

## Oral Tradition and Science

**Overview:**

During this activity, students read stories about two groups of people who survived the December 26, 2004 Indian Ocean Tsunami. One group survived because of an oral tradition warning that an earthquake and a sudden recession of seawater from the shore are harbingers of a tsunami. The other group survived because a young girl used scientific reasoning learned in school to deduce that a tsunami was coming. Students will understand that oral tradition and science are methods of gaining knowledge through careful observation.

**Objectives:**

The student will:

- read two survival stories of the December 26, 2004 Indian Ocean Tsunami;
- understand the similarities between oral traditions and scientific reasoning; and
- recognize oral tradition and scientific reasoning as methods of gaining knowledge through careful observation.

**Materials:**

- Student Information Sheet: “Tsunami Survivors”
- Student Worksheet: “Oral Tradition and Science”

**Answers to Student Worksheet:**

Oral Tradition	Scientific Reasoning
<p><b>Who?</b> The Adamanese people</p> <p><b>When?</b> December 26, 2004</p> <p><b>Where?</b> Adaman and Nicobar Islands</p> <p><b>What?</b></p> <p>(2) The Andaman people saw the water recede, revealing the sea floor.</p> <p>(1) The Andaman people felt the earthquake.</p> <p>(4) The Andaman people fled to higher ground.</p> <p>(3) The Andaman people thought a huge wave would come.</p> <p><b>How?</b> They had an oral tradition, passed from generation to generation, which described tsunami signs.</p> <p><b>Why?</b> Their ancestors wanted to educate future generations about the danger of tsunamis, in the hopes that future generations would survive these devastating events.</p>	<p><b>Who?</b> Tilly Smith and other beachgoers</p> <p><b>When?</b> December 26, 2004</p> <p><b>Where?</b> Maikhao Beach, Thailand</p> <p><b>What?</b></p> <p>(4) Tilly alerted her family and other beachgoers, and fled to her hotel.</p> <p>(2) Tilly saw the water recede suddenly from the beach.</p> <p>(1) Tilly saw the seawater become “all bubbly.”</p> <p>(3) Tilly thought there was going to be a tsunami.</p> <p><b>How?</b> Tilly’s geography teacher taught a lesson about tsunamis, which included a video of a Hawaiian tsunami.</p> <p><b>Why?</b> Teachers and schools seek to educate students about tsunamis so that students are prepared if they see the signs of a tsunami and so that they will understand the dynamic processes that shape Earth.</p>

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### *Activity Procedure:*

1. Introduce the activity by explaining that oral tradition and science are methods of gaining knowledge through careful observation.
2. Distribute the Student Information Sheet: “Tsunami Survivors” and the Student Worksheet: “Oral Tradition and Science.” Ask students to read the two articles on the Student Information Sheet, then review the Student Worksheet instructions.
3. After the activity, ask students how oral tradition and scientific reasoning are similar and how they differ.

## Tsunami Survivors

### Oral Tradition Saves Aboriginal Tribes

A week after the December 26, 2004, Indian Ocean Tsunami, the fate of the Jarawa, Sentinelese, Great Andamanese, Onge, and Shompen people was unknown. These ancient tribes, known collectively as Andamanese, have lived on the Andaman and Nicobar Islands along the eastern edge of the Bay of Bengal for tens of thousands of years. Outsiders feared the catastrophic wall of water had wiped out the estimated 500 remaining Andamanese. The Andamanese, however, had a surprise in store for the rest of the world. They survived the devastating tsunami that claimed the lives of so many of their neighbors. In fact, not one Andamanese is known to have died that December morning.

Nau, a woman of the Great Andaman tribe, attributed their survival to traditional knowledge. "It's happened before," she explained. "Our forefathers said, if the earth shakes, the sea will rear up and thrash onto the ground." (qtd. in Mukerjee) Nau's group heeded this warning, and fled to higher ground. Other groups of Andamanese had similar experiences. Some sought refuge when the earth shook, others knew the wave would come when they saw the water draw back from the shore, revealing an expanse of the sea floor.

The survival of the Andamanese people is rooted in oral tradition. Ancient knowledge passed from generation to generation, often in the form of legends and folklore, advised these indigenous people of what to do if they saw the signs of a tsunami. Thanks to the prudence of their ancestors, the Andamanese live on.

#### Sources:

Bhaumik, Subir. "Tsunami Folklore Saved Islanders." *BBC News* (2005).

Devraj, Ranjit. "Tsunami: Andaman Tribes Have Lessons to Teach Survivors." *Independent Media TV* (2005).

Mukerjee, Madhusree. "Lessons on Island Living." *South Asian Magazine for Action and Reflection*, Issue 19 (2005).

### Schoolgirl's Scientific Reasoning Saves Beachgoers

On December 26, 2004, Tilly Smith was vacationing with her family on Maikhao Beach in Thailand, unaware that the fate of her family and fellow beachgoers would soon rest on her ten-year-old shoulders.

As she played on the beach, Tilly noticed the seawater "go funny." (qtd. in Associated Press) Tilly said, "There were bubbles and the tide went out all of a sudden" (qtd. in Associated Press). Two weeks before, at her school near London, England, Tilly had studied tsunamis and learned that this change in the seawater might mean a catastrophic wave was on its way. Says Tilly, "I recognized what was happening and had a feeling there was going to be a tsunami. I told my mummy" (qtd. in Assoc. Press).

Tilly's parents alerted others and 100 people were evacuated from the beach just before the devastating wave struck. Tilly and her family sought refuge in their hotel, which withstood the onslaught of water. Maikhao Beach is one of only a few in the area where no one was killed or seriously injured during the tsunami.

Tilly attributes her quick assessment of the situation to geography teacher Andrew Kearney, who taught her class about tsunamis. The seawater changes Tilly witnessed were exactly the same as those in a Hawaiian tsunami video that Kearney showed Tilly's class. Thanks to Tilly's conscientious attention to her studies, and her quick scientific reasoning, 100 beachgoers returned to their families.

#### Sources:

Associated Press. "Schoolgirl Saved Family and Others by Recognizing Signs of Coming Tsunami." *eNew Mexican* (1.02.2005) [www.freenewmexican.com/news/8752.html](http://www.freenewmexican.com/news/8752.html).

McGrory, Daniel. "Girl's Sea Warning Saved a Hundred." *Times Online* (1.01.2005) <http://www.timesonline.co.uk/>.

Owen, James. "Tsunami Family Saved by Schoolgirl's Geography Lesson." *National Geographic News* (1.18.2005).

## Oral Tradition and Science

**Directions:** Oral tradition and science are methods of gaining information through careful observation. They are two different ways of understanding an event or formation. Use the information from the articles on the Student Information Sheet: “Tsunami Survivors” to complete the chart below.

Oral Tradition	Scientific Reasoning
<b>Who?</b>	<b>Who?</b>
<b>When?</b>	<b>When?</b>
<b>Where?</b>	<b>Where?</b>
<b>What happened? (number events 1-4 in proper sequence)</b>  ____ The Andaman people saw the water recede, revealing the sea floor.  ____ The Andaman people felt the earthquake.  ____ The Andaman people fled to higher ground.  ____ The Andaman people thought a huge wave would come.	<b>What happened? (number events 1-4 in proper sequence)</b>  ____ Tilly alerted her family and other beachgoers, and fled to her hotel.  ____ Tilly Smith saw the water recede suddenly from the beach.  ____ Tilly saw the seawater become “all bubbly.”  ____ Tilly thought there was going to be a tsunami.
<b>How did the Andamanese learn to recognize the signs of a tsunami?</b>	<b>How did Tilly Smith learn to recognize the signs of a tsunami?</b>
<b>Why did the Andamanese have an oral tradition about tsunamis?</b>	<b>Why do students learn about tsunamis in school?</b>