



## Overview:

In this lesson, students develop a brochure to share safety information associated with earthquakes, tsunamis and volcanoes. This lesson assumes students know the ways tsunamis are generated from lessons in Unit 3: Tsunami Generation.

## Targeted Alaska Grade Level Expectations:

### Science

- [5-8] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [5] SA2.1 The student demonstrates an understanding of the attitudes and approaches to scientific inquiry by supporting the student's own statements with facts from a variety of resources and by identifying their sources.
- [7] SD2.2 The student demonstrates an understanding of the forces that shape Earth by describing how the movement of the tectonic plates results in both slow changes (e.g., formation of mountains, ocean floors, and basins) and short-term events (e.g., volcanic eruptions, seismic waves, and earthquakes) on the surface.
- [6] SD2.3 The student demonstrates an understanding of the forces that shape Earth by describing how the surface can change rapidly as a result of geological activities (i.e., earthquakes, tsunamis, volcanoes, floods, landslides, avalanches).

### Writing

- [5-6] 2.2.2 The student writes for a variety of purposes and audiences by writing in a variety of nonfiction forms using appropriate information and structure (i.e., step-by-step directions, descriptions, observations, or report writing).
- [7-8] 3.2.2 The student writes a variety of purposes and audiences by writing in a variety of nonfiction forms (e.g., letter, report, biography, and/or autobiography) to inform or describe.
- [5-6] 2.5.1 The student documents sources by giving credit for others' ideas, images, and information by citing title and source (e.g., author, storyteller, translator, songwriter, or artist) (L).
- [7] 3.5.1 The student documents sources by giving credit for others' ideas, images, and multimedia information by citing sources, including author, title, and publishing information (using simplified MLA or APA style) (L).
- [8] 3.5.1 The student documents sources by giving credit for others' ideas, images, and multimedia information, including others' ideas directly quoted or paraphrased by student, by citing sources, including author, title, publishing information, and page number (using simplified MLA or APA style) (L).

## Objectives:

The student will:

- research and report science and safety practices associated with earthquakes, tsunamis and volcanoes;
- develop a brochure using Microsoft Word; and
- cite sources of information

## Materials:

- Haeussler, P.J. (1994). *Are you prepared for the next big earthquake in Alaska?* Fairbanks, AK: Alaska Earthquake Information Center.
- National Weather Service, West Coast and Alaska Tsunami Warning Center (n.d.). *Tsunami safety advice* available from: <http://wcatwc.arh.noaa.gov/tsunamiready/safety1.pdf>
- United States, Intergovernmental Oceanographic Commission, International Tsunami Information Center, & France. (2002). *Tsunami: The great waves*. Washington, D.C.: NOAA.
- Computer with Microsoft Word
- Microsoft Word Form: "Tsunami Safety Brochure," available under Student Resources/Forms on the ATEP Website (<http://www.AKtsunami.org>).

## Whole Picture:

Mitigation is the action of lessening the severity of an event. Education is the best form of mitigation for tsunamis and earthquakes.

In Alaska, Tsunami Awareness Week is held annually during the last week of March in remembrance of the Good Friday earthquake and tsunami on March 27, 1964. As a tsunami mitigation and public service activity, this lesson incorporates the spirit of the Tsunami Awareness Week as Alaskans are reminded of Alaska's tsunami history and prepare for tsunami hazard in their local areas.

## Activity Preparation:

Print out a copy of the Microsoft Word Form: "Tsunami Safety Brochure" (see Materials, above for URL) and make copies for distribution.

## Activity Procedure:

1. Write the definition of mitigation on the board and ask students: "What is the best form of mitigation for tsunamis and earthquakes?" The answer is "education." Explain that brochures are one way people may learn about a safety topic. Teaching options for the following activity include instruction as a class, group or individual activity. Distribute a copy of the brochure template to show students what information they are expected to collect and produce. For this activity, an event may be an earthquake, tsunami or volcanic activity. Possible safety topics include: Natural Warning Signs; Earthquake Safety — During the Earthquake; Earthquake Safety—After the Earthquake; Disaster Supply Kit; Tsunami Safety; and Tsunami Safety for Boaters.
2. Distribute the booklets on earthquake and tsunami safety and preparedness. Explain that students will select a specific topic to develop a brochure related to earthquake and tsunami science and safety. Science content that displays information on tsunami generation may be viewed at [http://www.aktsunami.org/multimedia/58\\_unit3.html](http://www.aktsunami.org/multimedia/58_unit3.html). Allow time for students to look through information.
3. Show students how to access the Microsoft Word Form: "Tsunami Safety Brochure" (see Materials, above for URL) and enter information. Encourage students to be creative and try different settings for colors, fonts and graphics on the document without changing the required information. Direct students to save the file using "Save As" to the appropriate location.
4. Set brochures out for display.

## Answers:

*Student's brochure must include:*

1. *A title*
2. *A heading for the event (outside right flap)*

3. *A brief definition of the content (inside left flap)*
4. *A heading for science content (inside left flap)*
5. *A description of the science behind the event (inside left flap)*
6. *A heading for the related safety topic (inside center)*
7. *Safety tips, a list or description (inside center)*
8. *A list of sources of information in a format appropriate for student's grade level (see grade level expectations)*

**MAIN INSIDE HEADING**

**TITLE FOR RELATED SAFETY TOPIC**

Insert description of the science behind how the event occurs.

Insert safety information here. Some possible topics include:

Natural Warning Signs

Earthquake Safety — During the Earthquake

Earthquake

Earthquake Safety — After the

Earthquake

Disaster Supply Kit

Tsunami Safety

Tsunami Safety for Boaters

Sources:  
List your sources of information here

**HEADING FOR DEFINING  
EVENT**

Write a brief definition  
of the event  
(earthquake or tsunami)  
here

Your name(s) here

**TITLE GOES  
HERE**