

Earthquake: Duck, Cover & Hold

We've all known the frustration that comes from trying to follow procedures that are poorly written. Unclear writing can lead to confusion and frustration. The following tips on earthquake preparedness are meant to be easily grasped and understood. Do they seem clear and logical to you?

FOCUS: FUNCTIONAL DOCUMENT

The following functional document explains what to do in the event of an earthquake.

- To make the information clear and accessible, a variety of text features are used, such as boldface headers; different kinds of type; bulleted lists; and checklists.
- Information is presented in the logical sequence most appropriate for understanding, such as **step-by-step** or **point-by-point sequence**.
- International **symbols** accompany the text to show clearly what to do.

TERMS TO KNOW

International symbols—symbols used in directions that can be recognized worldwide.

Logo—a graphic form of a name or phrase.

Logical sequence—a sequence that makes sense.

Chronological sequence—a sequence in time order.

Point-by-point sequence—a sequence that states each point in no particular order.

Step-by-step sequence—a sequence that tells what to do first, second, third, and so on.



Reading Skills

Understand elements of functional documents.

EARTHQUAKE: Duck, Cover & Hold

No matter where you are, know how to protect yourself and your family during an earthquake. Practice taking cover as if there were an earthquake and learn the safest places in your home and work. Practice getting out of your home and check to see if the planned exits are clear and if they can become blocked in an earthquake. Practice turning off your electricity and water. Know how to turn off the gas, but do not practice this step. In the event of an earthquake, once you turn off your gas, only your utility company should turn it back on, for safety reasons.

10 TIPS

- When in a HIGH-RISE BUILDING, move against an interior wall if you are not near a desk or table. Protect your head and neck with your arms. Do not use the elevators.
- When OUTDOORS, move to a clear area away from trees, signs, buildings, or downed electrical wires and poles.
- When on a SIDEWALK NEAR BUILDINGS, duck into a doorway to protect yourself from falling bricks, glass, plaster and other debris.
- When DRIVING, pull over to the side of the road and stop. Avoid overpasses and power lines. Stay inside your vehicle until the shaking stops.
- When in a CROWDED STORE OR OTHER PUBLIC PLACE, move away from display shelves containing objects that could fall. Do not rush for the exit.
- When in a STADIUM OR THEATER, stay in your seat, get below the level of the back seat and cover your head and neck with your arms.

From "Earthquake Preparedness Tips" from California Governor's Office of Emergency Services website, accessed February 12, 2002 at http://www.oes.ca.gov/CEPM2002.nsf/htmlmedia/body_directory.html. Reprinted by permission of the California Governor's Office of Emergency Services.

TEXT FEATURES

Locate and underline the subtitle of this article, which tells what to do during an earthquake. On page 392, circle where the information is repeated.

PURPOSE

What is the purpose of the first block of italic text?

SEQUENCE

The bulleted tips are in a **point-by-point sequence**. What kind of information is highlighted by the words in capital, or uppercase, letters?

Duck



DUCK or DROP down on the floor.

SEQUENCE

International symbols illustrate what to do in an earthquake. What kind of sequence do the symbols follow?

PURPOSE

Pause at line 33. Underline why it is helpful to know what causes earthquakes.

SEQUENCE

Number the paragraphs within lines 31–63. Why would it be confusing if paragraph 2 came *after* paragraph 3 instead of *before* it?

Cover



Take COVER under a sturdy desk, table or other furniture. If that is not possible, seek cover against an interior wall and protect your head and neck with your arms. Avoid danger spots near windows, hanging objects, mirrors or tall furniture.

Hold



If you take cover under a sturdy piece of furniture, HOLD on to it and be prepared to move with it. Hold the position until the ground stops shaking and it is safe to move.

30 EVER WONDER WHAT CAUSES EARTHQUAKES?

It's probably not something you think about first when earthquakes are mentioned, but knowing what causes these shakers can help you understand your surroundings.

The earth is divided into three main layers—a hard outer crust, a soft middle layer and a center core. The outer crust is broken into massive, irregular pieces called “plates.” These plates have been moving very slowly for billions of years, driven by energy forces deep within the earth. It is this movement that has shaped the physical features of the earth—mountains, valleys, plains and plateaus. Earthquakes occur when these moving plates grind and scrape against each other.

40

In California, two of these plates meet: the Pacific Plate and the North American Plate. The Pacific Plate covers most of the Pacific Ocean floor and the California coastline. The North American Plate stretches across the North American continent and parts of the Atlantic Ocean. The primary boundary between them is the San Andreas fault. It is more than 650 miles long and extends 10 miles deep. Many smaller faults, such as the Hayward fault in the north and the San Jacinto fault in the south, branch from the San Andreas fault. Experts suspect there are many other faults that haven't been discovered yet.

50

The Pacific Plate grinds northwestward past the North American Plate at a rate of about two inches per year. Parts of the San Andreas fault system adapt to this movement by a constant “creep” resulting in frequent, but moderate, earth tremors. In other areas, movement is not constant and strain can build up for hundreds of years, resulting in strong earthquakes when it’s released.

60 Unlike other natural disasters, there is no warning for earthquakes. One could hit today, tomorrow, or next week. Future earthquakes are a serious threat to Californians, who could face loss of life, injury and property damage. Consider the sizable damage caused by past quakes, shown in the box below.

SOME SIGNIFICANT CALIFORNIA EARTHQUAKES

Northridge, M6.7—January 17, 1994

57 deaths—more than 11,000 injuries—\$40+ billion in damage

Landers, M7.3/**Big Bear**, M6.7—June 28, 1992

1 death—\$93 million in damage

Humboldt County, M6.9—April 25, 1992

\$60 million in damage

Sierra Madre, M5.8—June 28, 1991

1 death—over 30 injuries—\$33.5 million in damage

Loma Prieta, M7.1—October 17, 1989

63 deaths—3,757 injuries, \$5.9 billion in damage

Whittier-Narrows, M5.9—October 1, 1987

Aftershock, M5.3—October 4, 1987

8 deaths—200 injuries—\$358 million in damage

Kern County, M7.7—July 21, 1952

12 deaths—18 injuries—\$50 million in damage

San Francisco, M8.3—April 18, 1906

700–800 deaths—\$400 million in damage

*M = Magnitude on the Richter scale.

FORMAT

Pause at line 63. What does the **cross-reference** tell you?

SEQUENCE

What kind of sequence is the boxed information about earthquakes presented in?

IDENTIFY

According to the boxed information, what earthquake was the worst in terms of fatalities?

EMERGENCY SUPPLIES CHECKLIST

Stocking up now on emergency supplies can add to your safety and comfort during and after an earthquake. Store enough supplies for at least 72 hours.

PURPOSE

Re-read the introductory text under the top heading. Underline why you should stock up on emergency supplies.

SEQUENCE

Scan the items in the Essentials checklist. Is the order of items significant? Explain.

TEXT FEATURES

Notice the **logo**, which is at the end of this page. What do you think is its purpose?

ESSENTIALS

- Water – 1 gallon per person per day (a week’s supply of water is preferable)
- Water purification kit
- First aid kit, freshly stocked
- First aid book
- Food
- Can opener (non-electric)
- Blankets or sleeping bags
- Portable radio, flashlight and spare batteries
- Essential medications
- Extra pair of eyeglasses
- Extra pair of house and car keys
- Fire extinguisher—A-B-C type
- Food, water and restraint (leash or carrier) for pets
- Cash and change

SANITATION SUPPLIES

- Large plastic trash bags for waste; tarps and rain ponchos
- Large trash cans
- Bar soap and liquid detergent
- Shampoo
- Toothpaste and toothbrushes
- Feminine hygiene supplies
- Toilet paper
- Household bleach

SAFETY AND COMFORT

- Sturdy shoes
- Heavy gloves for clearing debris
- Candles and matches
- Light sticks
- Change of clothing
- Knife or razor blades
- Garden hose for siphoning and firefighting
- Tent
- Communication kit: paper, pens, stamps

COOKING

- Plastic knives, forks, spoons
- Paper plates and cups
- Paper towels
- Heavy-duty aluminum foil
- Camping stove for outdoor cooking (caution: before using fire to cook, make sure there are no gas leaks; never use charcoal indoors)



Test Practice

Earthquake: Duck, Cover & Hold

Complete the sample test item below. The box at the right explains why three of these choices are not correct.

Sample Test Item	Explanation of the Correct Answer
<p>The international symbols within the illustrations—</p> <p>A show what to do in an earthquake</p> <p>B show how much damage earthquakes do</p> <p>C explain what causes earthquakes</p> <p>D indicate the different supplies you will need</p>	<p>The correct answer is <i>A</i>.</p> <p>The symbols show how to duck, cover, and hold during an earthquake. No symbols are used to illustrate earthquake damage, (<i>B</i>), the cause of earthquakes, (<i>C</i>), or various supplies, (<i>D</i>).</p>

DIRECTIONS: Circle the letter of the best response to each item.

- Which of the following is presented in a **step-by-step sequence**?
 - the list of sanitation supplies
 - the list of important earthquakes
 - the process of duck, cover, and hold
 - the tips on what to do in different places
- “Ever Wonder What Causes Earthquakes?” explains how—
 - the movement of plates can create earthquakes
 - San Francisco was destroyed in an earthquake
 - scientists measure earthquakes
 - we know an earthquake is coming
- “Some Significant California Earthquakes” follows—
 - a point-by-point sequence
 - a step-by-step sequence
 - a chronological order
 - no particular order
- The “Essentials” checklist is organized by—
 - order of importance
 - chronological order
 - order of easiest to find
 - alphabetical order

SKILLS FOCUS

Reading Skills
Analyze and evaluate elements of functional documents.

Before You Read

Earthquake: Duck, Cover & Hold

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- International symbols accompany the text to show clearly what to do.

TERMS TO KNOW

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Reading Skills Focus
Understand elements of functional documents.

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EARTHQUAKE: Duck, Cover & Hold

No matter where you are, know how to protect yourself and your family during an earthquake. Practice taking cover as if there were an earthquake and learn the safest places in your home and work. Practice getting out of your home and check to see if the planned exits are clear and if they can become blocked in an earthquake. Practice turning off your electricity and water. Know how to turn off the gas, but do not practice this step. In the event of an earthquake, once you turn off your gas, only your utility company should turn it back on, for safety reasons.

TIPS

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TEXT FEATURES

Locate and underline the subtitle of this article, which tells what to do during an earthquake. On page 392, circle where the information is repeated.

PURPOSE


What is the purpose of the first block of italic text?

The purpose is to encourage you to practice ways to protect yourself in an earthquake.

SEQUENCE


The bulleted tips are in a point-by-point sequence. What kind of information is highlighted by the words in capital, or uppercase, letters?

The uppercase words call out specific locations or situations for which specialized instructions are given.



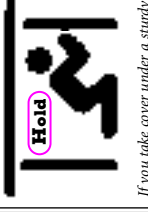
Duck

DUCK or DROP down on the floor.



Cover

Take COVER under a sturdy desk, table or other furniture. If that is not possible, seek cover against an interior wall and protect your head and neck with your arms. Avoid danger spots near windows, hanging objects, mirrors or tall furniture.



Hold

If you take cover under a sturdy piece of furniture, HOLD on to it and be prepared to move with it. Hold the position until the ground stops shaking and it is safe to move.

SEQUENCE

International symbols illustrate what to do in an earthquake. What kind of sequence do the symbols follow?

They follow a step-by-step sequence—what to do first, second, third, etc.

PURPOSE

Pause at line 33. Underline why it is helpful to know what causes earthquakes.

SEQUENCE

Number the paragraphs within lines 31–63. Why would it be confusing if paragraph 2 came after paragraph 3 instead of before it?

Paragraph 2 tells what plates are—information you need before learning about where they meet.


EVER WONDER WHAT CAUSES EARTHQUAKES?

1. It's probably not something you think about first when earthquakes are mentioned, but knowing what causes these shakers can help you understand your surroundings.

2. The earth is divided into three main layers—a hard outer crust, a soft middle layer and a center core. The outer crust is broken into massive, irregular pieces called "plates." These plates have been moving very slowly for billions of years, driven by energy forces deep within the earth. It is this movement that has shaped the physical features of the earth—mountains, valleys, plains and plateaus. Earthquakes occur when these moving plates grind and scrape against each other.

3. In California, two of these plates meet: the Pacific Plate and the North American Plate. The Pacific Plate covers most of the Pacific Ocean floor and the California coastline. The North American Plate stretches across the North American continent and parts of the Atlantic Ocean. The primary boundary between them is the San Andreas fault. It is more than 650 miles long and extends 10 miles deep. Many smaller faults, such as the Hayward fault in the north and the San Jacinto fault in the south, branch from the San Andreas fault. Experts suspect there are many other faults that haven't been discovered yet.

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FORM

Pause at line 63. What does the cross-reference tell you? It tells us to refer to the boxed information that follows.

SEQUENCE

What kind of sequence is the boxed information about earthquakes presented in?

The information is listed in chronological order, from most recent to oldest.

IDENTITY

According to the boxed information, what earthquake was the worst in terms of fatalities?

San Francisco, 1906

SOME SIGNIFICANT CALIFORNIA EARTHQUAKES

- Northridge**, M6.7—January 17, 1994
57 deaths—more than 11,000 injuries—\$40+ billion in damage
 - Landers**, M7.3/Big Bear, M6.7—June 28, 1992
1 death—\$93 million in damage
 - Humboldt County**, M6.9—April 25, 1992
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 - Kern County**, M7.7—July 21, 1952
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700–800 deaths—\$400 million in damage
- *M = Magnitude on the Richter scale.

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Skills Review



Test Practice

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Sample Test Item	Explanation of the Correct Answer
The international symbols within the illustrations— A show what to do in an earthquake B show how much damage earthquakes do C explain what causes earthquakes D indicate the different supplies you will need	The correct answer is A . The symbols show how to duck, cover, and hold during an earthquake. No symbols are used to illustrate earthquake damage, (B), the cause of earthquakes, (C), or various supplies, (D).

DIRECTIONS: Circle the letter of the best response to each item.

- Which of the following is presented in a **step-by-step sequence**?
A the list of sanitation supplies
B the list of important earthquakes
C the process of duck, cover, and hold
D the tips on what to do in different places
- “Ever Wonder What Causes Earthquakes?” explains how—
F the movement of plates can create earthquakes
G San Francisco was destroyed in an earthquake
H scientists measure earthquakes
J we know an earthquake is coming
- “Some Significant California Earthquakes” follows—
A a point-by-point sequence
B a step-by-step sequence
C a chronological order
D no particular order
- The “Essentials” checklist is organized by—
F order of importance
G chronological order
H order of easiest to find
J alphabetical order

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Reading
 Analyze and evaluate elements of functional documents.

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EMERGENCY SUPPLIES CHECKLIST

Stocking up now on emergency supplies can add to your safety and comfort during and after an earthquake. Store enough supplies for at least 72 hours.

ESSENTIALS

- Water – 1 gallon per person per day (a week’s supply of water is preferable)
- Water purification kit
- First aid kit, freshly stocked
- First aid book
- Food
- Can opener (non-electric)
- Blankets or sleeping bags
- Portable radio, flashlight and spare batteries
- Essential medications
- Extra pair of eyeglasses
- Extra pair of house and car keys
- Fire extinguisher—A, B-C type
- Food, water and restraint (leash or carrier) for pets
- Cash and change

SANITATION SUPPLIES

- Large plastic trash bags for waste; tarps and rain ponchos
- Large trash cans
- Bar soap and liquid detergent
- Shampoo
- Toothpaste and toothbrushes
- Feminine hygiene supplies
- Toilet paper
- Household bleach

SAFETY AND COMFORT

- Sturdy shoes
- Heavy gloves for clearing debris
- Candles and matches
- Light sticks
- Change of clothing
- Knife or razor blades
- Garden hose for siphoning and firefighting
- Tent
- Communication kit: paper, pens, stamps

COOKING

- Plastic knives, forks, spoons
- Paper plates and cups
- Paper towels
- Heavy-duty aluminum foil
- Camping stove for outdoor cooking (caution: before using fire to cook, make sure there are no gas leaks; never use charcoal indoors)



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PURPOSE

Re-read the introductory text under the top heading. Underline why you should stock up on emergency supplies.

SEQUENCE

Scan the items in the Essentials checklist. Is the order of items significant? Explain.

The order is important;

the most important

items come first.

TEXT FEATURES

Notice the **logo**, which is at the end of this page. What do you think is its purpose?

The logo is an eye-

catching reminder that

surviving earthquakes

requires preparation.