

## Earthquakes K-2

### Earthquake Safety



Visit the American Red Cross Web site  
at [www.redcross.org/disaster/masters](http://www.redcross.org/disaster/masters)

## LESSON PLAN 3

# Stay Safe in an Earthquake

To stay safe before, during and after an earthquake, young children and their families need to identify and remove hazards. They also must know what to do when an earthquake strikes.

### Key Terms and Concepts

aftershock  
debris

Drop, Cover and  
Hold On

hazard

### Purposes

To have the students and their families identify conditions that increase hazards during an earthquake

To help the students and their families learn what to do during an earthquake

### Objectives

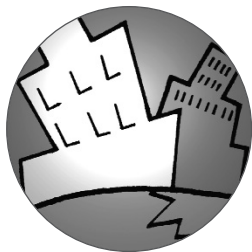
The students will—

- Define the word “hazard” and look at photographs of schools after an actual earthquake to recognize the damage caused by unmitigated hazards.
- Identify and mitigate earthquake hazards in their classroom.
- Find and lessen (mitigate) earthquake hazards in their home with the handout *Home Hazard Hunt* as a guide. (Home Connection)
- Look for earthquake hazards within the community. (Linking Across the Curriculum)
- Learn safe behavior during an earthquake and practice Drop, Cover and Hold On during an earthquake simulation.
- Use *Drop, Cover and Hold On* to help families discuss safe behavior during an earthquake, at school or at home. (Home Connection)
- Create and implement plans to teach others in the school community about earthquake safety. (Linking Across the Curriculum)

### Activities

“Find the Hazards”

“What Should I Do?”



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### Materials

- Chalkboard and chalk or large chart paper and markers
- "California Schools After a Quake" (optional) on the *Masters of Disaster* CD-ROM
- *Home Hazard Hunt*, 1 copy per student (Home Connection)




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## "Find the Hazards"

SET UP 10 minutes CONDUCT 35-45 minutes

Science: Health; Social Studies: Community

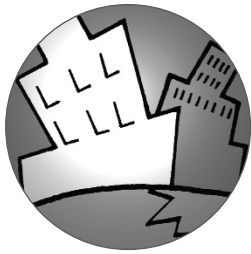
1. Ask the students what they think harms people when an earthquake occurs and give them time to express themselves. After some discussion, tell the students that the movement of the ground during an earthquake seldom directly causes people to get hurt. Explain that most people are hurt from things falling on them, such as pieces that break off buildings.
2.  Ask the children if they know the meaning of the word "hazard." (A source of danger.) After listening to their answers, explain the meaning of "hazard" and its relation to earthquakes.

**TEACHING NOTE** Photos that illustrate earthquake hazards in schools are included on your CD-ROM "California Schools After a Quake." All the photographs depict earthquakes that occurred when schools were not in session, and no one was hurt. The most common damage in these photos resulted from fallen ceilings. Practicing Drop, Cover and Hold On would have prevented injuries had children been in the school buildings. Safe evacuation would have been possible, although the darkened hallways would have been challenging for students to navigate.

These photographs could frighten very young children. Look at the photos before deciding whether or not to show them to your class. You may choose to show only a few photos that you feel address issues and hazards your students can understand—fallen books and bookcases, boxes toppled from shelves, etc.

3. Make a class list of the types of hazards that can result from an earthquake at school. Draw a large square on the chalkboard, divided into four sections and labeled as the following example. As the students give their ideas, write them on the chalkboard. For example:

<b>Damage inside the classrooms and hallways</b> Overturned bookcases, furniture and appliances Falling objects from shelves and walls Flying glass from broken windows Collapsing walls Falling pieces of ceiling and light fixtures	<b>Damage outside the school building</b> Falling brick from walls and chimneys Falling roof shingles Flying glass from broken windows
<b>Other damage within the school building</b> Fires from broken gas lines and electrical wires Flooding from broken water pipes Toxic fumes from spilled chemicals	<b>Damage around the community</b> Fallen power lines Damage to buildings, bridges, highways and railroad tracks Flooding from dam failures, damage to reservoirs and water towers Fires from spilled gasoline and other chemicals Landslides Tsunamis



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### Stay Safe in an Earthquake



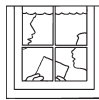
#### Wrap-Up

Ask the students to examine their own classroom, imagining what would happen if they picked up the classroom and shook it.



Have student teams walk around the classroom and note any hazards that might hurt them during an earthquake. Share the class list. (Answers will vary, but may include—Make sure the bulletin boards and bookcases are bolted to the wall. Move the boxes from the top of the bookcase. Latch the cabinet that holds the supplies. Relocate the globe from the unsturdy shelf. Make sure the TV monitor and other electronic gear are bolted securely to the wall support. Move the aquarium or animal cages away from desks. Make sure computer monitors and other electronics are secured to the desks or tables.)

Explain to the students that there may be some hazards at school or home that we cannot correct. However, there are many others that we can correct. From the class list, tell the students to determine which hazards they can correct and which they should report to the office. For example: remove boxes and stored items from the top of the cabinet and tie the cupboard doors shut; but, ask the office to send maintenance staff to bolt bookcases to the wall or attach straps for computer monitors.



#### Home Connection

Distribute *Home Hazard Hunt* to students. While talking about the pictures, explain that they show many potential hazards, but not all. And, of course, their own homes may not have many of them.

Have the students work with their families to discuss potential hazards and how to fix them. It's even better to look around each room in their homes to see what might happen in case of an earthquake. Tell them to look carefully at the areas where family members are most likely to be—at the dinner table, watching TV or in bed. What could happen? How can they fix it?

**TEACHING NOTE** You might give the students a *Masters of Disaster* earthquake sticker after completing this activity.



#### Linking Across the Curriculum

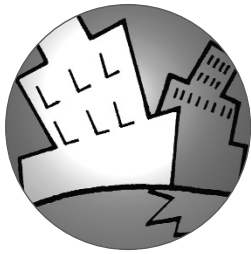
##### **Social Studies: Community; Science: Health**

Have the students identify earthquake hazards throughout the community. With the help of an adult at home, the students can make a list of hazards they find when shopping, eating out or playing in the park.

Have the students send simple letters or e-mail messages to the appropriate shop owners or city officials suggesting ways to correct the hazards they identified in their community.



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## LESSON PLAN 3

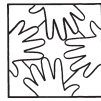
### Stay Safe in an Earthquake

#### Materials

- Noisemakers (e.g., pans, pencils, musical instruments)
- *Earthquake Simulation*, 1 copy
- *Drop, Cover and Hold On*, 1 copy per student (Home Connection)



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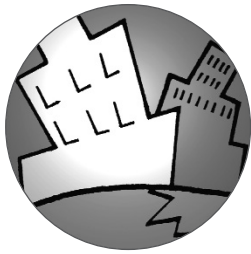
## "What Should I Do?"

**SET UP** 5 minutes **CONDUCT** 30 minutes, plus time to practice  
safety position

**Language Arts: Reading; Fine Arts: Dramatic Arts; Science: Health**

**TEACHING NOTE** The point of Drop, Cover and Hold On is to take cover immediately in the closest safe place. (For example, under a desk at school; under a sturdy table at home; or against an interior wall in an office building. If you are in bed, stay there and protect your head with a pillow.) The phrase Duck, Cover and Hold means the same as Drop, Cover and Hold On. Use the terminology approved by your school or district.

1. Ask the students if they would know what to do if an earthquake started right now. Have them share their answers.
2. Explain and demonstrate to the students the correct behavior. In the event of an earthquake students should—
  - **Drop:** Get under the desk or table, positioning as much of their bodies as possible under cover.
  - **Cover** their eyes by leaning their faces against an arm as they hold on.
  - **Hold On** to a leg of the desk or table. (Their hands and heads should be about halfway between the floor and the top of the desk or table.)
4. Explain to the students that you want them to practice when you say, "Drop, Cover and Hold On." Have the students drop. Keep them quiet. Once they have mastered the position, you should drop as well. After 15 to 30 seconds in place, ask them to get up carefully and check themselves and their neighbors. Ask, "Is everyone all right?" Wait for their answers and look around to visually check the students and the room. Wait for the students to calm down.
5. Repeat the drill regularly until the students have mastered it. When you think that the class is comfortable with the drop drill, conduct an imaginary earthquake exercise. Explain that you are going to create an imaginary earthquake by reading a story to help the students understand what to do if a real earthquake were to happen. Remind the students that "imaginary" means "pretend."
6. Appoint student helpers for the simulation:
  - One student to flick the lights on and off a few times and then eventually turn them off
  - One student to be the "timer" to count the seconds to see how long the earthquake lasted



# Earthquakes K-2

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- Several students to create earthquake sound effects, such as windows rattling, desks or tables scraping, drawers opening, dogs barking, books falling, trees scraping the building, people shouting, babies crying, car alarms sounding and doors banging shut.

**TEACHING NOTE** The simulation can get out of hand if you do not set it up carefully. Warn neighboring teachers before the drill. The sound effects might be too intense for younger students and/or students who are not familiar with earthquake drills. The scenario can be read without special effects and will still be effective.



#### Wrap-Up

Before you read the simulation, remind the students at their desks to follow the Drop, Cover and Hold On procedure.

Remind your helpers to complete their assigned tasks when you cue them in the story. After the simulation, ask the timer to report how long the “earthquake” lasted. In tsunami-risk zones, be sure to remind students that they will go to high ground after an earthquake that lasts 20 seconds or more.



While narrating the simulation, note the students’ ability to Drop, Cover and Hold On at the appropriate times. After the simulation, allow the students to share their feelings during the imaginary earthquake. Were they scared? Why? Did they feel safer in the Drop, Cover and Hold On position? Challenge them to give reasons why each step in the procedure is important to their safety.

Repeat the simulation, selecting different students to provide the effects so that each student has an opportunity to practice the Drop, Cover and Hold On procedure.

In the days following the activity, explain to the students that you may without warning say, “Earthquake. Drop!” You and the students will react by following the Drop, Cover and Hold On procedure.

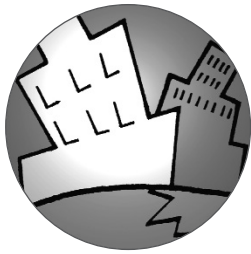


#### Home Connection

Distribute *Drop, Cover and Hold On*. Have the students take the pictures home to color and share. Challenge them to practice the Drop, Cover and Hold On procedure at home. The next day in class, ask them to share their experiences practicing the procedure with their families.



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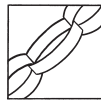
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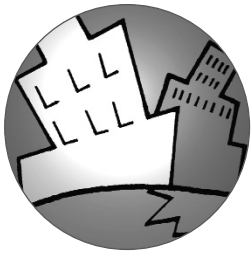


## Linking Across the Curriculum

**Social Studies: Community; Science: Health; Fine Arts:  
Dramatic Arts and Visual Arts; Language Arts: Writing**

Invite the students to find ways to help others in their school community learn about the importance of Drop, Cover and Hold On. They can—

- Create pictures to illustrate each step.
- Create and perform simple skits for other classes.
- Write simple stories or directions that teachers can read to other classes to spread the word about this important safety procedure.



# Home Hazard Hunt

Page 1 of 3

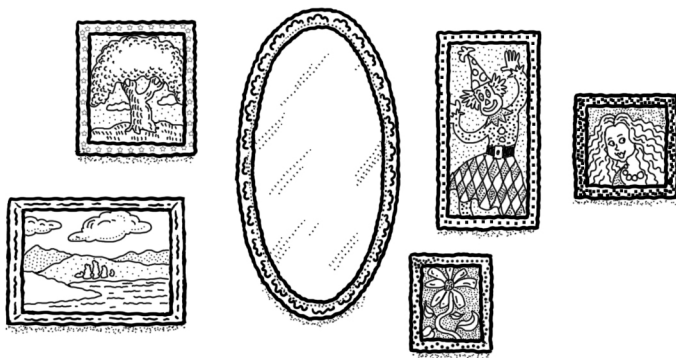
Name \_\_\_\_\_

Dear Parent or Guardian,

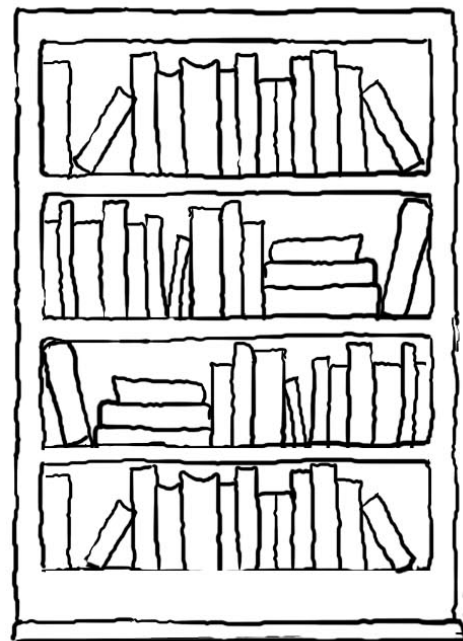
Anything that can move, fall, break or cause a fire could be a hazard during an earthquake. Imagine what would happen if you picked up each room in your home and shook it.

Think about where family members spend the most time and make sure these areas are safe from falling objects. Make sure exits are clear, too. Use the following pictures to help you consider the hazards you might find.

For more information, use the Earthquake Safety Checklist (from the *Masters of Disaster* CD-ROM, visit [www.redcross.org](http://www.redcross.org) or contact your local American Red Cross chapter.



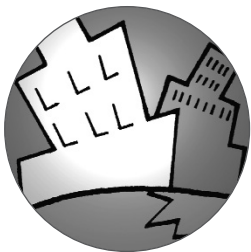
Are mirrors or pictures hung away from beds and chairs?

☐

Are bookshelves fastened securely to the wall?

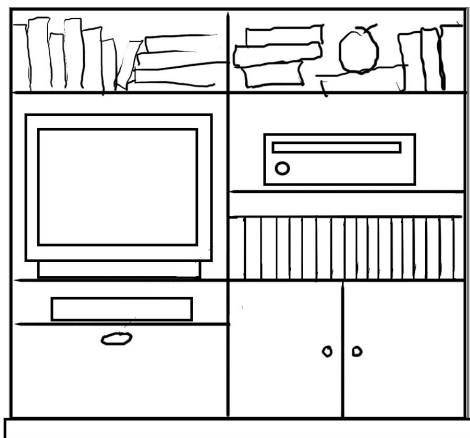
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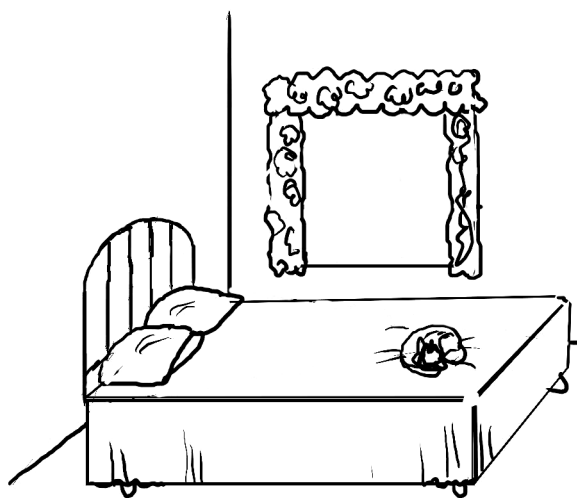


# Home Hazard Hunt

Page 2 of 3



Are entertainment cabinets bolted to the wall and electronic equipment secure on the shelves and behind cabinet doors? ☐



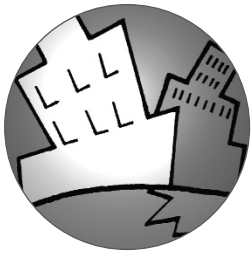
Are beds or chairs a safe distance from big windows? ☐



Are there no heavy objects on shelves above beds or chairs? ☐

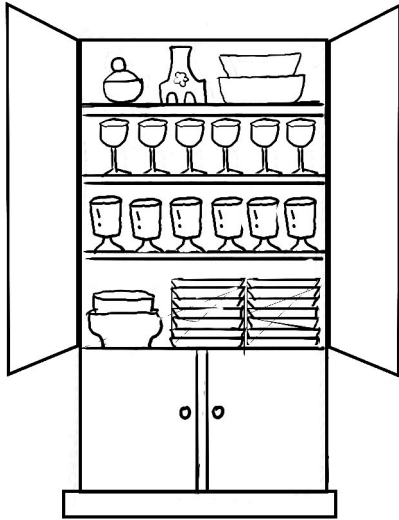




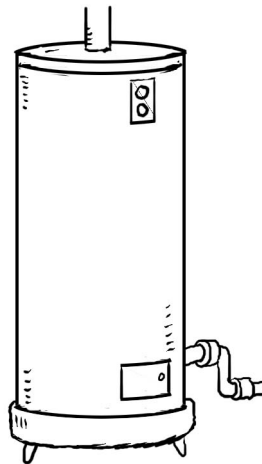


# Home Hazard Hunt

Page 3 of 3

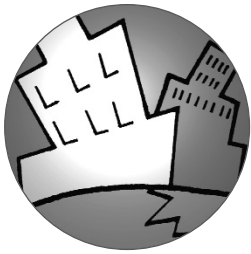


Are cabinets or cupboards fastened to the wall? Are the doors locked shut?

☐

Is the water heater secured to studs?

☐



# Earthquake Simulation

Page 1 of 2

Name \_\_\_\_\_

**Directions:** This is a story about an imaginary earthquake. As you read it, time the event and simulate the sounds. Most important, practice Drop, Cover and Hold On to stay safe.

First, you hear low, rumbling sounds. The noise grows louder and louder, for about 1 or 2 seconds. Then, wham! There's a terrific jolt. You feel as if someone suddenly slammed on the brakes in the car or a truck just rammed into the side of the building.

The floor seems to be moving beneath you. You hear someone say, "Earthquake! Drop, Cover and Hold On!" It's hard to get under the desk. You feel as if you are riding a raft down a fast river.

Drop, Cover and Hold On! Get under your desk as quickly and quietly as you can, right now. Cover your eyes and hold on.

The building is creaking and rattling. Books are falling from the bookcase. Hanging lamps are swinging. Suddenly a light falls to the floor and smashes. The windows are rattling.

Be sure to stay in the Drop, Cover and Hold On position under your desk.

You hear noises outside. A car alarm sounds. Dogs are barking. A baby is crying. People are shouting. The shaking is making church bells ring. You hear crashing sounds from bricks falling to the ground. Trees outside are swaying and scraping against the walls.





# Earthquake Simulation

Page 2 of 2

Inside the room, the floor keeps rocking. Tables and chairs are sliding. Oh! Something just fell and crashed to the floor. The lights begin to flicker on and off... They just went out! Now the door swings back and forth. Bang! It slams shut. There's silence now. Just as suddenly as the noise and shaking began, the room falls quiet and still.

*(Stop timing.)*

Please, everyone stay where you are for a few more seconds. We want to make sure the shaking has stopped and nothing else is going to fall.

Okay, everyone may come out slowly and stand up. It is important to remain very quiet and wait for instructions. Is everyone all right? Check yourself and those around you. Look at me and tell me if anyone is hurt. How long did our earthquake last?

Be ready to take cover again at any moment because the shaking may start again. Sometimes more earthquakes can happen shortly after the first one. Those are called aftershocks. Now, let's sit and talk about how we plan and practice to be safe in an earthquake.



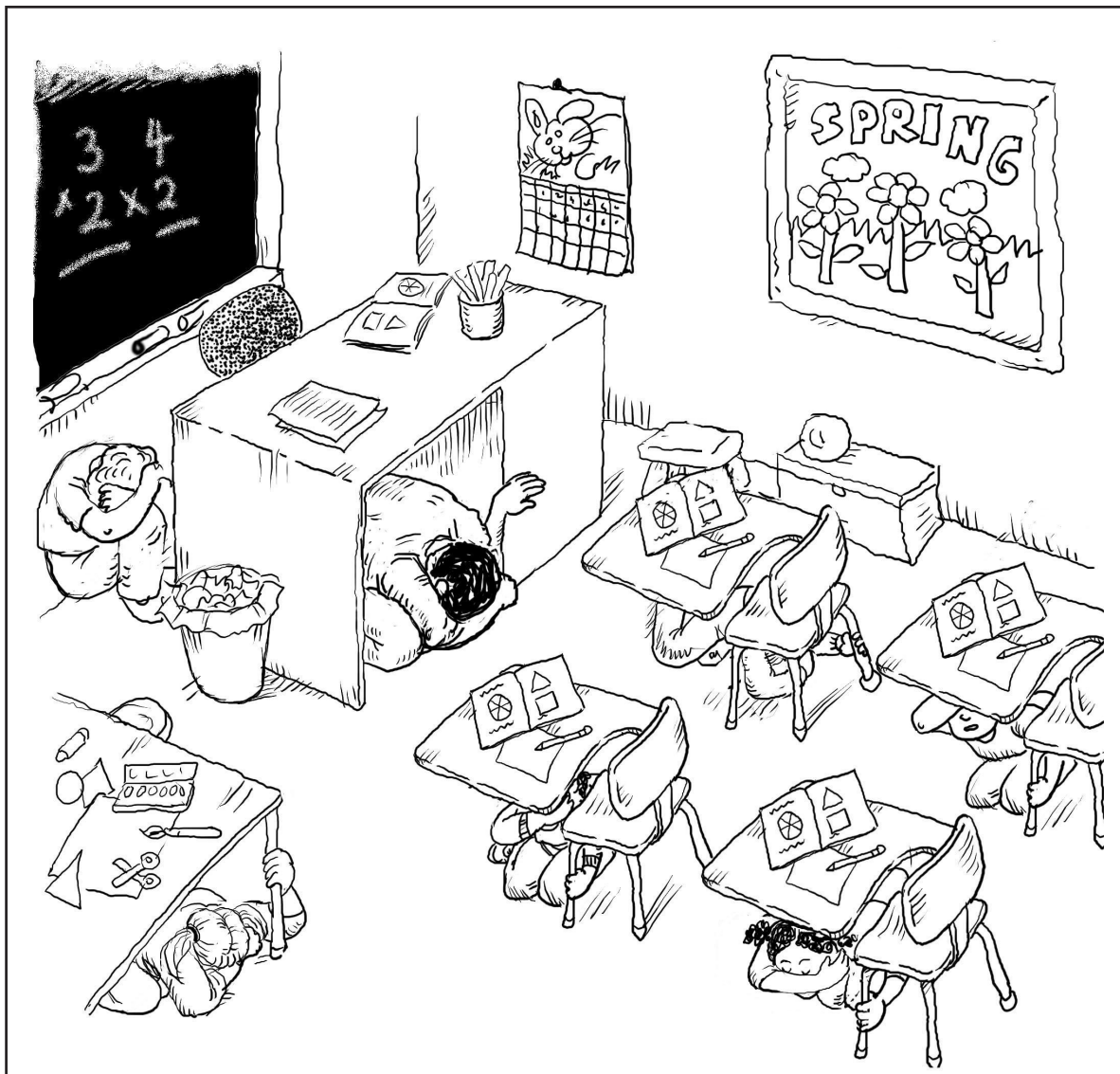


# Drop, Cover and Hold On

Page 1 of 2

Name \_\_\_\_\_

**Directions:** Describe what each person is doing to stay safe during an earthquake at school and at home. Find safe places in every room. Practice how to “drop, cover and hold on” with your family.

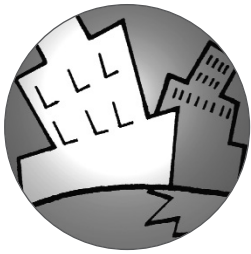


**Get under a desk or table.**

**Lean your face against an arm.**

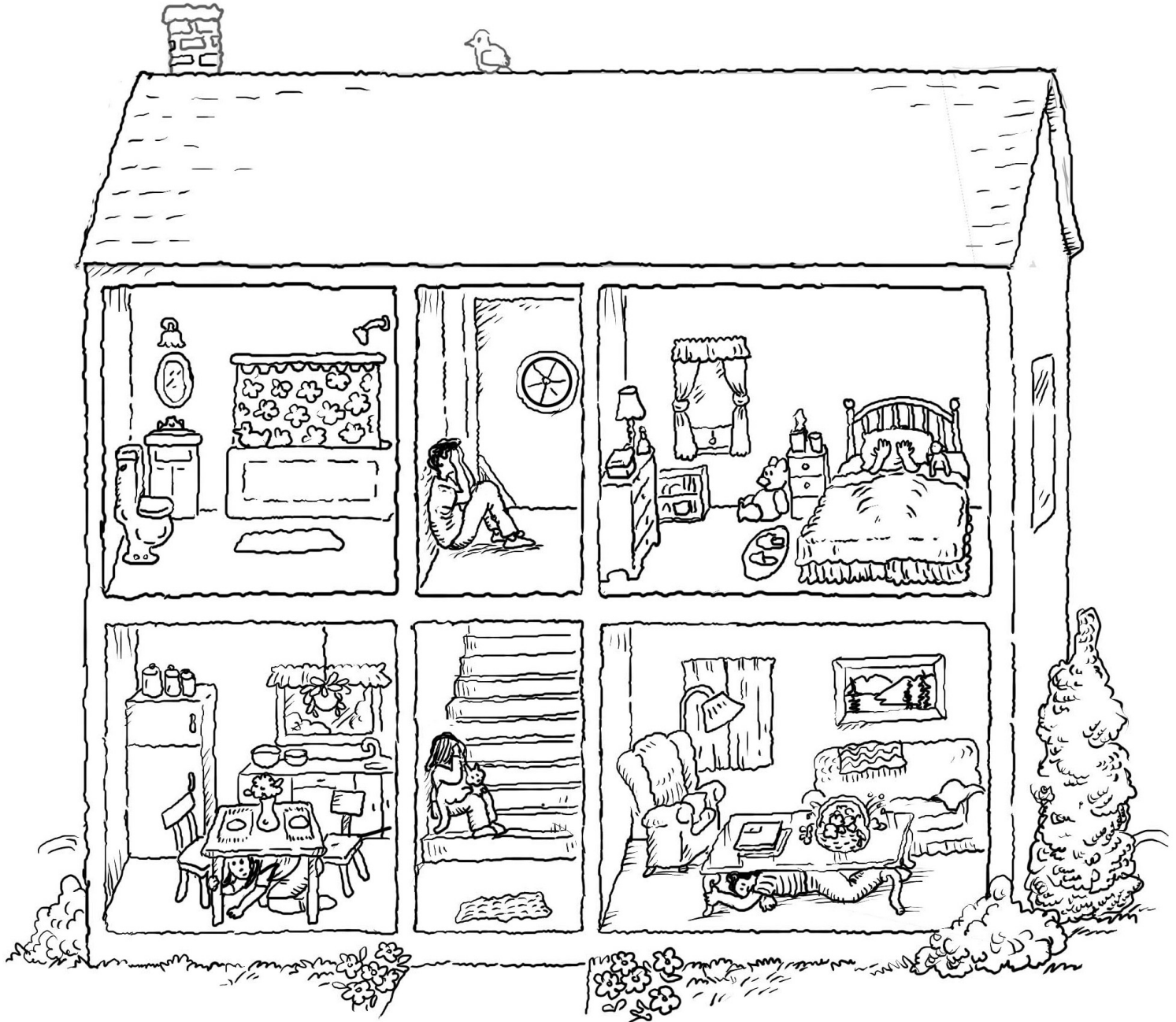
**Hold on to a leg of the desk or table.**





# Drop, Cover and Hold On

Page 2 of 2



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**DROP, COVER, AND HOLD ON**  
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