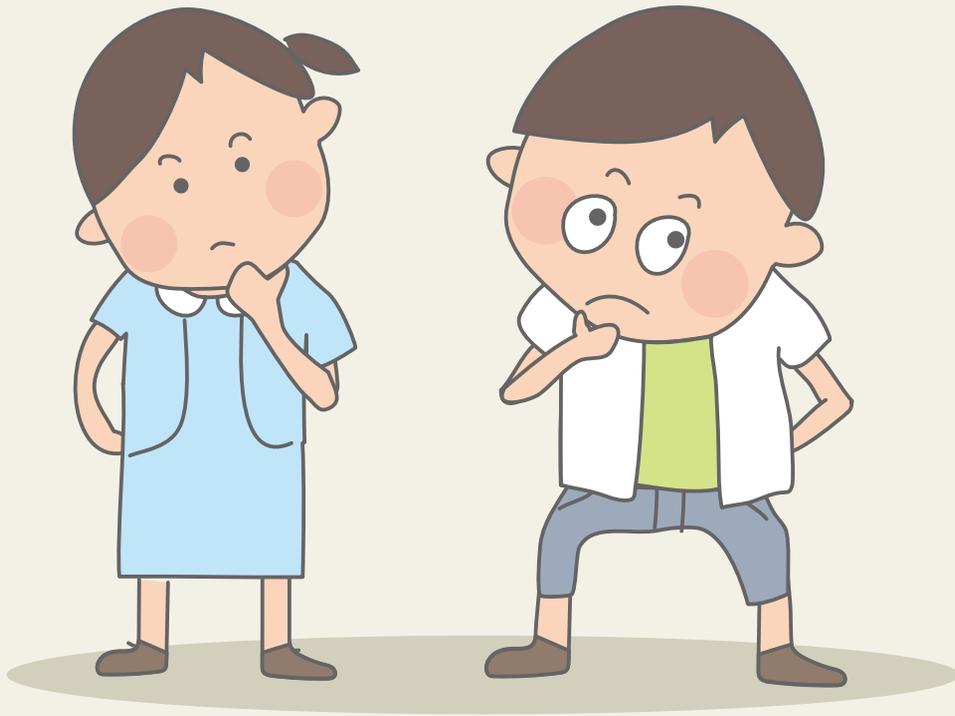


Disaster Preparedness for People Living in Apartments

# SONAERU DRILL



Following These Guidelines Can Help you be Ready for a Disaster

English  
VERSION

# Introduction

This drill is meant for families. Children and adults can use it together.

If there is a major disaster, do you know what kinds of problems you would have? Do you know what kinds of things you would need to have on hand?

This drill was put together by people who have experienced disaster.

From their experience, they made a plan that will help make a time of disaster easier to manage.

As you and your family work through this drill, you can think about how to protect yourselves and meet your family's needs.

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Bathroom Needs

P1~P5

Getting In Touch

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This book is written considering a level 6 earthquake on the Japanese "shindo" scale. Each earthquake situation will be different so please consider your living circumstances and what would happen to your own apartment if it was shaken

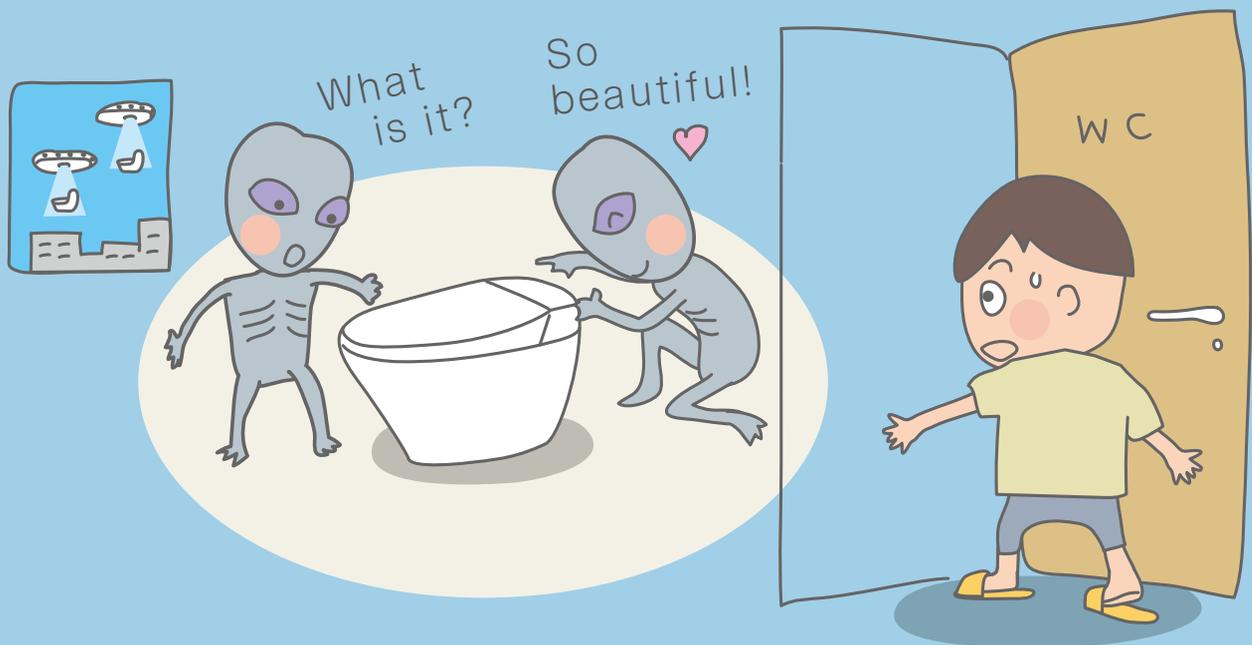
Project by Mitsubishi Estate Residence Co. Ltd. In Cooperation with Jiyu Gakuen + Kyorin University Supervised by Fukkou Ouendan Institute  
Designed by DG Communication Co. Ltd.+ Fujiwara Design Room

## | Question |

# We take Restrooms for Granted.

Imagine what would happen if aliens came and stole all the world's restrooms? It seems like a crazy idea, but that is what happens when a natural disaster hits. If there is an earthquake, many buildings do not have running water. It is just as if an alien invasion came and took all the bathrooms away.

What would you do?



- ① Hold it!
- ② Stop eating.
- ③ Try and get the bathrooms back.
- ④ Think of some other way to go to the bathroom.

Your answer is ... (      )

You can find some answers in the following sections.

**Question**



What would you do if you can't use the toilet because of the earthquake?

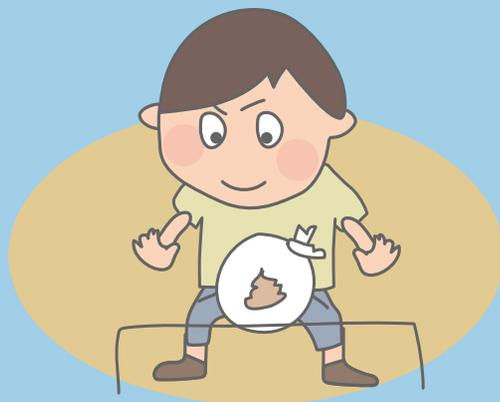
People may not be able to use toilets when a disaster like a huge earthquake takes place!! We can't hold it. Are there any other possible things we could use as toilets? What would you do?



**1** People should relieve themselves in the grass at a park.



**2** People should relieve themselves by a river.



**3** People should solidify their waste with special materials.

Your answer is ... (                    ) The answer is on the next page.

The answer to the question in lesson 1

**4**

Explanation : Not going to the bathroom for a long period of time can make you sick. The best way to deal with bathrooms being out of order is to chemically solidify waste.

## Answer

Best Answer  
to the Question  
on the  
Preceding Page

# 3



## People should solidify their waste with special materials.

Explanation : In the event of a major disaster toilets may not be flushed if there is pipe damage in the building or town. The situation would become worse if people relieved themselves in parks or rivers. If human waste is left exposed, germs will grow and there will be a risk of infections. With this in mind, it is important to think about the preparation of emergency toilets and waste hardening materials as well as a place to store waste.

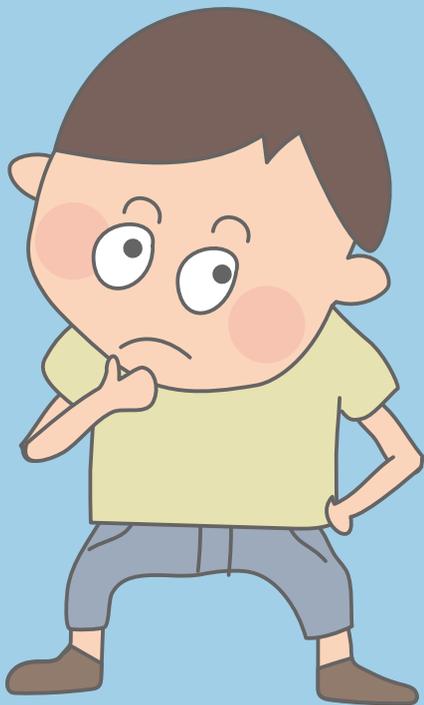


Emergency Toilet.  
Special Materials

| Question |

# How many times do you go to the bathroom a day?

In the event of a major disaster, even a temporary toilet will not come immediately. So how much emergency toilet and waste hardening materials are needed?



How many times do I go to the bathroom each day ?



First, estimate how many times you go to the bathroom a day:

times

Next, estimate how many times your family goes to the bathroom a day:

Figure out the number of times your family goes to the bathroom per week

Name	Number of times per day		Number per week	The number of waste solidifying kits needed for one week.
ex) me		× 7days =		=
		× 7days =		=
		× 7days =		=
		× 7days =		=
		× 7days =		=
		× 7days =		=
		× 7days =		=
		× 7days =		=
<b>Total</b>				

Be Prepared

The total number of emergency toilets your family needs is

Total:



After using the emergency toilet ?

Find a place in your home where you can store waste.

ex) In the Bathtub

Explanation : Until city garbage collection is resumed, waste must be stored in your home. When you don't have running water, you cannot use your shower, so it can become a temporary waste storage facility.

## | Question |

We say some people can read minds,  
but can you really do it?

Telepathy means you can communicate through mind contact.  
If you get lost in the city, telepathy would come in handy. But  
can you really use it?



- ① It is a secret, but I can.
- ② I think I can use it with my family.
- ③ If I am close by, I can use it.
- ④ I can't use it.
- ⑤ Other ...

Your answer is ... (      )

**Question** | Even if we want to, we can't really use telepathy.

Imagine, On a weekday, an earthquake occurs!! Each of your family members is in a different place; phone service is suspended. How can you contact each other?

When the earthquake subsides, family members will want to find each other. But how long will it take to get everyone together? Let's calculate the time!

**Average Walking Speed**

Adults: 5 kilometers / hour

Children: 3 kilometers / hour



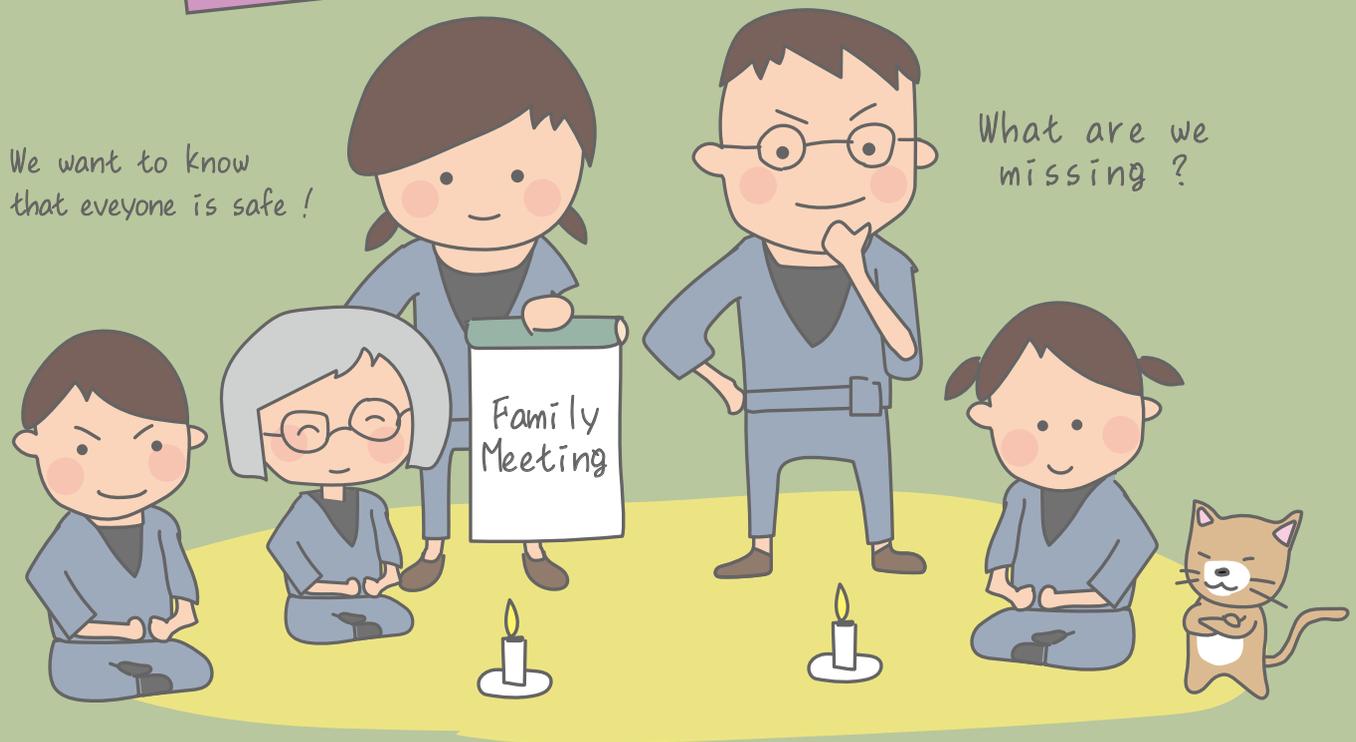
Fill in the chart and calculate!

Name	Weekday Location	Distance from Home	Walking speed	Walking Time
ex) me	school	1 km	3 km/h	
		km	km/h	
		km	km/h	
		km	km/h	
		km	km/h	
		km	km/h	

## | Question |

Let's think about meeting places and plan how to find your family members!!

### Meeting



We cannot predict where we will be in the event of an earthquake. When a major disaster occurs, phone and Internet service is usually not reliable. We cannot depend on technology to contact family members, so we need a different plan. The following page is divided into different times: [Weekday] [Weeknight] [Holiday] [Weeknight or Holiday Evening]. Think about where you might be during these times and write them on the next page.



| Question |

Do you remember  
what you ate yesterday??

Try to write everything you ate yesterday at each meal.



Your answer is ...

Breakfast ▶

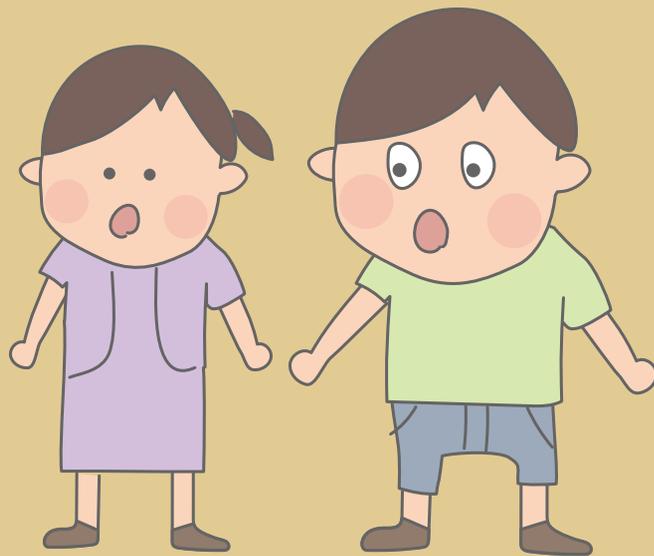
Lunch ▶

Dinner ▶

## | Question |

What do you think the food that you would most need for “evacuation life” would be?

This illustration shows one example of the meals actually eaten in a disaster area in Tohoku after the Tsunami in 2013. Consider protecting your health during a disaster situation. What food would you need?



Your answer is ...

The answer is on the next page.

The Best Answer to the Question on the Preceding Page

Vitamins from fresh vegetables and proteins found in meat and fish will be difficult to find!



Explanation : Your blood pressure will quickly be effected by stress and poor diet. Living in an evacuation situation will cause long-term stress and most of the foods that can be preserved for long periods lack vitamins. It is important to eat a balanced diet to protect your health , but foods which you can get easily during a disaster are mostly carbohydrates. In normal times, we don't usually eat rice balls and sweet bread as meals. Even if we do, at other times of the day, we can have nutrition rich foods. In a disaster situation, the available foods are mostly carbohydrates and fried food. When these foods are eaten exclusively for several days, people can suffer from insomnia and other health

## Examples of body and heart trouble resulting from a diet of Carbohydrates and Fried food



Weight gain and hyperglycaemia



stomatitis and constipation



a tendency to be frustrated or feel insecure

## | Question |

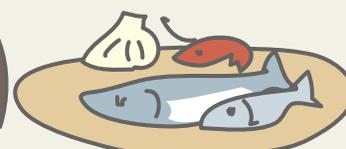
# What foods would you stock to prepare for a disaster?

Meals tend to lack variety during evacuation periods. What would you stock as emergency foods? Try listing foods from each food group on the next page!

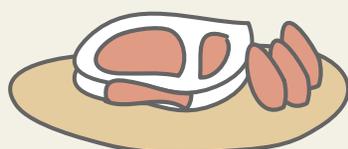
\*emergency foods = foods which can be stored for long periods of time



Vegetables



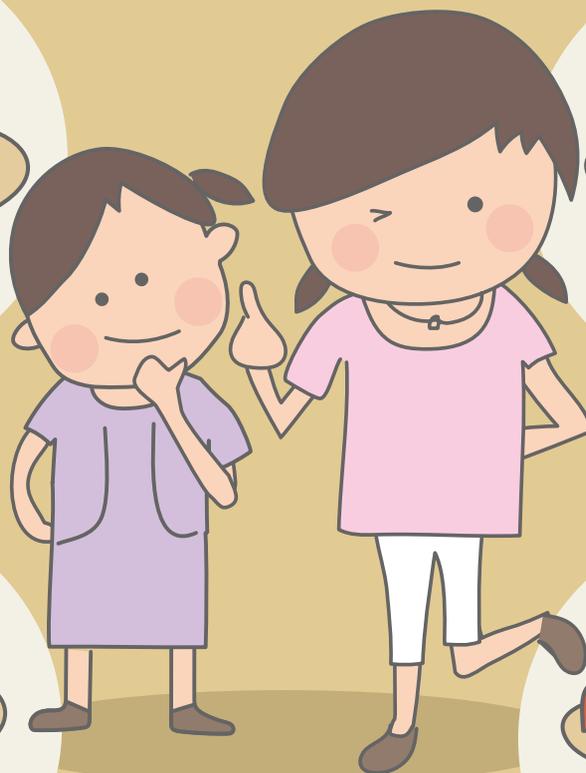
Fish



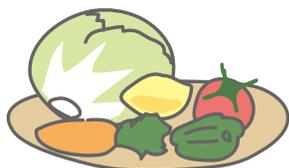
Meat



Fruit



## Planning what To Stock for Nutritional Balance



Vegetables

ex) Vegetable juice



Fruit



Meat



Fish

Explanation : Dried fruits and vegetables can be stored for long periods of times. Canned meat and fish can also be kept easily. These foods can be eaten without preparation, so even if you don't have access to water or a stove, you can still have nutrition. Having a supply of vitamin tablets is also a good idea. For families with babies, a supply of baby food is necessary. Each family member's nutritional needs must be considered, foods for diabetics or for people with allergies needs to be carefully prepared.

## | Question |

### Consider what you would bring with you if you were stranded on a desert island.

From tomorrow, you and your family will need to move to a desert Island! What do you need to bring to a place where there is no convenience store or super market. Try brainstorming a list of what you would need.



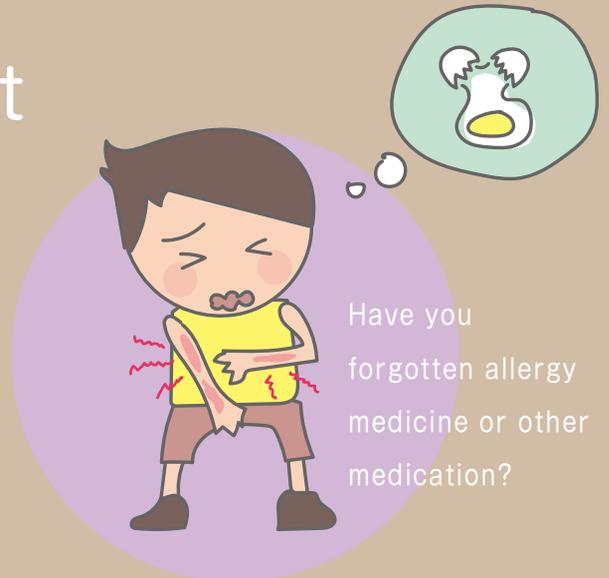
Your answer is ...

## | Question |

# Think about what you really need!

In addition to food and water, what would you need in an evacuation situation. Consider your needs.

For example...



Have you forgotten your asthma inhaler?



## Your answer is ...

Explanation : Relief Supplies that everyone needs, such as water and food, may arrive with relief supplies. However, it's necessary to prepare things for your own personal needs.

\*Relief supplies=Food, clothes, medicines, anything needed to support people living in a disaster situation.

## Question

Let's think about what is indispensable for each family member at the time of disaster!



Explanation : What is important is not only the things listed in general disaster preparedness information, but also to consider the personal needs of each family member and prepare accordingly. For example you may need special meals for the elderly such as minced meals or medicine like asthma inhalers and special foods for people with allergies. Baby diapers and wipes or formula for babies and daily medication must also be ready for people who need them.



List the specific needs of individual family members.

Name	Items Needed	Expiration Date other considerations	Number Necessary
ex) me			

Name	Items Needed	Expiration Date other considerations	Number Necessary

Name	Items Needed	Expiration Date other considerations	Number Necessary

Name	Items Needed	Expiration Date other considerations	Number Necessary

Name	Items Needed	Expiration Date other considerations	Number Necessary

Name	Items Needed	Expiration Date other considerations	Number Necessary

## Question

### What items in your apartment might turn in to “monsters” ?

Even though your house is quite safe, if a big earthquake occurs, some items might become like “hidden dangerous monsters” which attack your family.



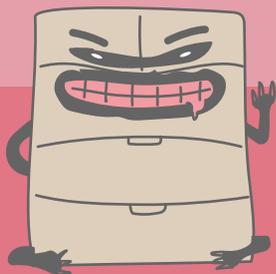
### Your answer is ...

Explanation : In the Great Hanshin-Awaji Earthquake in 1995, about half (48.5%) of injuries were caused by overturning or falling furniture. Even in building with little damage, a number of people got hurt or even lost their lives. Furniture that seems stable can move or fall over if there is a big earthquake. Furniture with doors can have contents fly out and scatter or break if unexpected shaking opens the doors. \*Please see page 21 of this Drill.

Source: Cabinet Office, Government of Japan Homepage section on Disaster Information

## Question

See if you can connect the "monster furniture" (①-⑤) to the problems it might cause (A-E). (There are many answers)



### ■ Monster Furniture

① Heavy furniture, such as a chest of drawers.



ex)

### ■ The Problems it Might Cause

A) This can hurt people if it falls on them.



② Things with heavy contents, such as a bookshelf.



B) This can block a doorway or passage if it falls.



③ Things with dangerous or breakable content, such as a cupboard.



C) This can hurt people if it breaks.



④ Electronics, such as things with breakable displays or TVs.



D) This can hurt people if things fall out or if the contents break and scatter.



⑤ Hanging lights.



E) This can hit people or break if it swings.

The answer is on the next page

# Lesson 2 : Science

## In the Home

Best Answer to the Question on the Preceding Page

- ① → A) B)
- ② → A) B) D)
- ③ → A) B) D)
- ④ → E)
- ⑤ → C)

Below, there are some ways to keep your furniture from becoming "monster furniture."



### Change the Layout of Your Rooms

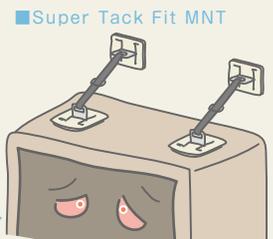
- Put furniture in a place where it will not block an entrance or path, even if it falls down.
- Move furniture that may fall away from places where people usually sit or sleep.
- Move furniture away from places where it may fall and break glass. Be careful of flower pots and other heavy decorations. Put them where they would not hurt anyone if they fell.



### Preventing Falling Furniture

- Fix furniture in place with a belt, chain or L-shaped bracket.
- When you can't make a hole in the wall or ceiling, fixing to furniture with a stopper, adhesive mat, and braces can keep it from falling.

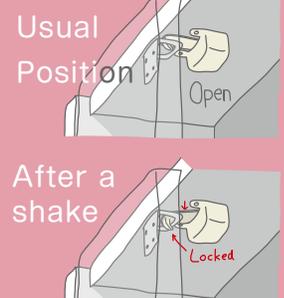
For furniture that can be moved, it is important to secure it to a wall.



### Preventing Things from Falling

- You can put a stopper at the edge of shelves to help keep books on the bookshelf.
- Installing a safety latch will keep cupboard doors and drawers closed.

Hardware stores sell special latches that are motion sensitive. They will automatically lock if the room begins to shake.



### Preventing Glass from Scattering

- The best way is affix shatter-proof adhesive film to glass.
- Remember that even a thin curtain can help prevent glass pieces from scattering around the room.





| Question |

## Look for Possible Monsters

Go through each room and imagine what it would look like if the room was shaken very hard. Don't let your furniture become a weapon against you. Keep furniture in children's room to a minimum. Pay attention to the direction of furniture. Fix heavy objects in place. Stop the danger before it can happen.

## Countermeasures for My House's "Monster Furniture"

Location	Furniture	Countermeasure
ex) Entrance		
Living room		
Dining room		

Explanation : We are focusing on furniture, but don't ignore things on the balcony that could also become "monsters." Flowerpots and other items can fall off balconies and hurt the people below.