis and tidal waves?



Q3: '*...which can travel across the ocean faster than a jet plane...*'

Why does the author describe a tsunami in this way?

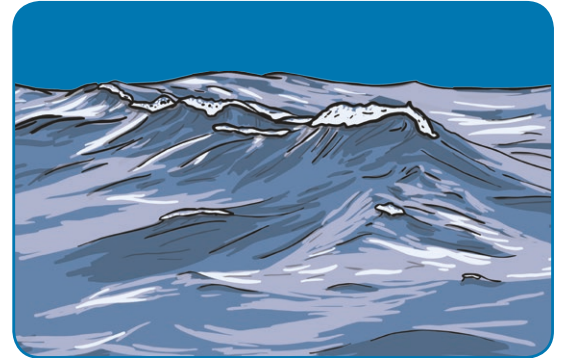


How Are Tsunamis Caused?

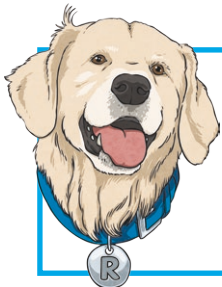
Tsunamis can be caused by many natural events, such as underwater landslides, volcanic eruptions or the Earth being hit by a meteor. However, tsunamis are most commonly caused by earthquakes.

The Earth's crust is made up of giant slabs of rock, called tectonic plates. These plates are always moving but only by around 2cm per year. Sometimes, as they move, they can grind together. If the plates get stuck whilst moving, pressure builds up and they can suddenly slam into a new position. This causes an earthquake.

If this happens beneath the sea floor, the water above the plates rises and suddenly starts to spread across the ocean. This is a tsunami. Out in the open ocean, the tsunami's waves are only around 1 metre high. However, as the waves travel towards land, they slow down and begin to grow. They can grow to over thirty metres tall – as tall as the famous statue Christ the Redeemer, which towers over Rio de Janeiro in Brazil.



The height of a tsunami's waves can change depending on where it hits the coast. Where a large wave caused by an average storm could travel up to 150 metres inland, a tsunami's waves could reach up to a terrifying 1,500m –ten times further.



Q4: Approximately how much do tectonic plates move each year?

Q5: Why do you think the author compares the height a tsunami can reach to a famous statue in Brazil?



Q6: Find and copy an adjective which describes the distance a tsunami can travel inland.



Q7a: How is the information in this text organised?

Q7b: For what reason has this been done?



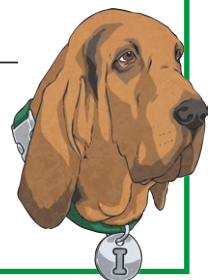
How Can I Survive a Tsunami?

Before a tsunami strikes, eagle-eyed scientists can spot a few warning signs that may help to save lives. Tsunamis can cause the ground near the coast to shake for more than twenty seconds at a time, and may cause the ocean to pull backwards, leaving bare sand where the sea used to be. There may also be loud, booming noises which come from nowhere. It is not just humans who can take notice of these warning signs. Around the time that a tsunami is about to strike, animals can be seen behaving strangely or beginning to leave the area.

If any of these signs are spotted, you must immediately move away from coastal areas and make your way to higher ground, not making the common mistake of stopping to pack up belongings or visit friends. If it is not possible to escape to higher ground, many people manage to survive tsunamis by clinging on to floating objects – allowing themselves to be taken wherever the water wants to flow.

In an attempt to save lives in the future, scientists have developed the Pacific Tsunami Warning System, based in Hawaii, USA. This system gives plenty of time to warn people living in vulnerable coastal areas. Despite the huge cost, systems like this are being built to protect people living beside the ocean all around the world.

Q8: Why do you think that packing up belongings or visiting friends is a 'common mistake'?



Q9: *'...eagle-eyed scientists can spot a few warning signs...'*

Why does the word 'eagle-eyed' tell you about the scientists?



Q10: Why are systems like the Pacific Tsunami Warning System being built around the world if they are so expensive?



Q11: Summarise what you have read in 25 words or less.





Terrifying Tsunamis Answers

Q1: What does the word tsunami mean?

Accept the answer 'harbour wave' only.

Q2: '*...they'd plunder and pillage with glee.*' What do you think that this phrase means?

Accept answers which equate the phrase to meaning happily stealing / robbing / thieving from other ships.

Q2: Why might people confuse tsunamis and tidal waves?

Accept any answer which relates to the fact that tsunamis and tidal waves are both overly large waves which cause damage, such as:

- They might get them mixed up because they are both extremely big waves.
- They are both big waves which cause a lot of damage.

Q3: '*...which can travel across the ocean faster than a jet plane...*'

Why does the author describe a tsunami in this way?

Accept answers which relate to the author's intent to explain a tsunami's speed in a way that regular readers would understand, such as:

- It helps the reader to understand it because most people know how fast a plane travels.
- By comparing it to something they know, the reader can understand it better.

Q4: Approximately how much do tectonic plates move each year?

Accept the answer '(around) 2cm' only.

Q5: Why do you think the author compares the height a tsunami can reach to a famous statue in Brazil?

Accept answers which relate to the author's intent to explain a tsunami's height in a way that regular readers would understand, such as:

- **It helps the reader to understand it because most people can imagine how tall that statue is compared to themselves.**
- **By comparing it to something they know, the reader can visualise it better.**

Q6: Find and copy an adjective which describes the distance a tsunami can travel inland.

Accept the answer 'terrifying' only.

Q7a: How is the information in this text organised?

Accept any one or both of the following answers:

- **The author has used subheadings.**
- **It is organised by topic – the text is split into sections about different things.**

Q7b: For what reason has this been done?

Accept any answer which relates to making the text easier to read, making it easier to find specific bits of information or organising the text by content.

Q8: Why do you think that packing up belongings or visiting friends is a 'common mistake'?

Accept answers which discuss the fact that a lot of people would do this, not wanting to lose their items or leave their friends in danger, such as:

It might be a common mistake because lots of people rush back for their items because they don't want to lose them and then get caught by the tsunami.

Q9: '...eagle-eyed scientists can spot a few warning signs...'

Why does the word 'eagle-eyed' tell you about the scientists?

Accept answers which relate to scientists being very observant, quick to respond, always watching or especially good at their jobs, such as:

It tells us that the scientists are always watching carefully for the warning signs.

Q10: Why are systems like the Pacific Tsunami Warning System being built around the world if they are so expensive?

Accept answers which state that the value of human lives and safety outweighs the cost of the systems, such as:

- **Even though they are expensive, it is worth the money to save many lives.**
- **They are being built because the cost is nothing compared to the value of the lives they will save.**
- **The money does not matter because they are so important to safety.**

Q11: Summarise what you have read in 25 words or less.

Accept any reasonable summary of the text, including the definition of a tsunami, provided that it is given in 25 words or less, such as:

'Tsunamis are large waves that are caused by earthquakes, which grow over 30m tall and can travel 1,500m inland. People must get to higher ground.'