Be ready, be safe.

Canadian Red Cross

Activity Booklet

For students aged 12–13

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Ce programme est aussi disponible en français.

Be ready, be safe.

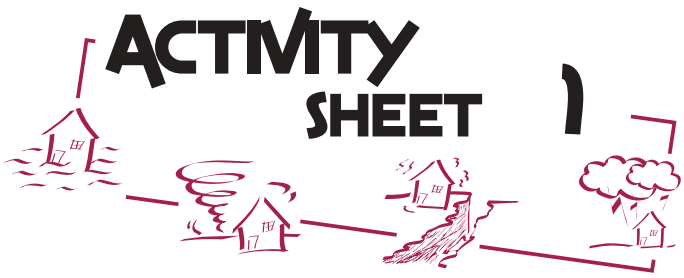
The Canadian Red Cross plays an essential role in emergencies. It provides numerous services to people affected by disasters in order to fulfill their essential needs in shelter, clothing and food. It also provides personal services for moral support and first aid. During evacuations, it registers evacuees, reunites families and provides essential information services.

To be prepared to act safely in emergencies, the Red Cross suggests you carry out the activities in this brochure with your teacher and your parents.

Enjoy the exercise!

This activity booklet belongs to : _____

The Red Cross: anywhere, anytime.



Activity objective : This activity lets you learn about the seven fundamental principles of the Red Cross and think about how you can apply them in your daily activities.

Humanity

Impartiality

Neutrality

Independence

Voluntary service

Unity

Universality

To know more about natural disasters.

Activity objective : This activity will allow you to know what type of natural disasters could occur.

General information

There are two types of disasters: natural disasters and those caused accidentally by human beings.

There are three types of natural disasters:

1) Weather related disasters: storms (hurricanes, tornadoes, cyclones, snowstorms), heat or cold waves, droughts, etc.

2) Topographical disasters: floods, avalanches, landslides, etc.

3) Geophysical disasters : earthquakes, volcanic eruptions, etc.

The type of disasters caused by human beings are called accidents: construction faults (dams, tunnels, buildings, mines, etc.), explosions, fires, collisions, shipwrecks, railway catastrophes, toxic substance leaks into drinking water networks, etc.

(Reference: Assan, M. (1971). **Decontamination Guide in Case of a Natural Disaster.** World Health Organization).

Natural disasters

According to the World Health Organization (WHO), a natural disaster is " a spontaneous phenomenon whose scope is such as to create a disastrous situation by suddenly interrupting daily activities; by rendering people helpless and causing distress, the population may find itself without any food, clothing and shelter, void of any necessities and medical and nursing care and helpless against the adverse factors and conditions of the environment ". Under the WHO's definition, an emergency is a " situation created either by a natural disaster, where people are not involved, or by a major accident where they may be the involuntary cause ".

Earthquakes

Definition

Earthquakes or seisms are sudden movements of the earth's crust. The tremors generally occur suddenly and leave very little time to react; however, major earthquakes are often preceded by weaker tremors.

Some statistics

In the twentieth century alone, more than one million people have died because of earthquakes. In Canada, this natural disaster is not considered a major threat, except in the Vancouver region.

Each year however, more than fifty earthquakes are felt in Canada and nearly 1,400 others of lesser intensity are recorded by the instruments of the Geological Commission of Canada.

In Canada, only the earthquake in the Atlantic Ocean south of Newfoundland in 1929 was fatal. It caused an enormous tidal wave that carried away 27 individuals. Fortunately, no other strong earthquake has struck other populated regions, which greatly accounts for the low number of victims and material damage.

Canada and earthquakes

Canada is not beyond earthquakes. Three regions are especially subject to this type of natural disaster:

1- Western Canada: British Columbia and the Yukon. The structure of the earth's crust is weaker in the Pacific Ocean.
2- Southeast Canada: the Atlantic coast, the Saint-Lawrence Valley and the Ottawa Valley. In these areas, the earth's crust moves a few centimeters each year, which creates resistance and causes earthquakes.
3- Northern Canada: its rise since the glacial period produces earthquakes.

Strength of earthquakes

What is the Richter scale?
Seismologists use the Richter scale to measure the energy produced by an earthquake.

Each earthquake has its own magnitude but the consequences vary according to the distance from the epicentre, the types of soil and the types of construction.

Earthquake severity

Richter scale	Earthquake consequences
Less than 3.5	Tremors registered but generally not felt.
3.5 to 5.4	Tremors often felt but with little damage.
5.5 to 6.0	Light damage to buildings.
6.1 to 6.9	Possibility of building destruction.
7.0 to 7.9	Major earthquake and serious damage.
8.0 or over	Major earthquake and total destruction of towns.

Reference: Emergency Preparedness Canada and Canadian Geographic (1996). **Canada National Atlas: Natural Disasters.** Emergency Preparedness Canada and Canadian Geographic. (Theme map)

Tornadoes

Definition

Tornadoes are funnel shaped whirlwinds that point toward the ground. This type of phenomenon can uproot trees, turn cars over and tear the roofs off houses.

Some statistics

Three major tornadoes have occurred in Canada. The one in Regina in 1912 caused 28 deaths, injured 200 persons, left 2,500 individuals homeless and destroyed 500 buildings. The one in Edmonton in 1987 caused 27 deaths, injured 300 persons and caused 300 million dollars in damages. The one in Pine Lake in 2000 caused 12 deaths and injured 140 persons. Four hundred individuals were displaced and 1 200 were affected by the tornado.

Canada and tornadoes

Tornadoes usually move toward the east or northeast. The Canadian regions that are most subject to them are the Prairies, Southeast Ontario and sometimes Southern Quebec.

Tornadoes can occur at any time of the year, especially between April and September. Hot and humid summer days are most favourable to tornadoes, especially at the end of the day.

Tornado force

What is the Fujita scale?

It is the scale used to measure the strength of a tornado. We use the scale graduations F-0 to F-5 to define the strength of the disaster. Canada has never had F-5 tornadoes.

The strength of the tornadoes that have occurred in Canada is as follows:

- 45 % were F-0
- 29 % were F-1
- 21 % were F-2
- 4 % were F-3
- 1 % were F-4

Intensity	F-0	F-1	F-2	F-3	F-4	F-5
Wind speed (km/h)	64 to 116	117 to 180	181 to 253	254 to 331	332 to 418	419 to 512
Damage	light	moderate	considerable	serious	catastrophic	unimaginable

Reference: Emergency Preparedness Canada and Canadian Geographic (1996). **Canada National Atlas: Natural Disasters.** Emergency Preparedness Canada and Canadian Geographic. (Theme map)

Floods

Definition

Floods are the overflowing of watercourses or water stretches caused by an excessive rise in the water level. The rise varies according to the climate, precipitation, temperature, wind, sun, thickness of the snow cover, shape and composition of the water catchment basin (topography, geology, pedology, vegetation) and the action of human beings (urban development, agricultural practices, lumbering).

The rise in water level can be caused by strong precipitation in the summer that varies according to rainfall intensity, its duration and the area it covers. It is linked to storms, cyclone depression and hurricanes. The rise may also be caused by the sudden thawing of the snow cover in the spring, ice jams or ice break-ups, resulting from heavy rainfalls and mild weather.

Some statistics

In Canada, two floods have caused major damage.

- One in the Saguenay region in 1996 where between 150 and 280 mm of rain fell within 48 hours on the Saguenay—Lac-Saint-Jean region. Over 16,000 persons were evacuated from their homes, 3 135 houses were destroyed or damaged. This disaster caused nearly 500 million dollars in material damage.

- One in Manitoba in the spring of 1997. This flood was caused by heavy precipitation combined with a late and sudden spring thaw. The Red River overflowed to form a lake of about 40 km by 100 km. The authorities had to evacuate 24,000 persons. The damage was estimated at 750 million dollars.

Canada and floods

Floods occur everywhere in Canada because the country is made up of highly branched hydrographic networks.

Protection measures

Over the years, the flood phenomenon and the number of floods seems to be increasing and the damage is of high concern. This damage increase is mainly linked to residential and industrial development in areas subject to flooding.

To reduce damage, dams have been built to control the rise in water levels, dikes have been built to reduce flood-liable areas and canals have been built to divert the flow of water. Since the beginning of the 80's, one means of prevention was favoured: occupation by-laws, that is, zoning the flooding plains. There are two types of zoning: strong current areas and weak current areas.

The strong current area extends from the shoreline to the water rise level. This will statistically occur once every twenty years, and its annual probability is 5 %. In this area, construction should be prohibited. The weak current area extends from the upper limit of the strong current area to the limit where the water has a probability of rising once in one hundred years. Statistically, this represents a probability of 1 %.

Lightning storms

Definition

A lightning storm occurs when an electrical discharge (lightning bolt) is followed by a lightning flash and thunder occurs. The lightning bolt can shatter windows, strat fires, cause power failures and explosions if it is close to combustible material. It may be dangerous for people as it can cause severe burns and electrocution.

The formation

Lightning storms occur at the end of the day when the weather is hot and humid. The air currents that produce them create humidity and separate electrical charges from each other. Then, the discharge occurs to produce heat lightning and a lightning bolt.

Intensity

Lightning bolts have a very high energy level. When they strike a tree, the electrical current reaches the water in the wood and transforms it into steam, thereby causing the tree to shatter.

The electrical discharge can reach up to 100 million volts and a temperature of 30,000 °C.

Measuring the storm's distance

Since light travels about one million times faster than sound, we see a lightning flash before we hear the thunder during a lightning storm.

You may calculate how far away you are from the lightning bolt by simply counting the number of seconds between the moment you see the lightning flash and the moment you hear the thunder. By dividing that number by 3, you get the distance in kilometers.

1. Select a natural disaster (earthquake, tornado or flood) and then answer the following questions:

Natural disaster chosen: _____

a) Define in your own words the natural disaster you have chosen and summarize its characteristics.

b) List the places, seasons or times of the day that are most favourable for that type of disaster.

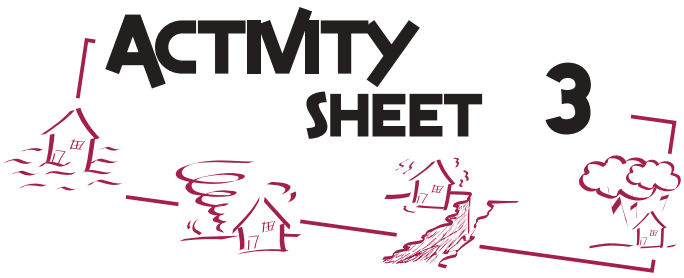
c) Explain the possible causes for that type of disaster to happen.

d) Describe the most important emergency caused by this type of disaster.

e) If applicable, state the units of measure or the instrument that is used to calculate the intensity of the disaster you have chosen.

2. Describe a lightning storm in 15 lines by using the information from the text.

What is an earthquake?



Activity objective : This activity will help you understand what causes earthquakes.

The structure of the earth can be compared to that of an egg. Th egg's shell is like the earth's lithosphere : the shell's depth relative to the whole egg is about the same as the lithosphere's depth relative to the whole earth. The asthenosphere of the mantle corresponds to the egg's membrane. The egg's white layer corresponds to the remainder of the mantle. The yolk of the egg is similar to the earth's core.

Material required
- Eyedropper
- Small glass of water
- Knife
- Hard-boiled egg
- Small bowl for discarded egg pieces

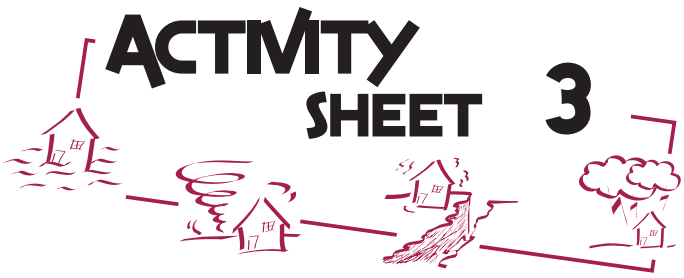
Instructions :

1. Use a knife to cut the egg in half. Examine the layers that are revealed. What parts of the earth's structure are represented by these layers : shell, white, yolk?

2. Look for a very thin layer between the shell and hardened egg white. It is called the membrane. What part of the earth's structure might correspond to the membrane? Explain.

3. Lightly tap one half of the egg on the surface of your desk. The shell will break into fragments. Let these fragments represent the earth's tectonic plates.

What is an earthquake?
(Continued)



4. Lift two of the larger, connecting fragments slightly and use eyedropper to add a drop of water beneath each one. Now replace the fragments on the egg.

5. Slide these two fragments or " plates " toward each other. Do the " plates " slide smoothly? If not, where do they catch?

_____

_____

6. What would happen if you pushed the two plates against each other in an opposite but parallel motion?

_____

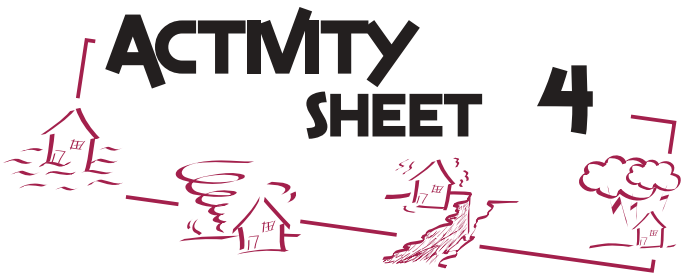
_____

7. What if you pushed them together so they collide?

_____

_____

What is a tornado?



Activity objective : This activity will help you understand what causes a tornado.

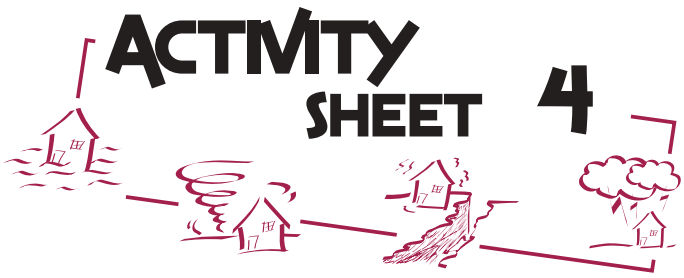
Material required :

- Two 2-liter soda bottles with caps
- Hammer and 5 or 7 cm nail
- Scissors
- Balloon
- Food coloring
- About 2 liters of water

Instructions :

1. Use the hammer and nail to punch a hole through each bottle cap. Widen the holes to about 5 millimeters.
2. Cut the top off the balloon, leaving just 2 centimeters or so of the tight bottom.
3. Fill one bottle 2/3 with water. Put a few drops of food coloring in the water and swirl it around so the color mixes in.
4. Leave the other bottle empty.
5. Screw the caps on each bottle.
6. Fit one end of the balloon over the neck of the bottle with water in it.
7. Flip the empty bottle over and place the caps of the bottles together.

What is a tornado?
(Continued)



8. Fit the other end of the balloon over the neck of the empty bottle.

9. Turn the bottles over and shake the full bottle in a circular motion.

10. Describe what happens.

_____

_____

_____

11. What part of a tornado does this demonstrate?

_____

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_____

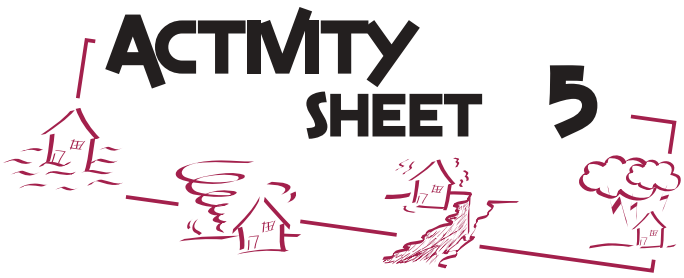
12. How does it compare to real tornado formation?

_____

_____

_____

What is a flood?



Activity objective : This activity will help you understand what causes floods.

Material required :

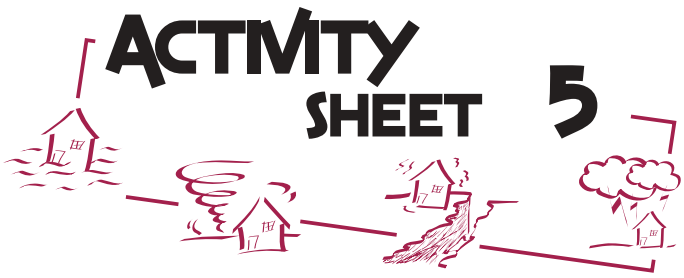
- Very large pan or plastic-covered box
- Water source with hose
- Large bassin or area for drainage
- Bricks or blocks
- Soil of different types and porosity
- Toy houses, buildings, and cars
- 2 or 3 spray bottles

Instructions :

1.
   - **Fill the large pan with soil. Mold the soil into hills, valleys, and dry environment.**
   - **Place the toy buildings and cars into the stream table " landscape " to create a town.**
   - **Fill the spray bottles with water and spray the water onto the stream table to simulate steady rain. What happens when the water hits the ground?**

2. **After a few minutes, increase the opening on the nozzles of the spray bottles and pour a larger amount of water onto the landscape. What happens now?**

What is a flood?
(Continued)



3. Does the water infiltrate the soil? Why?

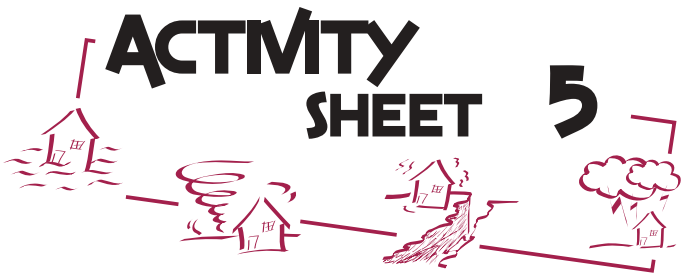
4. Would different soils have slowed or quickened the flooding process? Why?

5. What happens if any type of soil reaches its saturation point?

6. What happens to the streams and streambeds when the soil reaches its saturation point?

7. Where does the runoff go on the stream table?

What is a flood?
(Continued)

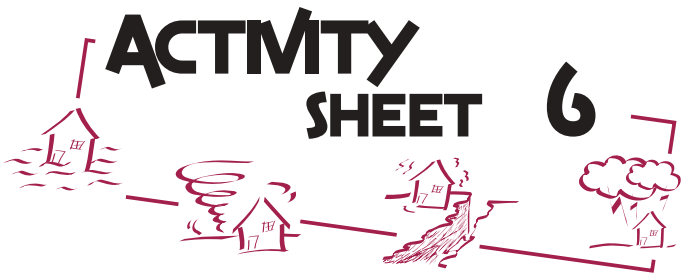


8. What areas of the simulated landscape would be the floodplain? Why?

9. What areas accumulate runoff water?

10. Where would be the safest place to build? Why?

What is lightning?



Activity objective : This activity will help you understand what causes lightning.

Material required :

- Foam dinner plate
- Disposable aluminum pie pan
- Masking tape
- Wool cloth
- Foam cup

Instructions

1. Tape the cup, upside down, to the inside center of the aluminum pie pan.

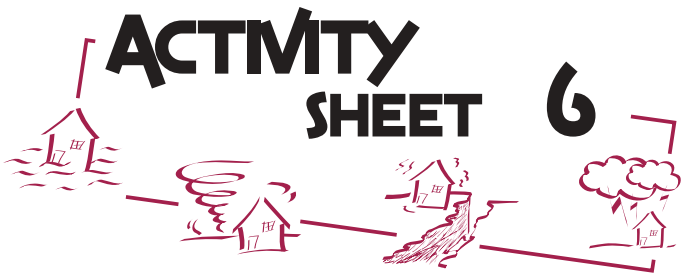
2. Turn the foam plate upside down and rub it with a wool cloth for about a minute.

3. Then, charge the pie pan in the following manner: Place the pie pan directly on top of the charged foam plate, with the cup sticking up like a handle.

4. Quickly touch the pie pan with your finger. What do you hear? What do you feel?

5. Remove the pie pan by holding the insulating foam cup. What do you see?

What is lightning?
(Continued)



Analysis

6. What is the charge of the foam plate once it attracts electrons from the wool?

7. What is the insulator in this experiment?

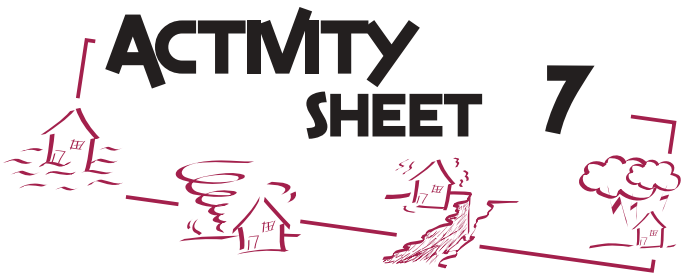
8. What happens to the charged pie pan when you touch it?

9. What charge does the pie pan carry?

10. What causes the spark of light and sound?

11. What are you actually feeling when the " shock " flows through your finger?

Natural disasters throughout the world.



Activity objective : This activity will raise your awareness that natural disasters occur anywhere in the world.

1. Search for articles in newspapers, magazines or the Internet about natural disasters that have occurred in the world.

2. Read the article you found and analyze it by answering the following questions.

a) Which natural disaster did you learn about?

_____

b) What region was affected by this natural disaster?

_____

c) Briefly describe the natural disaster.

_____

_____

_____

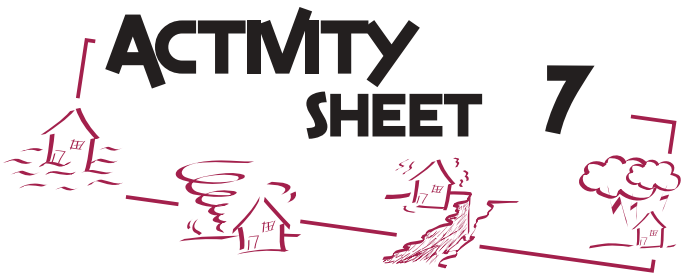
d) Specify the severity of the disaster.

_____

_____

Natural disasters throughout the world.

(Continued)



e) Explain possible causes for this kind of disaster.

_____

_____

_____

f) Explain the direct and indirect consequences of this disaster on human populations.

_____

_____

_____

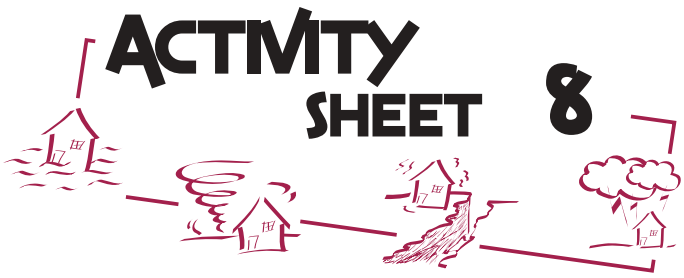
g) Name the humanitarian organizations involved.

_____

_____

_____

Climate change and natural disasters.



Activity objective : This activity will let you learn about the connection between natural disasters and climate change.

1. Read the article handed out by your teacher and answer the following questions.

a) How much is the average temperature on the planet expected to increase over the next century?

_____

b) List the consequences of global warming in coastal regions and mainland regions.

_____

_____

_____

_____

c) In your opinion, why will poorer countries be the hardest hit?

_____

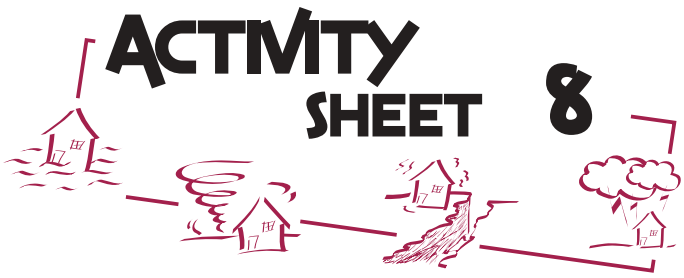
_____

_____

_____

Climate change and natural disasters.

(Continued)



d) What is the greenhouse effect?

_____

_____

_____

e) Explain how we all contribute to the greenhouse effect.

_____

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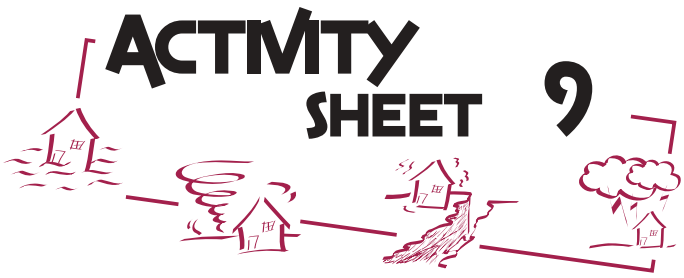
f) Explain what you can do to reduce the greenhouse effect.

_____

_____

_____

Other kinds of disasters in Canada.



Activity objective : This activity lets you learn about other kinds of disasters that have affected Canada.

1. **Search for articles in newspapers, magazines or the Internet about natural disasters that have occurred in Canada.**

2. **Read the article you find and analyze it by answering the following questions:**

a) Which disaster did you learn about?

_____

b) What region was affected by this disaster?

_____

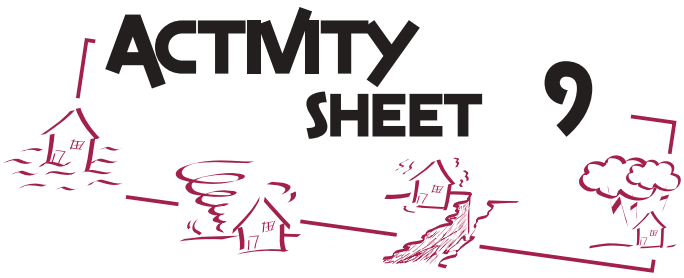
c) Briefly describe the disaster.

_____

_____

_____

Other kinds of disasters in Canada.
(Continued)



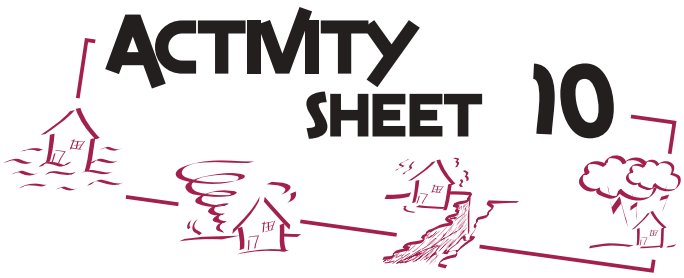
d) Specify the severity of the disaster.

e) Explain possible causes of this kind of disaster.

f) Explain the direct and indirect consequences of this disaster on human populations.

g) Who helped the disaster victims and how?

To be ready for an emergency.



Activity objective : This activity will teach you how to prepare in order to react efficiently in case of an emergency.

A natural disaster often occurs unexpectedly. To react properly, it is essential that some of your luggage be ready.

1. An emergency kit is luggage that you can prepare ahead of time. In the list of the following objects, check off those that should be part of your emergency kit.

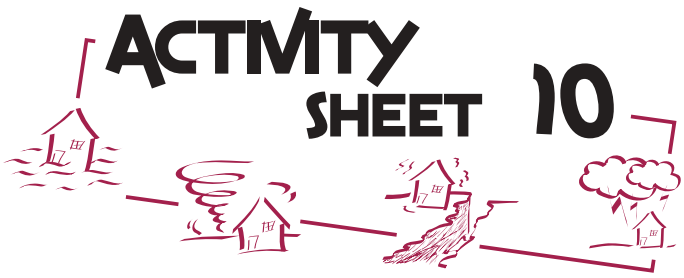
Personal care

- ☐ Shampoo
- ☐ Facecloth and towel
- ☐ Hair dye
- ☐ Hair brush
- ☐ Make-up
- ☐ Deodorant
- ☐ Medication
- ☐ Toothbrush
- ☐ Toothpaste
- ☐ Hairspray
- ☐ Body soap
- ☐ Hand and body cream
- ☐ Perfume
- ☐ Feminin care products

Clothing

- ☐ Socks (cotton, wool)
- ☐ Hat
- ☐ Underwear
- ☐ Dress or skirt
- ☐ Shoes
- ☐ Pants
- ☐ Sweaters (wool, heavy cotton)
- ☐ Jackets (raincoat, coat)
- ☐ Sneakers/runners
- ☐ Jewellery

To be ready for an emergency.
(Continued)



Various items

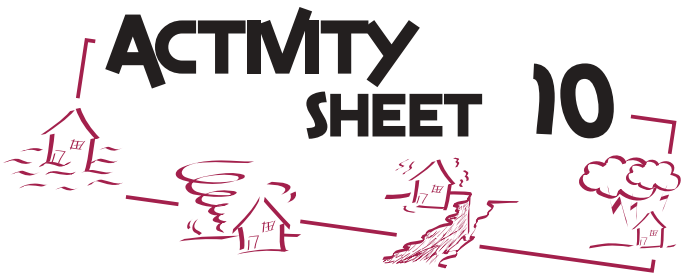
- ☐ Canned food (vegetables, fruit, stews, beans, etc.).
- ☐ Bread
- ☐ Soft drinks
- ☐ Fruits and vegetables
- ☐ Drinking water
- ☐ Condiments (ketchup, mayonnaise, etc.)
- ☐ Cake
- ☐ Jam, honey, peanut butter, etc.
- ☐ Milk products (cheese, milk, etc.)
- ☐ Pudding (a delight for children)
- ☐ Crackers and Melba toast
- ☐ Cereal
- ☐ Vegetable oil
- ☐ Seasoning (pepper, salt, spices, etc.)
- ☐ Meat and fish
- ☐ Fruit juice
- ☐ Pasta
- ☐ Hot drinks (coffee, tea, etc.)
- ☐ Chips
- ☐ Nutrition bars

Miscellaneous

- ☐ Keys (house, car)
- ☐ Flashlight and spare batteries
- ☐ Glasses
- ☐ Dishes
- ☐ Music cassettes
- ☐ Candles and matches
- ☐ Money
- ☐ Camp stove with fuel
- ☐ Whistle
- ☐ Portable radio
- ☐ Manual can-opener and bottle opener
- ☐ Books
- ☐ Red Cross first aid kit
- ☐ Back-pack
- ☐ Important documents (identification and personal documents)
- ☐ Games
- ☐ Heavy blanket

N.B. These lists of objects are not exhaustive.

To be ready for an emergency.
(Continued)



A **Red Cross first aid kit** allows you to provide first aid in emergencies. It contains at least the following objects:

- Sterile gauze of various sizes
- Tape
- Gauze roll
- Triangular bandage
- Adhesive bandages of various sizes
- Pressure bandages
- Scissors
- Disposable latex gloves
- Antiseptic swabs
- Protective barrier device for rescue breathing
- Emergency blanket.

You could add the following objects:

- Red Cross first aid manual
- Emergency telephone numbers
- Soap
- Paper and pencil
- Coins
- Ice pack
- Flashlight with spare batteries stored separately
- Tweezers
- Thermometer
- Pocket resuscitation mask
- Etc.

To be ready for an emergency. *(Continued)*

2. When answering the following questions, evaluate your aptitude to help.

	TRUE	FALSE
1. 90 % of accidents can be avoided with a minimum of prevention.		
2. The first step to follow on the site of an accident is to ensure my own safety.		
3. If I am witness to an accident, it is my civic duty to stop and help.		
4. To ease the pain, I can apply butter or petroleum jelly to a burn.		
5. In case of poisoning, I must ask the victim to drink milk.		
6. To stop a nose bleed, I must tilt the head back.		
7. In case of a fracture, I must reposition the limb in its natural position.		
8. I must remove shards of glass lodged in a wound.		
9. It is important to find cotton swabs, peroxide and merchurochrome in a first aid kit.		
10. The majority of deaths after a heart attack occur in the two hours following the appearance of the first symptoms.		
11. I must burst a blister to ease the pain.		
12. One would have to place a hard object in the mouth of a victim of epilepsy to prevent him or her from swallowing his or her tongue.		

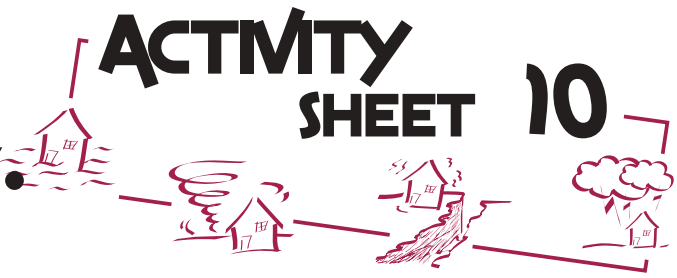
1) You obtained nine to twelve good answers. Bravo! Any injured person would be in good hands with you. But for added confidence, why not follow a first aid course?

2) You obtained five to eight good answers. You demonstrate a certain aptitude to help. But enrolling in a first aid course could be beneficial.

3) You obtained one to four good answers. Emergency 911! You should immediately enroll in a first aid course.

Do you have a first aid kit at home? Would you know how to use the material it contains? To get a Red Cross first aid kit or to register for a first aid course, contact your local branch of the Red Cross.

To be ready for an emergency. *(Continued)*



3. In case of an emergency, it may be necessary to call for help. Fill out the telephone list by finding the emergency telephone numbers. Post this reminder near your telephone at home.

a) Emergency 9-1-1 or _____

b) Fire station _____

c) Police station _____

d) Ambulance _____

e) Mother at work _____

f) Father at work _____

g) Another adult (relative, neighbour) _____

h) Local community health service _____

i) Family doctor _____

4. Now that you know the telephone numbers to dial for help in case of emergencies, write down the essential information you should give the switchboard operator. Check your answers with your teacher or facilitator.

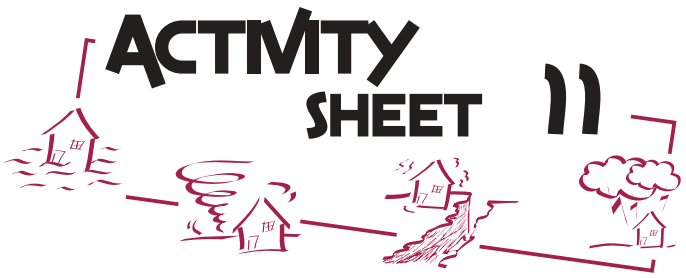
_____

_____

_____

_____

Risk analysis.



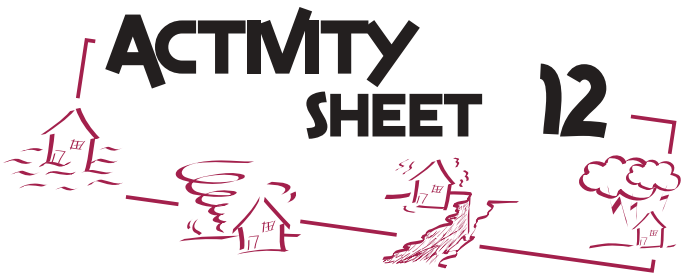
Activity objective : This activity lets you discover potential hazards in your bedroom.

Your bedroom is a place in which you spend a lot of time. To make it as safe as possible, use the following list to identify potential hazards and then make whatever changes are called for.

In my room:

a) No heavy objects are suspended on the wall over my bed.	
b) Curtains and drapery don't touch the heaters.	
c) No object is in contact with the heating elements.	
d) Rugs are taped down in order to prevent falls.	
e) I always put my shoes in the closet to be sure that they don't block the door if I have to get out quickly.	
f) There are no objects near the door that could block the exit in an emergency.	
g) I know under which pieces of furniture I can find shelter in case of an earthquake or a tornado.	
h) I have identified walls without objects against which I can lean in case of an earthquake or a tornado.	
i) The furniture is placed in such a way that it can't slide and block the door.	
j) All cupboard doors are securely latched.	
k) My computer is securely fastened to the workstation.	
l) Shelves, wardrobes and other wall units are bolted to the wall.	
m) My aquarium is protected from falling over or sliding.	
n) All overhead lamps are securely attached to the ceiling.	
o) Books and objects are placed in bookcases in such a way that they can't fall from the shelves.	
p) All wall decorations are securely fastened to the wall.	

Your school evacuation plan.



Activity objective : This activity will allow you to learn your school evacuation plan.

1. Give the reasons why you should quickly exit the classroom or the school.

_____

_____

_____

2. By referring to your school plan, answer the following questions.

a) How many emergency exits are there and where are they located?

_____

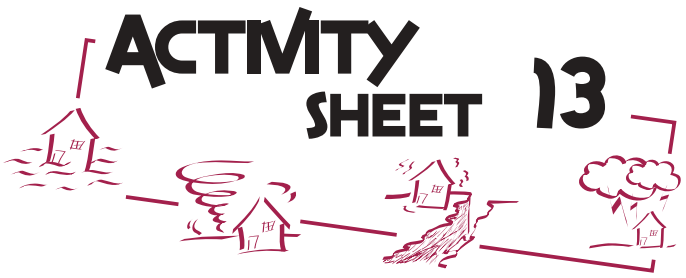
b) Where are the fire extinguishers and other emergency material located?

_____

c) What is the quickest route you should take to evacuate the school starting from your:

- Classroom : _____
- Cafeteria : _____
- Gymnasium : _____
- Library : _____

The behaviours and attitudes to adopt in emergencies.



Activity objective : This activity will allow you to identify the behaviours and attitudes to adopt in emergencies.

One dictionary definition of a natural disaster is: " Sudden event which causes a disruption that could lead to destruction and deaths: it is a great mishap, a disaster. " The population must be prepared to face a disaster because it is a sudden unexpected event. **How? By knowing what to do!**

Part 1

1. Read the following case studies. Fill out the chart on the following page to identify the attitudes and behaviours to adopt in case of an emergency.

a) On September 12th, 2002, the Smith family is getting ready for dinner. Suddenly, an earthquake tremor is felt. The dinnerware on the table is shaking and a few plates fall on the floor. Mary starts to yell: "It's shaking everywhere, everything is falling down." and she starts running around the table. Mark hides under the table. Mary-Ann runs out of the house.

b) During summer holidays in Western Canada, the Williams family is travelling on the highway. Everyone is astounded when they notice on the horizon a whirlwind of dust and earth rising in the sky. It is moving very quickly in their direction. They decide to stop the car on the highway shoulder, lock the doors and hang on to the seats while waiting for the air current to go by.

c) On a lovely summer afternoon, the sky gets clouded over and thunder is heard far away. The Jones family goes inside the house to seek shelter from the rain. The kids decide to turn on the computer and to use the Internet while the parents close the windows and the doors and disconnect the electrical appliances.

d) The Spring of 2003 is very warm. The snow is thawing quickly and ice jams are forming on the river. The water level is rising and the land next to the river is flooded over. The residents are moving their belongings to the upper floor of their house and are staying there until things return to normal.

The behaviours and attitudes to adopt in emergencies.

(Continued)

ACTIVITY SHEET 13

Natural disaster	What to do	What not to do
a)		
b)		
c)		
d)		

In these situations, which one presents only the proper things to do in case of a natural disaster: _____

Remember that it is always better to stay _____ and to avoid using the _____ .

The behaviours and attitudes to adopt in emergencies.

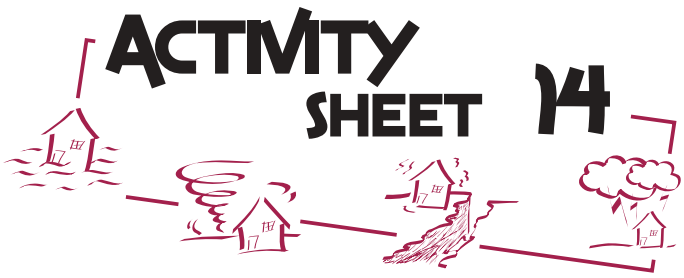
(Continued)

Part two

2. To know what you should do after a disaster, determine which of the following statements are true or false. Circle one of the two letters.

1.	After a flood, turn on the heating system immediately.	T F
2.	Listen to the radio station.	T F
3.	Keep the food in your refrigerator and freezer as not to waste.	T F
4.	Use the telephone to let someone know your condition.	T F
5.	Turn the lights on immediately.	T F
6.	Check for possible fire hazards.	T F
7.	Help injured people even if you're injured youself.	T F
8.	After an earthquake, return immediately into your house.	T F
9.	Take the elevator.	T F
10.	Remain where you are and protect yourself during aftershocks.	T F
11.	After an earthquake, use water from the water heater or the toilet bowl if necessary.	T F
12.	After a flood, drink tap water.	T F
13	After a flood, wash and then sterilize dishes.	T F
14.	Stay close to power lines.	T F
15.	When you evacuate, leave a note of your destination point on the table.	T F
16.	Take your time to evacuate the house.	T F
17.	Lock the doors of your home before leaving.	T F
18.	Use the routes designated by the authorities and avoid shortcuts.	T F
19.	Leave your emergency kit at home to have it when you return.	T F

Myth or fact?



Activity objective : This activity will help you to distinguish among the truths and myths of natural disasters.

1. Read each of the following statements. Connect each myth in the left column to the corresponding reality in the right hand column.

MYTH

a) If I'm in a car during a storm, I'm safe.

b) When lightning strikes people, it always kills.

c) People struck by lighting carry an electrical charge. Helping them can put you at risk.

d) If I'm in a shelter during an electrical storm, I'm protected from lightning.

e) Lightning only strikes during strong downpours.

f) During a storm, it is safe to use the phone or take a bath.

g) Carrying an umbrella does not increase my risk of being struck by lightning.

h) If a tornado strikes, open all windows so that the building you're in doesn't explode.

i) A car is a safe place to be during a tornado.

j) Tornadoes occur only in Springtime.

k) Tornadoes never strike down in cities.

l) It is safe to step out of the house in the "eye" of a hurricane.

REALITY

1. The "eye" of a hurricane is a moment of calm between two more intense moments. It is important to remain in shelter during this calm moment.

2. Although tornadoes primarily occur in wide open spaces, they can also hit cities.

3. Opening windows during a tornado lets strong winds enter the house and can increase the risk of damage.

4. A tornado can overturn cars and other objects in its path. If you are in a car during a tornado, get out and find shelter in a ditch or ravine, protecting your head with your arms.

5. Although tornadoes mainly occur between March and August, they can develop at any time during the year.

6. Lightning can strike even if there is no rain.

7. If a person is struck by lightning, give first aid as soon as possible. The person does not carry an electrical charge and can be handled safely.

8. During a storm, you should not use the phone or take a bath. Both conduct electricity and can cause electrocution.

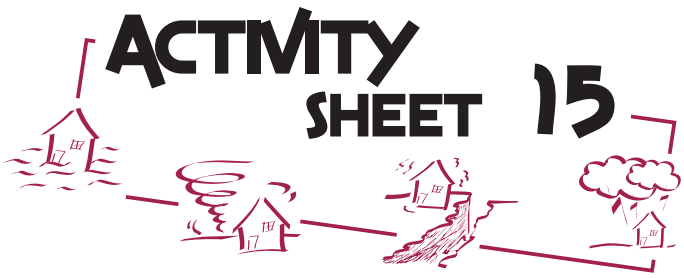
9. Lightning can injure or kill people from electrocution or by causing serious burns.

10. During a storm, a closed building provides shelter from lightning.

11. Avoid using an umbrella during a storm, as it may conduct electricity.

12. A car can provide safe shelter during an electrical storm so long as the windows are shut and you don't touch any metal.

My commitment in case of an emergency.



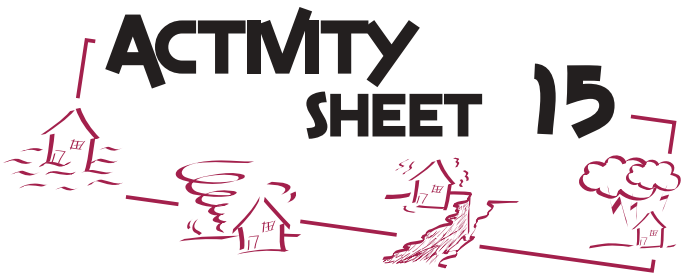
Activity objective : This activity will allow you to identify the responsibilities you can assume in case of an emergency that could occur at home.

Part one

1. **Write in the following table responsibilities that you could assume in case of an emergency.**

Responsibilities (obligations, duties, commitment)

My commitment in case of an emergency.
(Continued)



Part two

My commitment in case of an emergency.

I, _____ **,**

agree to assume the following responsibilities in case of an emergency:

_____

_____

_____

_____

_____

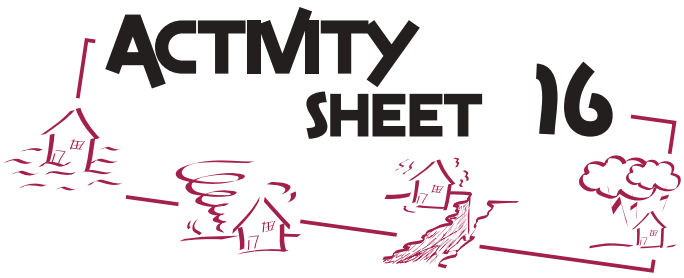
_____

Signed on _____ **in** _____

_____ _____

Student *Parent*

Organizing effective assistance.



Activity objective :

This activity will introduce you to various people called on to intervene when a natural disaster occurs, and allows you to learn about the planning and decision-making processes involved during and after the event.

1. Read the different roles above and discuss with your teacher and other students.

2. Choose the role you would like to play.

3. Research and take notes on the responsibilities of your role within an emergency hurricane situation.

Members of the Emergency Management Team

Mayor

You have been in office for only one month, and there is a category 4 hurricane about to hit your city.

City Emergency Manager

You are responsible for managing emergency response and for ensuring public welfare.

City Public Information Officer

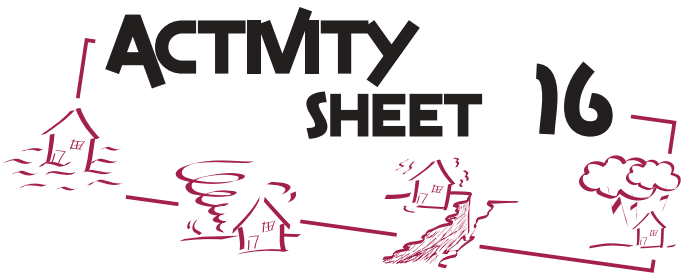
You are the spokesperson for the city. You deal directly with the media.

Public Works Officer

You are responsible for water, sewer, street, and park maintenance. Major thoroughfares are flooded and blocked with debris and the water is contaminated.

Organizing effective assistance.

(Continued)



Electric/Gas Company Officer

You are responsible for making sure your company fixes the power lines and broken gas main. Your company is responsible for turning the gas back on in residential neighbourhoods.

Phone Company Representative

You are responsible for the telephone network.

Fire Chief

Your personnel is responsible for fighting the several fires that are burning as a result of a broken gas main. Your personnel will also respond to any medical emergencies.

Police Captain

Your personnel is directing traffic during the evacuation process and providing security for evacuated areas.

Hospital Representative

Yours is the only hospital in town and your chief of staff is on vacation abroad.

Canadian Red Cross Representative

You are responsible for providing food, drinking water, and shelter for people who have been displaced from their home.

Citizens Advisory Committee Chairperson

You are responsible for representing the views, concerns, and needs of the citizens of the community.

Building Inspector

You are responsible for making sure people do not return to their homes and offices until the buildings are safe.

Humane Society Representative

You are responsible for helping many people with pets who choose to stay in shelters. Pets are not allowed in shelters.

Organizing effective assistance.

(Continued)

National Weather Service Representative

You are responsible for relaying the most current and accurate weather information.

Media Personnel

You are responsible for reporting accurate information about the storm and what the public should do before, during, and after the hurricane.

Questions

1 . This is a response and recovery operation. What needs to be done first?

2. What is each person responsible for doing before, during, and after the hurricane?

3. Can each person do his or her job with all the damage that has occurred?

4. Is it important that residents are able to get back to their homes or that residents have a safe place to stay?

5. Whom do you assist first: elderly people? injured people? people staying in shelters? stray animals?

6. Was the community properly prepared for the hurricane?

7. Did the communîty know what to do when the WATCH was issued and then when the WARNING was issued?

8. When do you know if it is safe to allow citizens to return to their homes? How long should you wait before beginning the cleanup process?

9. Does the community know what to be watchful for when going outside after the hurricane has passed?

10. What can the community do in the future to be better prepared for a hurricane?

For more information

Lightning storms and lightning bolts
Lightning storms are characterized by a lightning bolt followed by a lightning flash and thunder. Lightning bolts can break windows, set off a fire, cause a power failure and explosions when there is combustible material. They are dangerous and can cause serious burns or electrocute people.

Earthquakes
Earthquakes are sudden movements of the earth's crust. The tremors usually occur suddenly and leave very little time to react. Major earthquakes are often preceded by other weaker tremors.

Floods
Floods are the overflow of rivers and lakes caused by an excessive rise of the water level. This rise can be caused by heavy precipitation, sudden thawing of snow, ice jams or ice break-ups.

Snowstorms
Snowstorms are characterized by violent winds and heavy snowfalls.

Hail
Hail is precipitation consisting of ice particles that are formed during a storm.

Tornadoes
Tornadoes are whirlwinds shaped like a funnel that points towards the ground. They can destroy everything on their path. This type of phenomenon can uproot trees, turn cars over and tear the roofs off houses.

Forest fires
Most fires that destroy our forests are caused by human negligence such as campfires that are not properly put out or lit during dry periods. However, fires that occur naturally, such as those caused by lightning bolts, are more devastating and burn over larger areas.

Landslides
Landslides are movements of clay type soil saturated with water. These ground movements occur very rapidly and leave the population very little time to react.

Volcanoes
Volcanoes are mountains which erupt molten material (volcanic eruption).

Tidal waves
Tidal waves or tsunamis are huge sea waves that are caused by earthquakes, earth movements or underwater volcanic eruptions. These waves can reach up to 30 meters high and cause major damage to houses along the shores.

A few words about hazardous materials releases

Hazardous materials releases are incidents that involve an accidental spill or leak of hazardous chemical products that are dangerous to humans and the environment.

These hazardous products can contaminate the soil or water or be spread in the air. If they become airborne, they may or may not be visible as a toxic cloud. Sometimes, you can be able to smell or taste the hazardous product. Inhaling toxic fumes or drinking contaminated water can be hazardous to your health. The risk depends on the toxicity of the substance in question, its concentration and how long you're exposed to it.

In case of a hazardous materials release, the authorities may ask that you remain inside your home and use " Shelter-In-Place " techniques :

- Go inside your home and remain there;
- Close all windows and doors;
- Turn off all ventilation systems;
- Listen to the radio or watch television to be aware of the authorities' instructions.

Other sources of information

For more information on the subjects in this guide, here is a list of references:

- Canadian Red Cross;
- Local community health service;
- Local police and fire departments;
- Municipal, provincial and federal public security;
- Armed forces;
- Weather forecasting services;
- Community organizations;
- Etc.

Web sites :

- www.angelfire.com/on/predictions/
- www.colorado.edu/hazards
- www.disasterRelief.org/
- www.disasterwarning.com/
- www.ec.gc.ca/climate/index.html
- www.ec.gc.ca/water/
- www.eventbasedscience.com
- www.fema.gov/
- www.ifrc.org
- www.icic.org
- www.msp.gouv.qc.ca/jeunesse
- www.ncdc.noaa.gov/
- www.ns.ec.gc.ca/weather/hurricane/hurricanes_f.html
- www.nssl.noaa.gov/
- www.uwex.edu/ces/news//handbook.html
- www.prevention2000.org

To get prepared for emergencies

Nature's sudden mood swings can strike at any moment without warning. Prevention and preparation for such events can help us to better react and to limit the damage. The following steps are required to plan for the unexpected.

- Discuss the risk of disasters that could occur in your area.
- Learn about attitudes to adopt in case of an emergency.
- Prepare your home for disasters.
- Make an action plan with your parents:
  - Plan for safety measures in case of power failures or any other emergency;
  - Write down all emergency telephone numbers and keep this list close at hand;
  - Plan on two meeting places ahead of time in case an evacuation is necessary: one, close by, outside your home and easy to get to in case of a sudden emergency like a fire; another one outside your neighbourhood in case you cannot go back home;
  - Have each member of your family know the phone number of someone who lives out of town in case you get separated;
  - Learn to recognize the sound of a smoke detector;
  - Pratice the evacuation plan at home and the techniques to remain sheltered in your home in case of a hazardous materials release;
  - Learn to recognize emergency exits and smoke detectors at home, in school and in public places;
  - Never use the elevator in case of an emergency;
  - Plan other living quarters where you and your family could stay temporarily (friend, family, etc.).
- Prepare a survival kit, a first aid kit and a car emergency kit with your parents.
- Prepare food supplies to last 72 hours in case of an emergency.
- Take a Red Cross first aid course.

After the disaster

Even after the disaster, there is still an emergency. You must:

- Give first aid to injured people;
- Be sure to have your survival kit with you;
- Listen to the local radio station in case you are asked to evacuate.

If asked to evacuate, I am ready!

If I am asked to evacuate, I must not insist on staying in the house, but should instead leave immediately while taking care to:

- Bring along an emergency kit and a first aid kit;
- Wear proper clothing;
- Make sure my pets are safe;
- Leave a note on the table indicating the time I left the house and my destination;
- Lock all the doors while leaving.

Cooperate

- Listen carefully to the instructions given by the authorities and rescuers;
- Always follow the route which has been laid out for you;
- Go to the meeting place designated by the authorities;
- Observe what is around you and notify the authorities and people about anything that may seem abnormal or dangerous.

Returning home

When you return home, you must:

- Check the condition of the house to evaluate the damage;
- Use a flashlight to inspect the site: it may be hazardous to turn on the lights;
- Check the condition of your electrical appliances;
- Get in touch with specialists for any electrical, heating or gas problems;
- Drink bottled water until the authorities confirm that the tap water is safe to drink;
- Check the food in your refrigerator and freezer, throw away any doubtful perishable food;
- Use the phone only for emergencies: the work teams may still need the telephone circuits for a while.

The Red Cross: anywhere, anytime.

The Red Cross was founded in 1863 by Henry Dunant, a Swiss businessman who came to the aid of soldiers wounded at the Battle of Solferino in Italy. The emblem of the international organization, a red cross or crescent on a white background, was created to ensure protection for Red Cross workers, who maintain a neutral position on battlefields during armed conflict.

The international movement led to the creation of 178 national societies, including the Canadian Red Cross in 1896. The Canadian Red Cross is a non-profit humanitarian organization dedicated to serving Canadians and victims of conflicts and disasters worldwide. Its mission is to help people deal with situations that threaten: their survival and safety; their security and well-being; their human dignity in Canada and around the world. The Red Cross offers a broad range of international, emergency, first aid and water safety programs and services to millions of Canadians. Some of its programs are preventative, while others focus on health and emergency relief. All are offered through the volunteer participation and financial support of Canadians.

The Fundamental Principles of the International Federation of Red Cross and Red Crescent Societies.

Humanity
Emerging from its concern to provide first aid to the wounded on the battlefield without any discrimination, the International Federation of Red Cross and Red Crescent Societies, with its international and national facets, endeavours to prevent and reduce human suffering in all circumstances. It aims to protect the life and health of humans and to ensure their respect. It favours mutual understanding, friendship, co-operation and long-lasting peace between all nations.

Impartiality
It makes no distinction for nationality, race, religion, social status or political opinion. It is devoted solely to providing first aid that will measure up to the suffering of the people and to meet, by priority, the needs of the most urgent distress.

Neutrality
To acquire everyone's trust, the Federation does not take part in any of the hostilities, nor in any political, racial, religious or ideological controversy.

Independence
The Federation is independent, auxiliary to the authorities in their humanitarian activities and subject to the laws which govern their respective countries. The national societies must nevertheless keep their autonomy which always allows them to act according to the principles of the Federation.

Voluntary service
It is a voluntary care movement with no self-interest.

Unity
There may be only one Red Cross or Red Crescent Society in a same country. It must be open to everyone and extend its humanitarian action over the entire territory.

Universality
The International Federation of Red Cross and Red Crescent Societies, in which all the Societies have equal rights and the duty to help each other, is universal.

This text is adapted from fundamental principles proclaimed by the Red Cross XX International Conference in Vienna in 1965. Please note that the original text has been revised and included in the Statutes of the International Federation of Red Cross and Red Crescent Societies, adopted by the Red Cross XXV International Conference in Geneva in 1986.

In compliance with the law, use of the emblem and name of the Red Cross in Canada is reserved exclusively for the Canadian Red Cross Society and to the health care services of the armed forces (Law on the Geneva Conventions. L.R.C., 1985. chap. G-3).

Expect THE UNEXPECTED™

Canadian Red Cross