

Overview:

In this lesson, students interview a law enforcement officer, an emergency responder and/or a local authority on community preparedness for earthquakes and tsunamis. Students then design a survey of community skills and interview members of the community and present their findings to authorities. This activity will take two to four class periods.

Targeted Alaska Grade Level Expectations:

Science

- [7-8] SA1.2 The student demonstrates an understanding of the processes of science by collaborating to design and conduct simple repeatable investigations, in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings.
- [5] SE1.1 The student demonstrates an understanding of how to integrate scientific knowledge and technology to address problems by identifying a community problem or issue and describing the information needed to develop a scientific solution.

Math

- [5] PS-3 The student communicates his or her mathematical thinking by representing problems using mathematical language including concrete, pictorial, and/or symbolic representation; or organizing and communicating mathematical problem-solving strategies and solutions using mathematical language.
- [6] PS-3 The student communicates his or her mathematical thinking by representing problems using mathematical language including concrete, pictorial, and/or symbolic representation; or using appropriate vocabulary, symbols, and technology to explain mathematical solutions.
- [7] PS-3 The student communicates his or her mathematical thinking by representing mathematical problems numerically, graphically, and/or symbolically; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions.
- [8] PS-3 The student communicates his or her mathematical thinking by representing mathematical problems numerically, graphically, and/or symbolically, translating among these alternative representations; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions.
- [6] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world context such as social studies, friends, school and community.
- [7] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as science, humanities, peers, and community.
- [8] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as science, humanities, peers, community, and careers.

Writing

- [7-8] 3.2.2 The student writes for 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.

Objectives:

The student will:

- interview local safety and emergency personnel;
- create a graph using Microsoft Excel; and
- analyze, interpret data and present findings of a local survey of community skills.

Materials:

- Atwater, B.F. (1999). *Surviving a tsunami—Lessons from Chile, Hawaii, and Japan*. Reston, Va: U.S. Dept. of the Interior, U.S. Geological Survey. (<http://pubs.usgs.gov/circ/c1187/>)
- Haeussler, P.J. (1994). *Are you prepared for the next big earthquake in Alaska?*: Fairbanks, AK: Alaska Earthquake Information Center.
- Computers with access to Microsoft Excel and Microsoft Word
- STUDENT WORKSHEET: “Community Skills Interview”
- STUDENT WORKSHEET: “Community Skills Data and Findings”

Whole Picture:

How prepared is your community in the event of a disaster from an earthquake and tsunami? What skills exist in the local community that could benefit others in the event and aftermath of an earthquake and tsunami? “Disaster preparedness” refers to the actions that individuals, families, groups or whole communities take to place them in a better state of readiness for any kind of disaster. Answering these questions help communities prepare for earthquakes, tsunamis and other potential disasters.

Each community is different. Their plans for responding to potential disasters should be tailored to their unique situations. In this lesson, students work with a community professional to explore the skills of community volunteers for disaster preparedness in the case of earthquakes and tsunamis. categories of skills include emergency response (examples: first aid, search and rescue, etc.); physical skills (example: runners to relay messages); technical (example: radio operator); and social (example: care provider for children and elderly). In coming up with a list of skills it is helpful to consider the possible conditions following an earthquake and tsunami—common electricity lines may be disrupted, water and sewer systems may be damaged, communication systems may be disrupted, and more people may be exposed to the elements for hours as they wait to hear an “all clear” sign that the tsunami is over.

Activity Preparation:

1. Invite a law enforcement officer, an emergency responder and/or a local authority for an interview by your students. Inform them that students are exploring community preparedness in the event of an earthquake and tsunami, specifically what skills would benefit the community. Show the guest a copy of the student worksheets to clarify what type of information the students will require.
2. Determine a letter format for student use.

Activity Procedure:

Part 1: Introduction and Interviews

1. Pose the question: What hazards or dangers can a community expect to experience after a strong earthquake and tsunami? Distribute the circulars by Haeussler and Atwood to groups. One person in the group records ideas as one or two people skim each publication and identify ideas. Set a time limit of 5-10 minutes. Call on groups to share ideas.
2. Explain knowing what to expect in a disaster can help people prepare for one, as well as understanding some skills that might be needed to help one another and the community. Explain students

will develop a survey to learn about the skills in the community that would be beneficial in the event of an earthquake and tsunami. Make connections between hazards and volunteering by asking students to briefly consider different skills volunteers should have to be of assistance during an earthquake and tsunami situation.

3. Distribute and review the information on STUDENT WORKSHEET: "Community Skills Interview."
4. Introduce the guest(s) and proceed to the interview for students to gather background information for the investigation.

Part 2: Designing and Conducting the Survey

5. Guide students in conducting the survey. The survey may be designed as a class or groups can design and present possible surveys with the class combining different elements of each. Information may be gathered by interviewing or handwritten completion by community members. Guide students in whom to interview.
6. After surveys are conducted, the class may compile information from the surveys as a teacher led activity or surveys may be divided into groups for a more student driven data compilation then groups compile data for the class.

Part 3: Data Analysis and Presenting Findings

7. Distribute STUDENT WORKSHEET: "Community Skills Data and Findings" for student completion. Students should copy the compiled survey data in the Data section of the worksheet.
8. When students are ready to complete this activity by writing the letter, inform them of the letter format to use.

Extension Idea:

Present findings to the same guests who were interviewed in Part 1 using a Microsoft PowerPoint presentation.

Answers:

STUDENT WORKSHEET: "Community Skills Interview"

Answers will vary.

STUDENT WORKSHEET: "Community Skills Data and Findings"

Answers will vary.

Lesson Information Sources:

Atwater, B. F. (1999), *Surviving a tsunami—Lessons from Chile, Hawaii, and Japan*. Reston, Va: U.S. Dept. of the Interior, U.S. Geological Survey. (<http://pubs.usgs.gov/circ/c1187/>)

Haeussler, P. J. (1994). *Are you prepared for the next big earthquake in Alaska?* Fairbanks, AK: Alaska Earthquake Information Center.

Morris, A., & Larson, H. (2005). *Tsunami: Helping each other*. Minneapolis, Minn: Millbrook Press.

United Parcel Service. (2002). *Preventing a disaster within the disaster: The effective use and management of unaffiliated volunteers*. Washington D.C.: Points of Light Foundation & Volunteer Center National Network.

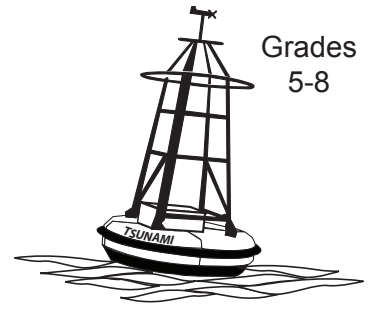
United States. (2007). *Practical information on crisis planning: A GUIDE FOR SCHOOLS AND COMMUNITIES*. Washington, D.C.: U.S. Dept. of Education.
<http://purl.access.gpo.gov/GPO/LPS82742>.

Name: _____

Community Skills Interview

Student Worksheet (page 1 of 2)

Grades
5-8



What skills exist in the local community that could benefit others in the event and aftermath of an earthquake and tsunami?

Background Information

How prepared is your community in the event of a disaster from an earthquake and tsunami? What skills exist in the local community that could benefit others in the event and aftermath of an earthquake and tsunami? "Disaster preparedness" refers to the actions that individuals, families, groups or whole communities take to place them in a better state of readiness for any kind of disaster. Answering these questions helps communities prepare for earthquakes, tsunamis and other potential disasters.

Interview community officials (law enforcement, emergency responder, etc.).

1. Name: _____ Occupation: _____

How do you respond in the event of an earthquake or tsunami?

2. Name: _____ Occupation: _____

How do you respond in the event of an earthquake or tsunami?

3. Name: _____ Occupation: _____

How do you respond in the event of an earthquake or tsunami?

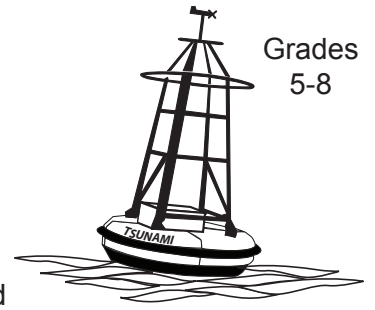
4. Has this community ever participated in emergency response or evacuation drills? If so, please describe.

Name: _____

Community Skills Interview

Student Worksheet (page 2 of 2)

Grades
5-8



5. What skills do you think would be most beneficial in an earthquake and tsunami event and in the aftermath?

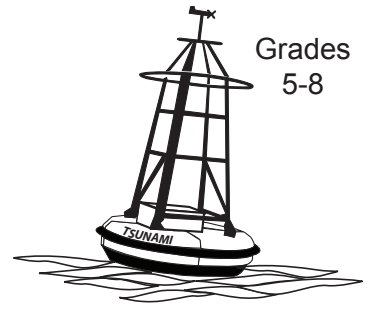
Emergency Response	Physical or Material	Technical	Social

6. Place a star ☆ next to the most urgent skills.

Name: _____

Community Skills Data and Findings

Student Worksheet (page 1 of 2)



Data:

1. How many people did you survey? _____
2. How many people are in your community? _____
3. Copy the compiled data from the survey. Place a star ☆ next to the most urgent skills.

Skills	Number of People

4. Enter the data onto a spreadsheet using Microsoft Excel. Title the first column “skill” and list all the community skills from the survey below the title. Title the second column “number of people” and enter the corresponding numbers for each skill using the survey data.

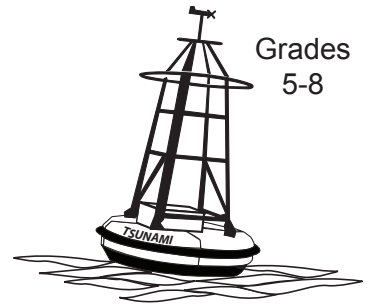
Skill	Number of People

5. Select the chart wizard icon from the menu and follow the steps to make a graph. For this type of data, a column, bar, pie or doughnut graph will be the most appropriate.
6. Print a copy of the chart and attach it to this worksheet.

Name: _____

Community Skills Data and Findings

Student Worksheet (page 2 of 2)



Data Analysis:

1. What is the percentage of people surveyed to the total number of people in the community? _____
2. Which skill is the most available? _____
3. Which skill is the least available? _____
4. Describe the availability of the most urgent skills.

Present Findings:

Use a word processing program like Microsoft Word to write a letter to an authority in your community. In your letter, do the following:

- Describe your survey on community skills and what the results revealed.
- Copy the graph you made in Microsoft Excel and paste it into the word processing program to help describe your data.
- Based on the results, explain any recommendations you have for safety preparedness in your community in the event of an earthquake and tsunami.
- Use a letter format as directed by your teacher.