**Outsmart the Quake!**

**Lesson Four: Community Preparedness[[1]](#footnote-1)**

**Grade Level**: 6-8

**WA State Science Learning Standards**: 6-8 APPD, 6-8 APPE, 6-8 ES2F

**Estimated Time**: 60-80 minutes

**Materials Needed:**

* Coloring supplies
* Lesson 4 - Community Preparedness PowerPoint

**General Overview and Purpose**

This lesson focuses on preparedness actions at the community-level. If a disaster disrupts a community, the students and their neighbors will be the first people in their neighborhood to respond to injured neighbors, fires ignited by shaking and other dangers.[[2]](#footnote-2) [[3]](#footnote-3) As happened in New Orleans after Hurricane Katrina, traditional first responders like firefighters, medics, and police officers may not be able to bring aid to a students’ neighborhood for several days after a disaster.[[4]](#footnote-4) [[5]](#footnote-5) Therefore, it is important for individuals to identify the dangers in their community to better understand and prepare for the challenges they may face. In addition, it is important for individuals to build strong relationships within their community and consider how they will be able to help each other during a disaster.

**Objective**

Students will identify resources and dangers in a community and brainstorm potential strategies to reduce or eliminate the dangers.

**Preliminary Brainstorming**

Use the Lesson 4 - Community Preparedness PowerPoint to introduce the concept of resources and dangers. Ask the students to brainstorm the resources they may find in a neighborhood or community. Do the same for the dangers they may find in a community. Additionally, have the students recall the earthquake dangers they brainstormed and identified in previous lessons. Record the resources and dangers they come up with in two separate columns on the board. Ask the students how the resources they identified can be used to reduce, eliminate, manage or adapt to the dangers they came up with. (See *Appendix D* for discussion tips)

**Community Mapping Activity**

The mapping activity can be delivered in two different ways depending on the needs of your students. The first option encompasses multiple hazards and the second focuses primarily on earthquakes. Both of the mapping activities can be done in pairs or teams. A supplemental homework assignment is also included and is appropriate to assign after delivering either of these options.

***Option 1:***

* Provide the students with a map of a neighborhood. The map in this activity can be as simple as the sample drawing provided in Community Preparedness PowerPoint, or it can be a map of a local city. For older students the latter may be more appropriate because it will allow them to analyze and interpret a formal map.
* Have the students identify the resources and dangers on the map with a different color or shape (e.g. green marker for resources and red marker for dangers).
* Project the map on the projector screen while students are working.
* If the sample map was chosen for the activity, use the Lesson 4 - Community Preparedness PowerPoint to go over the provided answers as a class.
* If a local map was chosen, have each pair or team present their findings to class.

*Adapted from Save the Children, 2007 and National Curriculum Assessment Centre, 2011*

***Option 2:***

* Lead the students on a walking tour around the school grounds.
* Have the students bring along the list of resources and dangers the class brainstormed.
* Instruct them to record the resources and dangers they identify in their notebooks as well as the location where they find them.
* Have the students interview staff members about their skills along the route (skills are an important resource). Provide each student with the worksheet of sample questions and a checklist of the skills they may come across on the tour. (See *Appendix D*)
* When the tour is complete, provide the students with a blank piece of paper and coloring supplies.
* Have the students create a map of the where the resources and dangers they identified are located.
* **Optional**: Provide the students with a floor plan of the school, so they can easily identify where each resource and danger is located.
* Encourage the students to use symbols to describe the resources and dangers on their maps and include a legend.
* When the students are finished with their maps, have the pairs or teams present their products to the class. Allow 2-3 minutes for each presentation.

*Adapted from IFC, 2010*

***Supplemental Homework Assignment:***

* Provide, or require the students to obtain a large blank poster board.
* Instruct the students to map the important buildings (neighbor’s homes, community centers, schools etc.), roads and physical features, in their neighborhood. Examples of physical features include rivers, hills, valleys, lakes, etc.
* Encourage the students to map and refer the neighbors in their immediate vicinity by name.
* Have the students identify and map the resources and dangers in their neighborhood.
* Encourage the students to use symbols to describe the resources and dangers on their maps and include a legend.
* Require the students to list their skills and resources on the map next to their household as well as their neighbor’s skills and resources next to their respective household.
* BONUS: Have the students encourage their parents to hold a neighborhood potluck or gathering where the student can present the map they have created and discuss preparedness in their neighborhood.
	+ If the students elect to take this step, direct them to the Map Your Neighborhood material to guide the discussion on neighborhood preparedness. (See *Appendix D*)

*Adapted from UNICEF and UNISDR, 2004*

**Debriefing**

* Ask the students what they thought about the activity. Did anything surprise them?
* Highlight the important skills the students may have. Refer to *Appendix D* for examples of skills and discussion ideas.
* Have the students list their own skills on their maps. Instruct the students to title this list “our team’s skills.”

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| **Step** | **Estimated Time** | **Description** |
| 1 | 15 minutes | Preliminary brainstorming  |
| 2 | 30 minutes | Community Mapping Activity: Option 1 |
| 50 minutes  | Community Mapping Activity: Option 2 |
| 3 | 15 minutes | Debriefing  |

**Community Mapping Activity Worksheet**

**Directions:** Interview staff members about skills they have that would be useful in a disaster. List the name and responsibility of the staff member who possesses each skill.

**Sample Interview Question:** *What skills do you have that would useful in a disaster?*

Individual can perform first aid.

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Individual can perform Cardiopulmonary Resuscitation (CPR).

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Individual can cook for a large number of people.

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Individual can communicate with others using a radio.

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Individual knows how to suppress a fire.

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Individual is skilled in building maintenance.

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**APPENDIX D**

**Vocabulary**

**Resource**: A person, place, or thing that can be helpful to you.[[6]](#footnote-6)

**Danger**: Anything that has the potential to cause harm or damage.[[7]](#footnote-7)

* The words “risk” or “threat” can be used in place of “danger” in this lesson. Regardless of which word is chosen, it is beneficial to tell the students the words are synonyms.

**Step 1**

**Preliminary Brainstorming**

The direction of the preliminary brainstorming of community dangers and resources will be slightly altered based on the mapping activity option chosen.

***Option 1:***

Guide the resource discussion toward those visible on a map. These resources will be places and physical attributes. However, it is also important to mention not every resource can be located on a map. People, especially your neighbors, are vital resources in emergencies.[[8]](#footnote-8) [[9]](#footnote-9) Likewise, guide the danger brainstorm toward large-scale dangers visible on a map.

Suggested questions to stimulate discussion:

* *What types of resources could you find in a community or neighborhood?*
* *What types of resources does your community or neighborhood have?*
* *What types of threats could disrupt your community or neighborhood?*
* *What types of threats are present in your community?*

Examples of resources: [[10]](#footnote-10) [[11]](#footnote-11)

* Neighbors (first aid, search and rescue, emotional support)
* Community centers (shelter, supply distribution center, storage)
* Schools (shelter, supply distribution center, storage)
* Water sources (drinking water)
* Community gardens (food)
* Grocery stores (food, water, shelter, distribution center, storage)
* Health centers (medical care, shelter, supply distribution center, storage)
* Fire stations (shelter, supply distribution center, storage)
* Generators (temporary electricity for heat, running water, cooking etc.)
* Churches (shelter, supply distribution center, storage)
* Airports (shelter, supply distribution center, storage)
* Stadiums (shelter, supply distribution center, storage)

Examples of dangers: [[12]](#footnote-12) [[13]](#footnote-13)

* Floodable rivers
	+ Check out floodsmart.gov to find out of your community is near or within a designated flood plain.
* Steep slopes where landslides could occur
	+ The worst-case scenario for a landslide is a steep incline, deforested hillside, heavy rainfall, and seismic activity.[[14]](#footnote-14)
* Toxic waste/hazardous material sites
	+ Check out this website to look up if these sites are located in your neighborhood. <http://www.epa.gov/superfund/sites/>
	+ Gas tanks and oil refineries can create hazardous conditions such as fire after an earthquake. [[15]](#footnote-15)
* Seismic regions or zones
	+ Check out this website to look up the seismic threat in your community. <http://earthquake.usgs.gov/earthquakes/states/washington/hazards.php>
	+ This should be included on every map even though it may not be directly visible. As discussed in previous lessons, Western Washington can experience three types of earthquakes.
* Tsunami flood zones
	+ Is your community near the Pacific Coast? Check this website to see if your community is near or within a tsunami flood zone.

[www.dnr.**wa**.gov/Publications/ger\_**tsunami**\_inundation\_**maps**.pdf](http://www.dnr.wa.gov/Publications/ger_tsunami_inundation_maps.pdf)

***Option 2:***

Guide the discussion toward resources found on school grounds. Particularly focus on the skills and school’s staff training useful in a disaster. Similarly, encourage the students to brainstorm dangers visible on school grounds. Remind the students of the earthquake dangers they identified in previous lessons.

Suggested questions to stimulate discussion:

* *What types of resources do we have here at school?*
* *What types of skills would be useful in a disaster? Who has these skills?*
* *What could potentially injure someone at school?*
* *What types of dangers could an earthquake cause at school?*

Examples of resources/skills: [[16]](#footnote-16) [[17]](#footnote-17)

* Water
* Food
* First aid supplies
* Generators (temporary electricity for heat, running water, cooking etc.)
* CPR or first aid skills
* Effective communication skills
* Radio operators (to communicate with other schools or emergency responders if telephone lines are overloaded or disrupted)
* Leadership skills (direct people to safety)
* Those who can prepare basic meals for a large group of people
* Those who can clean up hazardous materials
* Message deliverers
* Those who can look after younger children or the elderly
* Those who can entertain others
* Those who can suppress fire
* Those who maintain school grounds

Examples of earthquake dangers:[[18]](#footnote-18) [[19]](#footnote-19)

* Broken glass - windows, lights, pictures (could fall or pierce a student during or after an earthquake)
* Unsecured furniture (could fall on a student during or after an earthquake)
* Projectors (could fall or a student during or after an earthquake)
* High voltage power lines (could electrocute or fall on a student during or after an earthquake)
* Streetlights (could fall on a student or potentially electrocute during or after an earthquake)
* Utility wires – telephone, cable, electricity (could fall on or electrocute a student during or after an earthquake)
* Water mains running under or near the school (if water mains are damaged, limited access to potable water)
* Gas stations or industries with potentially explosive materials nearby (fires)
* Parapets (could fall on a student during or after an earthquake)
* Speakers (could fall on a student during or after an earthquake)

Strategizing

Instruct the students to brainstorm how the resources the students identified can be used to reduce, eliminate, manage, or adapt to the dangers they identified. This part of the activity is intended to stimulate creativity and innovation. Below are a few examples of ways to use resources to reduce, eliminate, manage, or adapt to dangers.

Examples:

* A school or community center could be used as a shelter during a flood or a tsunami.
* If someone was injured, a student or staff member can provide first aid.
* Individuals with leadership and communication skills can instruct people to safety.
* If the power was out, and water no longer came out of the tap, river or lake water can be filtered and used as a temporary water source.

**Step 3**

**Debriefing**

Ask the students if any aspect of the lesson stands out to them. Did the amount of resources communities have surprise them?

In order to demonstrate students are resources themselves, ask strategic questions about the skills they have.

* Have you ever babysat or watched over younger siblings?
* Do you know how to prepare basic meals like sandwiches?
* Have you ever taken care of a neighbors pet while they were out of town?
* Have you taken a first aid babysitting course?
* Have you ever helped a friend when they got hurt?
* Have you ever told a joke or a funny story to someone who wasn’t feeling well?

Examples of student skills:[[20]](#footnote-20) [[21]](#footnote-21)

* Look after younger children
* Take care of pets
* Prepare basic meals
* Assist in gathering supplies
* Deliver messages
* Identify hazards at home and at school
* Move heavy objects to lower shelves
* Rearrange bedrooms to make them earthquake safe
* Encourage their families to prepare
* Perform basic first aid
* Entertain others during a stressful event (e.g. funny stories, jokes etc.)

Explain to the students their skills will be helpful in an disaster and they too are valuable resources to their communities.

Suggested Dialog:

*“You may not realize it, but the tasks you perform in your everyday life are incredibly useful in disasters. Watching after younger siblings, taking care of pets, and preparing meals are just a few of the contributions you can make to your community during a disaster. Additionally, you have the skills to prepare for earthquakes by moving heavy items to lower shelves, rearranging your bedroom, and encouraging your parents to prepare.”*

**Supplemental Homework Assignment**

In the homework assignment the students will be creating a resource and danger map. A **resource and danger map** is a drawing of a community showing the important buildings and roads along with the community’s resources and potential dangers.[[22]](#footnote-22) [[23]](#footnote-23) See the Lesson 4 - Community Preparedness PowerPoint for examples of resource and danger maps.

**Map Your Neighborhood (MYN) material:**

Link to MYN webpage: <http://www.emd.wa.gov/myn/index.shtml>

On this page you will find an introduction to MYN, tips for how to organize a MYN team, MYN resources, and other useful information regarding neighborhood preparedness.

**Community Resource and Danger Mapping Around the World**

(For facilitator reference)

The organization Save the Children hosts a disaster-training workshop in seven different Vietnamese provinces. Within the program, children and local community members lead resource and threat assessments and develop emergency preparedness and response plans. Child-led assessments have raised awareness to areas in need of mitigation, which have resulted in great improvements to their communities.[[24]](#footnote-24)

In El Salvador, Plan International has facilitated youth participation in disaster risk reduction activities within their communities. One of the activities the students participated in was community resource and threat mapping. As a result of this initiative, 50 schools have devised resource and threat maps and are implementing their own disaster plans to address the threats they identified in their communities.[[25]](#footnote-25)

**Lesson Plan 4 Citations**

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1. *Outsmart the Quake!* lesson plans are intended to support 6th-8th grade student learning about disaster preparedness in conjunction with the Washington State ShakeOut drill. The lessons were developed in 2012 by Western Washington University students Nora Jagielo, Pamela Griswold, Spencer Andrich, Pat Chappelle and Ryan Bainbridge as part of the Disaster Risk Reduction Planning Studio. If you have questions, comments or concerns, please contact Dr. Rebekah Green at Western Washington University’s Resilience Institute. Rebekah.green@wwu.edu. [↑](#footnote-ref-1)
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3. Ripley, A. (2009). *The unthinkable*. New York: Three Rivers Press. (p. xi) [↑](#footnote-ref-3)
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**(NOTE: The sources for 9 and 10 contain similar resources to those mentioned above)** [↑](#footnote-ref-11)
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