

Emergency Backpack and Earthquake Preparedness Actions

Version 1/10/22

Originally developed by Bonnie Magura for CEETEP (Cascadia EarthScope Earthquake and Tsunami Education Program)

OVERVIEW

Following a disaster, learners may need to shelter in place, with at least two weeks worth of critical supplies. If an earthquake occurs while learners are away from home, an emergency backpack or a “go bag” (Figure 1 is essential! In addition, other natural hazards such as flooding and wildfires often require immediate evacuations for safety and provide little time to pack essentials and leave home. Throughout this activity learners explore how an emergency backpack and earthquake preparedness actions are their best insurance for survival during worst-case scenarios.

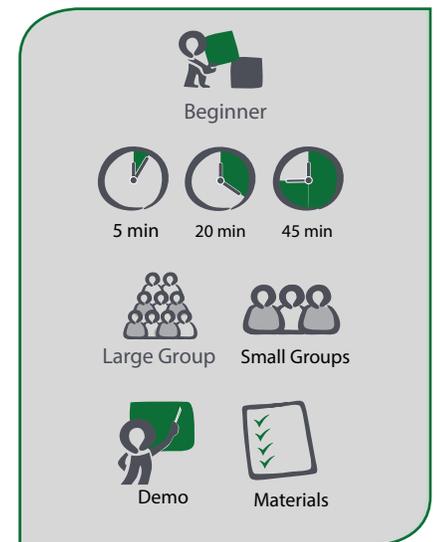
In the 5-minute activity, learners discover situations in which an emergency backpack is essential. In the 20-minute activity, learners create a supply checklist for an emergency backpack. In the 30-45 minute activity, learners discover what to do in different situations when a ShakeAlert-powered alert is received or when they feel ground shaking from an earthquake. Learners then create and share skits to demonstrate what to do in different situations when an earthquake occurs. A vocabulary in Appendix A provides helpful terms. Appendix B gives tips on what not to do during an earthquake.

Why is it important to learn about how to prepare for an earthquake? More than 143 million people are exposed to potential earthquake hazards in the U.S. that could cost thousands of lives and billions of dollars in damage. An understanding of how to prepare before, during, and after an earthquake is fundamental to earthquake hazard preparedness. Another important tool in the earthquake preparedness toolbox is the ShakeAlert® Earthquake Early Warning system for the West Coast of the U.S. which detects significant earthquakes quickly so that alerts can be delivered to people and automated systems.

OBJECTIVES

Learners will be able to:

- Identify items required in an emergency backpack.
- Demonstrate the proper protective response to a ShakeAlert-powered earthquake early warning (EEW) notification in different locations and situations.
- Communicate with a skit an appropriate response to an EEW notification



Time: 5-, 20-, and 30- to 45-minute activities that can be adapted for audience and venue.

Audience: This can be done with novice and experienced geoscience learning groups.



Figure 1: Emergency Preparedness kit

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MATERIALS

Materials for the 5-minute activity:

- Emergency backpack

Materials for the 20-minute activity:

- APPENDIX C—Emergency Supply Checklists from FEMA and the Red Cross
- Paper for learners
- Computer projection system for larger groups

Materials for the 30- to 45-minute activity:

- APPENDIX D—Earthquake Preparedness Actions Posters
- APPENDIX E—Criteria for Preparedness Skits

RELEVANT MEDIA RESOURCES

Videos

Earthquake preparedness actions of Drop, Cover, and Hold On, from [Classroom in Anchorage, Alaska](#)

Animations

[Earthquake! Steps to take when it strikes](#)

RESOURCES

- [FEMA Basic Emergency Supply Kit](#)
- [Earthquake Safety Checklist](#) FEMA B-526 / Nov. 2017
- [When an Earthquake Strikes: Where Will You Be? What Will You Do?](#) Poster
- [FEMA Protect Yourself During an Earthquake](#) Poster
- [Welcome to Earthquake Country!](#)
- [Great ShakeOut Earthquake Drills](#): Every year always the third Thursday of October
- Poster/Infographics: [Drop, Cover, Hold On](#)

INSTRUCTOR PREPARATION

Familiarize yourself with resources found in the Appendices

- APPENDIX A—Vocabulary
- APPENDIX B—What NOT to do during an earthquake
- APPENDIX C —Emergency Supply Checklists from FEMA and the Red Cross
- APPENDIX D —Earthquake Preparedness Actions Posters
- APPENDIX E—Criteria for Preparedness Skits
- APPENDIX F —NGSS Science Standards & 3 Dimensional Learning

ACTIVITIES AND DEMONSTRATIONS

IF YOU HAVE 5 MINUTES



Did You Know?

- Did you know that having an emergency backpack available wherever you are is an essential part of earthquake preparedness?

You should have a backpack stored in an accessible location at home, school, work or in your car in case of emergencies. Having an emergency backpack available to you when you are away from home such as at work, shopping, or traveling is critical (Figure 2). For unforeseen emergency situations, keep a ready-to-go backpack at home for if and when evacuation is needed due to extreme events, such as flooding, wildfires, or a tsunami warning.

After a damaging earthquake occurs, it may be difficult to obtain supplies safely, so also having two weeks worth of your own supplies will help make this easier. The campaign, 2 Weeks Ready, promotes preparedness in the Pacific Northwest (Oregon and Washington). These supplies will also be helpful any other time an emergency strikes, such as a power outage, or needing to shelter in place.

Instructor Preparation

Display a fully prepared emergency backpack and/or duffel bag (Figure 2).

Procedure

1. Explain that earthquakes can happen at any time and time of year. A ShakeAlert-powered earthquake early warning alert may provide valuable seconds that can be used to take a protective action to prevent injury from falling objects. An emergency backpack is critical to have on hand if you need to evacuate after earthquake shaking stops.



Figure 2: Emergency backpack stored in a car.

In the event of an earthquake, the best course of action to prevent injury from falling objects is to Drop, Cover and Hold On, if you are able (Figure 3). This is just one of a series of protective actions you can take. For instance, if you are in a wheelchair, Lock, Cover, and Hold On, in the event of an earthquake.

Show the first 30-45 seconds of the video Earthquake preparedness actions of Drop, Cover, and Hold On, from [Classroom in Anchorage, Alaska](#)

Note: Learners could suggest a different method of protection, not in line with the basics of 'Drop, Cover, and Hold On'. Be prepared to address the issue quickly with facts or suggest that you discuss further following the demonstration. Share some of the examples in Appendix B on What NOT to do during an earthquake. Demonstrate how to correctly drop onto your hands and knees to lower your center of gravity so shaking is less likely to knock you down; cover your head and neck with one hand and take cover under a sturdy object if possible; and hold on to the object so that it does not shift away during shaking or if it is heavy, move with it (Figure 3). Optional: Have learners practice DCHO, adapting these procedures for anyone who cannot take this position.

- When ground shaking stops, look around for hazards, including behind you, before carefully getting up, leaving your drop, cover, and hold on position. Check for injuries, assess damage, help others if you are able. If you are in a building, and you smell gas, see fire or smoke, obvious cracks in walls, arcing or sparking electrical wires, or are given direction to evacuate, grab your emergency backpack if possible as you evacuate. For those who work in a large building, you may need to assist in evacuating the building, and for anyone who uses public transportation, to help during your commute. Additionally, evacuate to high ground if you are within a tsunami hazard zone.

- Show the emergency backpack and engage learners with the following questions and discussion.

Questions for Discussion:

- Why would you want to have an emergency backpack? (Answers vary, but could include: having short-term supplies on hand if you need to evacuate quickly from your current location.)
- Where would it be helpful to have additional emergency backpack(s)? (In your vehicle, at work, at home near an outside door or a garage, etc.)
- Why is having an emergency backpack important to have in a car? (Answers vary. People use their car when they are away from home during the day. Assuming



Figure 3: Image showing how to properly Drop, Cover and Hold On from ShakeAlert.

your home is prepared with additional emergency supplies to shelter in place, having a backpack to walk home will be necessary since roads will most likely be closed. You need one kit per individual who will ride in the vehicle, and/or combine kits into one larger duffel for each vehicle.)

Challenge learners to identify different categories of supplies that would be in the backpack. Start removing supplies and have them identify the category and why they are important.

- **Water**—One gallon per person per day is recommended. However, most emergency backpacks contain far less. Plan to pack as much as will fit and supplement with a filtration device and purification tablets if you find water. Note: An American Red Cross 72-hour, 2-person supply kit has 12–4oz. water pouches. That is 6 cups of water for 2 people to last 3 days!
- **Food**—based on your size, age, activity level, and climate, a minimum of 1200-1500 calories per day of non-perishable food.
- **Shelter**—rain poncho, tent, and rope
- **Warmth**—depending on climate, extra clothing, emergency blanket (mylar), chemical hand warmers
- **Sanitation and Hygiene**—toilet paper, tissues, disinfecting wipes, sanitary supplies, toothbrush and toothpaste, soap, moist towelettes
- **Medical & Personal Care**—extra medications, first aid kit and booklet, spare eyeglasses and contact lens supplies

- **Light and Communication**—flashlight, radio, mobile phone & charger, bright stick(s), whistle, list of valuable contact information, health and insurance cards, phone numbers, and radio to receive emergency information (i.e., NOAA weather radio)
- **Tools and Supplies**—multitool, compass, fire starter, matches, safety goggles, work gloves, paracord bracelet or nylon rope
- **Other Items**—supplies for infants, pet(s), cash in small bills, a deck of cards and other small comfort items

IF YOU HAVE 20-MINUTES



Did You Know?

- Did you know that having an emergency backpack could save your life?

Personal emergency supplies are critical for survival before organized emergency response can provide needed assistance. People want to be self-reliant; however, when you are away from home, options become limited. An emergency backpack (Figure 4) can provide assurance that you can survive when power and water are lost, when you need to walk home for miles, evacuate the area due to hazards, or run to high ground from a tsunami while visiting the beach. A full emergency backpack can be built over time; creative shopping at discount stores can save money.

Optional: Demonstrate and practice the earthquake preparedness actions of Drop, Cover, and Hold On.

Instructor Preparation

- A fully prepared emergency backpack and or duffel bag on display
- Computer with projection system for larger groups
- List of emergency supply categories listed at right, written on an easel, white board, or poster board
- List of emergency backpack supplies to project (Appendix C)

Procedure

1. Before we can evacuate with our emergency backpack, we first must survive the earthquake! Earthquake early warning can provide valuable seconds to take protective actions to prevent injury from falling objects. The best course of action to prevent injury is to drop, cover and hold on. Following an earthquake, and after ground shaking stops, leave your drop, cover, and hold on



Figure 4: Personalized emergency backpack showing water filtration bottles, enhanced first aid kit, down blanket, and wool socks.

position. Check for injuries, assess damage, help others if you are able, and evacuate with your emergency backpack.

2. The challenge is to equip this emergency backpack with essential survival supplies for 72 hours. What should go into this backpack?
3. Assign a category of supplies to each small group of learners. Ask learners to brainstorm a list and how much of critical supplies for their category (Figure 5). Remind learners that all categories of supplies need to fit into the backpack. Consider the size of the backpack and the ability of someone to carry it once it is filled. (10 minutes).

Emergency supply categories:

- Water including ways you could filter and purify the water
- Food (what kinds, nutritional value, & amount needed)
- Shelter
- Warmth
- Sanitation and hygiene
- Medical & personal Care
- Communication
- Tools and Supplies
- Other Items

4. Each small group shares their list with the full group. Ask a recorder to list items on a white board, easel, etc. Discuss the lists making additions to create a final combined list of supplies for the backpack. Use a computer projection system to show a completed list and check off supplies as each item is listed. Add to the list as needed.

Questions for Discussion:

- Will all the items listed from the groups fit in the backpack? (*Answers vary; typically there are too many items to fit!*)
 - What are some items that were listed, but are not essential? (*Answers vary, but might include cookies, chips, electronic toys.*)
 - What are some items that were missed? (*Answers vary. Use the supply list in Appendix C as a guide.*)
5. Open the backpack on display and show some of the items (Figure 6). Conclude by asking: What would you say to a friend, neighbor, or family member to encourage them to get emergency backpacks? (*Answers vary, but may include: saving your life away from home, having supplies needed in an emergency, being self-sufficient and not relying on others, a measure of self-assurance you can survive more comfortably.*)

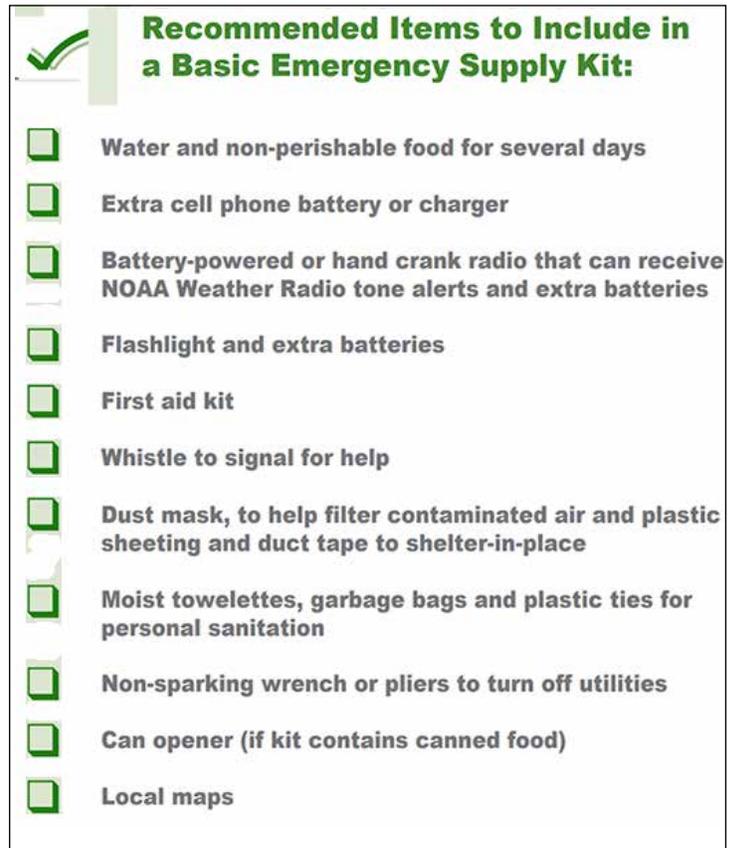


Figure 5: Emergency supply check list from FEMA. See Appendix C for additional items.

IF YOU HAVE 45 MINUTES

Did You Know?



- Did you know that you can save your own life--and maybe others' too--by taking the right actions during an earthquake?

Earthquakes can happen at any time, and anywhere. Different situations can affect your ability to take the most effective protective action to Drop, Cover and Hold On (Figure 7). Knowing what to do during common situations can help you avoid serious injury. Helping others to follow your example can help keep others safe. ShakeAlert-powered earthquake early warning alerts can provide valuable seconds to take the most safe and effective protective actions needed before earthquake shaking arrives.



Figure 6 (right): Emergency duffel style Go Kit

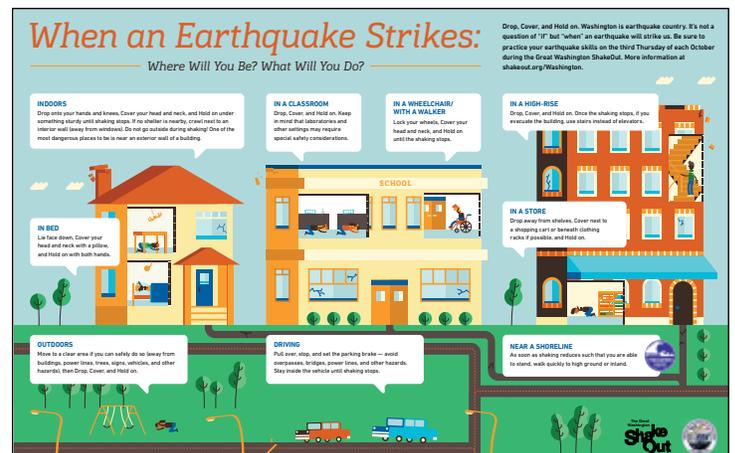


Figure 7: Earthquake Preparedness Actions poster (Appendix D).

Instructor Preparation

- Print enough copies of each Earthquake Preparedness poster for each group of learners (Appendix D):
 - When an Earthquake Strikes: Where Will You Be? What Will You Do?
 - FEMA Protect Yourself During an Earthquake
- Print 10 copies of Criteria for Preparedness Skits, one for each group of learners (Appendix E).
- Computer projection system

Procedure

1. Introduce the activity with the “Did You Know?” question and background provided above.
2. Using the computer projection system, show the two Earthquake Preparedness Protective Actions posters and discuss each scenario. Appendix D
3. Explain that learners will work in teams to create a short, 3–5-minute skit that will convey the message of a preferred preparedness action in a particular situation. The skits explore typical situations you might find yourself in.
4. Using the computer projection system, review the Criteria for Preparedness Skits. They will have 15 minutes to prepare their short skit, then perform the skits for the whole group.
5. Create up to 10 small groups of learners and assign one of the following scenarios found on the two resource posters to each group.
 - a) Indoors—no table or desk
 - b) In a classroom (computer lab, chemistry lab, cafeteria, gymnasium)
 - c) In a wheelchair or with a walker
 - d) In a high rise, office, or apartment building
 - e) In bed
 - f) In a store
 - g) Outdoors
 - h) Driving or riding in a car
 - i) Near a shoreline or beneath a dam
 - j) In a stadium or theater

6. Distribute two (2) Earthquake Preparedness Actions posters (Appendix D) and a Criteria for Preparedness Skits (Appendix E) to each group. At the beginning of Appendix E, each scenario includes an example to provide more context for learners.
7. Create a space for the skits that can be seen by the whole group. Ask for volunteers to start their skit and mix the order of presentations.
8. After each skit, ask the audience to identify some of the specific challenges and hazards for the presented scenario. Ask learners, “*What objects might fall or be thrown at you, that you should secure in place before a real earthquake?*”
9. Some will be obvious, but others may need clarification. Fill in any missing facts.
10. Conclude the activity by asking what was the most surprising or interesting fact they learned from the skits? thrown at you, that you should secure in place before a real earthquake?
9. Some will be obvious, but others may need clarification. Fill in any missing facts.
10. Conclude the activity by asking what was the most surprising or interesting fact they learned from the skits?

The value of play acting

Skits provide an opportunity to work on developing muscle memory of what to do when they receive a ShakeAlert-powered message or they feel shaking from an earthquake, just like an athlete or a musician rehearses before a competition.



APPENDIX A—Vocabulary

2 Weeks Ready—is a public service campaign in the Pacific Northwest (Oregon and Washington) designed to educate and empower the American people to prepare for, respond to and mitigate emergencies. The goal of the campaign is to promote preparedness through public involvement.

Mandatory evacuation order—a civil order from your city or county meant to proactively save lives during a natural disaster or emergency. During a mandatory evacuation, first responders go to each neighborhood to help residents get to safety.

Shelter in Place—in some situations, such as poor air quality or extreme temperatures, shelter in place may be the recommended or even mandated protective action. These situations can sometimes arise with very little warning, which is another reason to have supplies available at home, and a way to receive information.

ShakeAlert®—an earthquake early warning (EEW) system managed and operated by the US Geological Survey that detects significant earthquakes quickly so that alerts can reach as many people as possible before shaking arrives. ShakeAlert is not earthquake prediction, rather a ShakeAlert-powered alert indicates that an earthquake has begun, and shaking is imminent.

ShakeAlert-powered alert—alerts sent to institutional users for automated actions and the general public through a variety of different distribution methods; this includes messages via cell phones, television and radio. These alerts may give people time to take protective actions like “drop, cover and hold on,” to prevent injuries caused by falling debris.

APPENDIX B—What NOT to do during an earthquake

What rescuers and experts DO NOT recommend you do during an earthquake

Based on years of research about how people are injured or killed during earthquakes, and the experiences of U.S. and international search and rescue teams, these three actions are not recommended to protect yourself during earthquakes:

DO NOT run outside or to other rooms during shaking: The area near the exterior walls of a building is the most dangerous place to be. Windows, facades, and architectural details are often the first parts of the building to collapse. To stay away from this danger zone, stay inside if you are inside and outside if you are outside. Also, shaking can be so strong that you will not be able to move far without falling down, and objects may fall or be thrown at you that you do not expect. Injuries can be avoided if you drop to the ground before the earthquake drops you.

DO NOT stand in a doorway: An enduring earthquake image of California is a collapsed adobe home with the door frame as the only standing part. From this came our belief that a doorway is the safest place to be during an earthquake. True- if you live in an old, unreinforced adobe house or some older wood-frame houses. In modern houses, doorways are no stronger than any other part of the house, and the doorway does not protect you from the most likely source of injury- falling or flying objects. You also may not be able to brace yourself in the door during strong shaking. You are safer under a table.

DO NOT get in the “triangle of life”: In recent years, an e-mail has been circulating which describes an alternative to the long-established “Drop, Cover, and Hold On” advice. The so-called “triangle of life” and some of the other actions recommended in the e-mail are potentially life threatening, and the credibility of the source of these recommendations has been broadly questioned.

The “triangle of life” advice (always get next to a table rather than underneath it) is based on several wrong assumptions:

- buildings always collapse in earthquakes (wrong—especially in developed nations, and flat “pancake” collapse is rare anywhere);
- when buildings collapse they always crush all furniture inside (wrong—people DO survive under furniture or other shelters);
- people can always anticipate how their building might collapse and anticipate the location of survivable void spaces (wrong- the direction of shaking and unique structural aspects of the building make this nearly impossible); and
- during strong shaking people can move to a desired location (wrong- strong shaking can make moving very difficult and dangerous).

Some other recommendations in the “triangle of life” e-mail are also based on wrong assumptions and very hazardous. For example, the recommendation to get out of your car during an earthquake and lie down next to it assumes that there is always an elevated freeway above you that will fall and crush your car. Of course, there are very few elevated freeways, and lying next to your car is very dangerous because the car can move and crush you, and other drivers may not see you on the ground!

Source: [What Not to do During an Earthquake](#), from the University of Washington

APPENDIX C—Emergency Supply Checklists from FEMA and the Red Cross

FEMA Emergency Supply Kit



Additional Items to Consider Adding to an Emergency Supply Kit:

- Prescription medications and glasses
- Infant formula and diapers
- Pet food, water and supplies for your pet
- Important family documents such as copies of insurance policies, identification and bank account records in a portable waterproof container
- Cash and change
- Emergency reference material such as a first aid book or information from www.ready.gov
- Sleeping bag or warm blanket for each person. Consider additional bedding if you live in a cold-weather climate.
- Complete change of clothing including a long sleeved shirt, long pants and sturdy shoes. Consider additional clothing if you live in a cold-weather climate.
- Fire Extinguisher
- Matches in a waterproof container
- Feminine supplies, personal hygiene items and hand sanitizer
- Mess kits, Paper cups, plates and disposable utensils, paper towels
- Paper and pencil
- Books, games, puzzles or other activities for children



Ready
Prepare. Plan. Stay Informed.



Emergency Supply List



FEMA
www.ready.gov



Recommended Items to Include in a Basic Emergency Supply Kit:

- Water and non-perishable food for several days
- Extra cell phone battery or charger
- Battery-powered or hand crank radio that can receive NOAA Weather Radio tone alerts and extra batteries
- Flashlight and extra batteries
- First aid kit
- Whistle to signal for help
- Dust mask, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Non-sparking wrench or pliers to turn off utilities
- Can opener (if kit contains canned food)
- Local maps

FEMA's Ready Campaign educates and empowers Americans to take some simple steps to prepare for and respond to potential emergencies, including those from natural hazards and man-made disasters. Ready asks individuals to do three key things: get an emergency supply kit, make a family emergency plan, and be informed about the different types of emergencies that could occur and appropriate responses. Everyone should have some basic supplies on hand in order to survive several days if an emergency occurs. This list of emergency supply kit items is only a starting point. It is important that individuals review this list and consider the unique needs of their family, including pets, for items to include. Individuals should also consider having at least two emergency supply kits, one full kit at home and smaller portable kits in their workplace, vehicle or other places they spend time.



Federal Emergency Management Agency
Washington, DC 20472

American Red Cross Emergency Preparedness Kit

Being prepared means being equipped with the proper supplies you may need in the event of an emergency or disaster. Keep your supplies in an easy-to-carry emergency preparedness kit that you can use at home or take with you in case you must evacuate. At a minimum, you should have the basic supplies listed below:

- Water: one gallon per person, per day (3-day supply for evacuation, 2-week supply for home)
- Food: non-perishable, easy-to-prepare items (3-day supply for evacuation, 2-week supply for home).
- Flashlight
- Battery-powered or hand-crank radio
- Extra batteries
- First aid kit
- Medications (7-day supply) and medical items
- Multi-purpose tool
- Sanitation and personal hygiene items
- Copies of personal documents (medication list and pertinent medical information, proof of address, deed/lease to home, passports, birth certificates, insurance policies)
- Cell phone with chargers
- Family and emergency contact information
- Extra cash
- Blankets
- Map(s) of the area

Consider the needs of all family members and add supplies to your kit:

- Medical supplies (hearing aids with extra batteries, glasses, contact lenses, syringes, etc.)
- Baby supplies (bottles, formula, baby food, diapers)
- Games and activities for children
- Pet supplies (collar, leash, ID, food, carrier, bowl)
- Extra set of car keys and house keys
- Two-way radios
- Manual can opener



APPENDIX D—Earthquake Preparedness Actions Posters

- Poster: [When an Earthquake Strikes: Where Will You Be? What Will You Do?](#)

When an Earthquake Strikes:

Where Will You Be? What Will You Do?

INDOORS
Drop onto your hands and knees. Cover your head and neck, and Hold on under something sturdy until shaking stops. If no shelter is nearby, crawl next to an interior wall (away from windows). Do not go outside during shaking! One of the most dangerous places to be is near an exterior wall of a building.

IN A CLASSROOM
Drop, Cover, and Hold on. Keep in mind that laboratories and other settings may require special safety considerations.

IN A WHEELCHAIR/ WITH A WALKER
Lock your wheels. Cover your head and neck, and Hold on until the shaking stops.

IN A HIGH-RISE
Drop, Cover, and Hold on. Once the shaking stops, if you evacuate the building, use stairs instead of elevators.

IN A STORE
Drop away from shelves. Cover next to a shopping cart or beneath clothing racks if possible, and Hold on.

IN BED
Lie face down. Cover your head and neck with a pillow, and Hold on with both hands.

OUTDOORS
Move to a clear area if you can safely do so (away from buildings, power lines, trees, signs, vehicles, and other hazards), then Drop, Cover, and Hold on.

DRIVING
Pull over, stop, and set the parking brake — avoid overpasses, bridges, power lines, and other hazards. Stay inside the vehicle until shaking stops.

NEAR A SHORELINE
As soon as shaking reduces such that you are able to stand, walk quickly to high ground or inland.

Drop, Cover, and Hold on. Washington is earthquake country. It's not a question of "if" but "when" an earthquake will strike us. Be sure to practice your earthquake skills on the third Thursday of each October during the Great Washington ShakeOut. More information at shakeout.org/Washington.

The Great Washington **Shake Out**

Poster: [FEMA Protect Yourself During an Earthquake](#)

Protect Yourself During Earthquakes

FEMA P-1072

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Why are these protective actions recommended?
www.EarthquakeCountry.org/step5

Practice with millions worldwide:
www.ShakeOut.org

Learn how to reduce injury and damage:
www.FEMA.gov/earthquake

APPENDIX E Criteria for Preparedness Skits

Preparedness situations:

- a) Indoors—no table or desk
- b) In a classroom (computer lab, chemistry lab, cafeteria, gymnasium)
- c) In a wheelchair or with a walker
- d) In a high rise, apartment building or office
- e) In bed
- f) In a store
- g) Outdoors
- h) Driving
- i) Near a shoreline or beneath a dam
- j) In a stadium or theater

Skit Criteria:

About your skit

- The skit has a story line (beginning, middle and end).
- Time is limited to 3–5 minutes.
- Demonstrate facts that relate to the situation and show safe procedures rather than unsafe procedures.
- Each situation concludes with taking their emergency backpack and evacuating. Think about where the closest backpack would be.

Presentation criteria:

- Everyone in the team participates.
- Rehearse so that the presentation flows smoothly.
- Project your voice and face the audience.
- Use optional props to illustrate the situation.

Introduce skit:

- Introduce the actors and who they represent.
- Introduce the setting/situation.

See next page for scenarios and examples.

Scenarios and example situation:

A) Indoors—no table or desk

- You're with a group of friends hanging out at home playing video games when you suddenly feel the earth start shaking. You look around but see that the room you're in doesn't have any tables or desks. What do you do?

B) In a classroom (computer lab, chemistry lab, cafeteria, gymnasium)

- A teacher and students are in the math classroom. In the middle of the lesson, they hear a ShakeAlert-powered alert coming through the instructor's phone. How do you all respond?

C) In a wheelchair or with a walker

- You're at home with your family eating dinner. Your grandma, who uses a walker, is with you. So is your little brother, who uses a wheelchair. During dinner, your phone vibrates and you look down and see a ShakeAlert-powered alert, which says, "Earthquake detected! Drop, Cover, and Hold On!" You don't feel the ground shaking. What do you do?

D) In a high rise, office, or apartment building

- You're visiting a friend who lives on the 8th floor of an apartment building. Suddenly your phone vibrates and you look down and see a ShakeAlert-powered alert, which says, "Earthquake detected! Drop, Cover, and Hold On!" What do you do?

E) In bed

- You are woken up to violent shaking of your bed and your bedroom is rattling. What do you do?

F) In a store

- You're in a store looking at the latest electronics on display. Suddenly your phone vibrates and you look down and see a ShakeAlert-powered alert, which says, "Earthquake detected! Drop, Cover, and Hold On!" What do you do?

G) Outdoors

- You and your friends are walking through a park. Suddenly your phone vibrates and you look down and see a ShakeAlert-powered alert, which says, "Earthquake detected! Drop, Cover, and Hold On!" What do you do?

H) Driving or riding in a car

- You are headed to a doctor's appointment. You hear the ShakeAlert-powered alert, which says, "Earthquake! <beep beep beep beep beep>!" What do you do?

I) Near a shoreline or beneath a dam

- You are camping with friends in a park near the shoreline or you're fishing in a stream below a reservoir's dam. You're out of cell phone range. You feel the ground violently shake. What do you do?

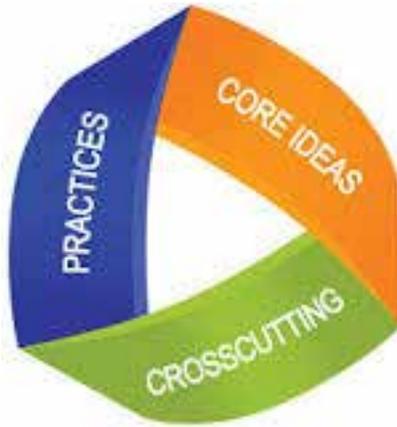
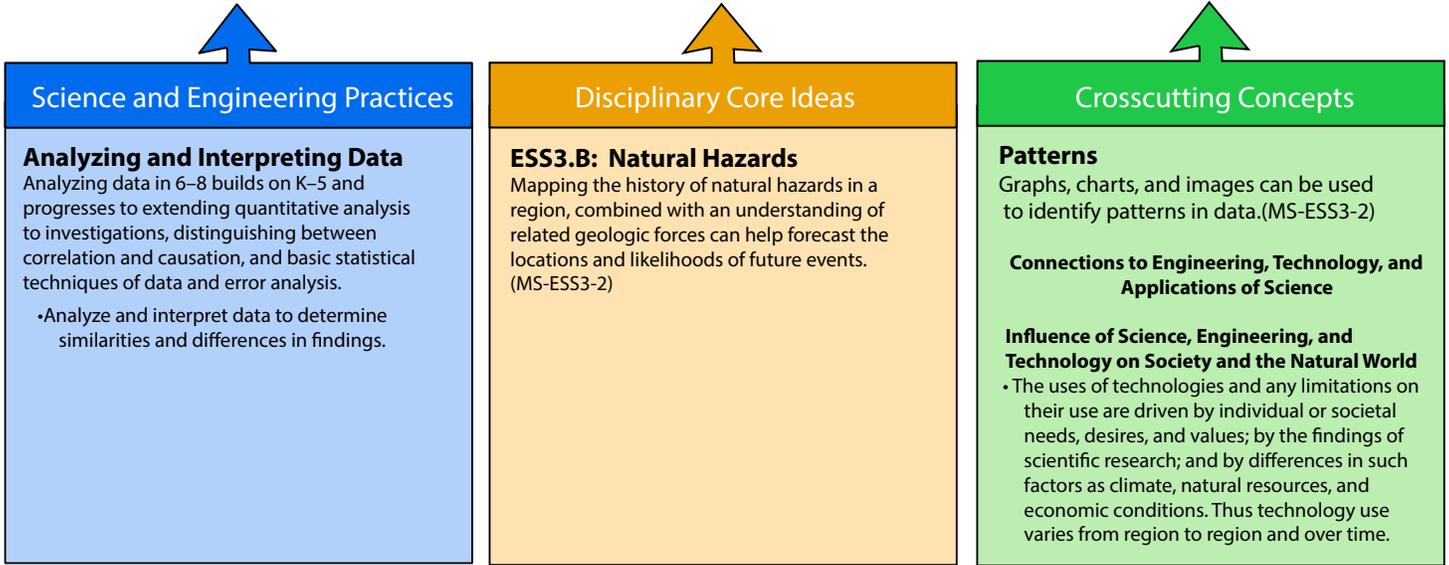
J) In a stadium or theater

- Your family is at a ball game in a stadium or watching a movie at the theater. Suddenly your phone vibrates and you look down and see a ShakeAlert-powered alert, which says, "Earthquake detected! Drop, Cover, and Hold On!" What do you do?

APPENDIX F—NGSS Science Standards and 3 Dimensional Learning

Earth and Human Activity

MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.



NGSS Science and Engineering Standards

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