Be ready, be safe.





Facilitator's Guide For students aged 12-13

Be ready, be safe.

Section of the Emergency Preparedness Program for students aged 12-13

Facilitator's Guide



All rights to reproduce, translate and adapt, totally or in part, are reserved for all countries. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the Canadian Red Cross Society.

The Canadian Red Cross Society is registered as a Canadian charity organization under number 0017780-11. © The Canadian Red Cross Society, 250/04/2001. ISBN 1-55104-256-8

Canadian Red Cross National Office 170, Metcalfe Street, Suite 300 Ottawa, Ontario K2P 2P2 Telephone : (613) 740-1900 Fax : (613) 740-1911 Web Site : www.redcross.ca

Ce programme est aussi disponible en français.

Acknowledgements

The Canadian Red Cross wishes to express its gratitude to the volunteers and staff who participated closely or otherwise in developing this preparedness program.

The Canadian Red Cross wishes to thank more specifically the members of the teaching committee whose wise comments on the content and approach of the activity sheets contributed to developing a preparedness program that is adapted and original.

From the Laure-Conan high school in Chicoutimi (Quebec):

- Mr. Jean-Eudes Tremblay, Principal
- Mrs. Jacqueline Gagné, Grade 3 hign school teacher
- Mr. Mario Lemieux, Grade 3 high school teacher

The Society also wishes to highlight the contribution of the Canadian Armed Forces who authorized the use of some of their imaging software to illustrate the cover pages of this document.

The Canadian Red Cross also wishes to thank all who participated in the evaluation and revision - focus group, questionnaires, opinion polls - enabling us to produce this Canadian version of the preparedness program. Thanks to the City of Brandon (Manitoba) who allowed the use of the "Shelter-In-Place" concept.

Many thanks to the American Red Cross who authorized the adaptation of concepts and activities pertaining to its "Masters of Disaster™" program.

This program is made possible through the generous support of :



Table of contents

Introduction	. 5
• Be ready, be safe Program objectives Links to the study programs Tools Program evaluation.	.6 .6 .7
• General orientations Content Teaching approach	. 8
• Activities. Activity summary Provincial study programs Activity sheets	.9 11
More activities	34
• For more information	35
Annex 1 - History of the Red Cross	42
Annex 2 - Newspaper article	43
Annex 3 - Reminder	44
Annex 4 - Emergency Response and Recovery Scenario	45
Glossary	46
Bibliography	47

Introduction

The Canadian Red Cross plays an essential part in emergencies. It provides numerous services to people affected by disasters to fulfill part of 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 teach people how to act safely in case of unexpected events, the Canadian Red Cross has developed a preparedness program called "Expect the Unexpected.". It is intended for 7-8, 10-11 and 12-13 year old students, for parents as well as for teachers and Red Cross facilitators. The objective is to convey the knowledge and develop the attitudes and skills that will allow them to react efficiently in emergencies.

This preparedness program consists of three sections, each intended for a specific group of students. Thus, the section "It can happen, be ready." is intended for 7-8 year old students. The section "Facing the unexpected, be prepared." is intended for 10-11 year old students. The section "Be ready, be safe." is intended for 12-13 year old students.

This facilitator's guide is intended for teachers and Red Cross facilitators who are called upon to give the course to 12-13 year old students. It is part of a set of teaching and communication tools produced for the preparedness program.

This guide is divided into four parts. The first part describes the overall preparedness program. The second part describes the content and preferred teaching approach. The third part presents the activities corresponding to the sheets from the student activity booklet, whereas the fourth part provides additional information that will be useful in implementing this program.

Canadian Red Cross

BE READY, BE SAFE.



This section of the preparedness program intended for 12-13 year old students, is designed to provide them with what is required to face unexpected situations that could occur in their daily life.

More specifically, the students get to:

- Know the natural disasters that could occur in their community and in the world;
- Know which disaster caused accidentally by humans could occur in their community;
- Undestand the link between disasters and climate change;
- Know some of the actions to take to be better prepared for emergencies;
- Know the attitudes and behaviours to adopt in emergencies;
- Know some of the actions to take after an emergency;
- Know the school evacuation plan;
- Realize the importance of their role in case of an emergency.



Teachers must teach several programs from the Ministry of Education and must take into consideration a great number of teaching objectives. This preparedness program is linked to the contents and objectives of some of these programs. It complements class teaching and learning activities. For instance, this third section of the preparedness program achieves some of the objectives of the Social Studies, Science and Technology and Health and Physical Education curriculums.

The table on pages 11 and 12 presents objectives that can be reached through the activities of the preparedness program. Teachers and Red Cross facilitators will be able to read it using the following codes :

- Health and Physical Education (H.P.S.)
- Social Studies (S.S.)
- For Québec : Cross-Curricular Competencies (C.C.C.), Areas of Lifelong Learning (A.L.L.), Geography, History and Citizenship Education (G.H.C.E.) and Moral Education (M.E.)
- Science and Technology (S.T.)



This section of the preparedness program includes six types of teaching and communication tools:

• Activity booklet

This booklet is intended for students to facilitate learning and the development of attitudes and skills by reading information, recording observations from research results, answering questions, playing games, etc. It is a reference tool for the students and allows parents to accompany their child in his or her learning experience.

It was designed as a set of activities from which the teacher or Red Cross facilitator can choose those that are best suited to their group of students. These activities can be carried out on theme days or half days or can also be integrated in the daily planning. They can be linked to other activities or be done independently.

Complementary brochure

This brochure is intended for parents as a reference tool or reminder. It helps the students to consolidate what they have learned in class. It includes suggested activities for home

• Facilitator's Guide

This guide is intended for teachers and Red Cross facilitators. It provides information to help students learn and properly use the various teaching and communication tools used in the preparedness program.

The guide includes activity sheet answers that allows the teacher or Red Cross facilitator to correct the students' answers. They can make transparencies from the activity sheets in the students booklet and review the answers with the class.

The Facilitator's Guide includes four transparencies that can be used as teaching tools for situations during certain activities presented in the activity booklet. They stimulate curiosity and interest, facilitate questions and group discussions.

• Poster

The poster can be placed on school walls. It will make the students aware of the need to get prepared for emergency situations. It can also be used as the attention grabber to introduce activities of the preparedness program.

• Videotape

The videotape is used as the attention grabber to introduce activities of the preparedness program. It will arouse curiosity, stir up interest and will stimulate group questions, discussions.

• Certificate of participation

Teachers and Red Cross facilitators fill out this certificate and give one to each student when all activities of this section of the preparedness program are carried through,



An evaluation form will be provided by the Red Cross in order to collect teachers' and facilitators' comments on the program. The students opinions could also be obtained by inviting them to write a letter to the Red Cross.

General orientations



Throughout the entire preparedness program, the content is studied progressively so as to suit the levels of the various student groups. Thus, the 7-8 and 10-11 year old students are faced with unexpected situations that are simple and of a local nature. The 12-13 year old students must deal with more complex and international situations

For the 12-13 year old students, the activities cover the following topics:

Red Cross - risk - climate change - natural disaster - earthquake - tornado - lightning storm - flood - hazardous materials release - preparation - emergency kit - first aid kit - emergency - emergency calls - evacuation - evacuation plan - attitude - behaviour - commitment.

Thus, on becoming more familiar with natural disasters and other kinds of disasters in Canada and throughout the world, the students learn the preparations required to be able to react efficiently in emergencies. They study the attitudes and behaviours to adopt during and after emergencies, as well as the emotions experienced after the event. Finally, they identify the roles and responsabilities to take on in case of emergencies at home and they learn about the decision-making process during a disaster.



For each activity

Each activity linked to the third section of the preparedness program is designed according to the three steps of the teaching approach: situations, research and objectivation.

Situations



In this first step, the students will become familiar with the content and teaching objectives linked to the activity. The teacher will make the content meaningful by linking it to their experience and prior knowledge.

• Research

In the second step, the students will learn the contents of the activity using diversified and adapted teaching strategies. They collect data, organize and record information.

Objectivation



In this last step, students recap the activity. They summarize what they have learned, compare it to their initial understanding and evaluate their degree of success.

In each section

Each section of the preparedness program features three types of activities that correspond to the three steps of the teaching approach, focusing on situations identified by a question mark, research identified by a magnifying glass and a summary identified by a puzzle.





Sheet	Type of activity	Objective	Mean	Method	Intellectual and technical skills	Dura- tion
1	Ŷ	Know the fundamental principles of the Red Cross.	Discussion.	By teams of three or four.	Identifying and establishing relationships.	
2	?	Identify a few natural disasters and give their effects on personal safety.	Introductory videotape / questionnaire.	In pairs.	Identifying and establishing relationships.	70 Color
3	Ŷ?	Understand what causes earthquakes.	Experiment.	In pairs.	Identifying, establishing relationships and summarizing.	
4	?	Understand what causes tornadoes.	Experiment.	In pairs.	ldentifying, establishing relationships and summarizing.	80 Contractions
5	Ŷ?	Understand what causes floods.	Experiment.	In pairs.	Identifying, establishing relationships and summarizing.	70 MINUTES
6	?	Understand what causes lighting.	Experiment.	In pairs.	ldentifying, establishing relationships and summarizing.	65 COL
7	A	Describe natural disasters throughout the world.	Research.	In pairs.	Identifying and establishing relationships.	20 MINUTES AND MORE
8	A	Explain the link between climate change and natural disasters.	Newspaper article analysis.	In pairs.	Identifying and establishing relationships.	60 COL
9	P	Describe other kinds of disasters in Canada.	Research.	In pairs.	Identifying and establishing relationships.	20 Contraction of the second s

Sheet	Type of activity	Objective	Mean	Method	Intellectual and technical skills	Dura- tion
10	A	Become familiar with the contents of an emergency kit and first aid interventions.	Research/ reminder questions.	In pairs.	Identifying and establishing relations.	30 AMINUTES
11	P	Identify potential hazards in the bedroom.	Checking list to complete.	Individual.	Identifying.	30 A
12	Þ	Become familiar with the school evacuation plan.	Analyzing the plan and research questions.	In pairs.	Identifying, establishing relationships and summarizing.	
13	R	Describe the behaviours and attitudes to adopt during and after a natural disaster.	Situations, charts to fill in with true or false.	In pairs.	Identifying, establishing relationships and summarizing.	GO COL
14	J.	Distinguish between myths and realities related to behaviours to adopt during natural disasters.	Association game.	In pairs.	Establishing relationships.	40 COL
15		Identify the roles and respon- sibilities to assume in case of emergencies at home.	Writing up a commitment plan.	In groups of four and individual.	Identifying, establishing relationships and summarizing.	
16	P	Learn about the decision-making process during a disaster.	Simulation.	In pairs.	Establishing relationships and summarizing.	

-								
	Prince Edward Island, Nova Scotia, New Brunswick, Newfoundland, Labrador	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Colombia	NWT
Activity 1 The Red Cross : anywhere, anytime.	H.P.S. Grade 7, Safety and Ervi- ronmental Health S.S. Grade 9, Interdependance	C.C.C.: Intellectual, methodological, personal and social, commu- nication and social, commu- hication and well- being, social relationship M.E.: Relationships	S.S. Grade 9, Individual and Family Living	H.P.S., Security, Grade 7 H.P.E., Personal and Social Management, Grade 8	H.P.E., Grade 9, Levels A Mark B S.S., Grade 8, Unit 4 - Inter- dependance	H.P.E., Grades 7 and 8. Risk Management	H.P.E., Personal Development, Safety and Injury Prevention, Grades 8 and 9	H.P.S., Safety and First Aid, Grades 7, 8 and 9
Activity 2 To know more about natural disasters	S.S., Grade 9, People, Place, and Environment S.T., Grade 9, Earth and Space Science H.P.S. Grade 7, Safety and Envi- ronmental Health	C.C.C.: Intellectual, meth- octogical, communication social, communication A.L.L.: Health and well- deing, social relationship G.H.C.E.: Landforms, G.H.C.E.: Landforms, events events S.T.: Weather, earth science	Geography, Grades 7 and 8. The Themes of Geographic Inquity, S.T., Grade 7, Life Systems S.T., Grades 7 and 8, Earth ans Space System	S.T., Grade 7, Unit 4 -The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	S.T. Grade 7, Saskat- chewan - The Environment of S.T. Grade 8, The Early's Crust, Adaptation and Suc- cession S.S. Grade 7, Localisation, Ressources, Change	I.G., Grade 8, History and Geography in the lestern Hemisphere -1., Grade 8, Interac- ions and Environment -1. Grade 9, Environ- nental Quality	S.T., Grade 8, Life Science (Global Eco- systems)	H.P.S., Safety and First Aid, Grades 7, 8 and 9
Activity 3 What is an earthquake?	 S.S., Grade 9, People, Place, and Environment S.T., Grade 9, Earth and Space Science 	C.C.C.: Intellectual, per- sonal and social, communi- cation A.LL.: Environment, social telationship e.A.C.E.: Landforms, key events S.I.: Earth science	Geography, Grades 7 and 8, The Themes of Geo- graphic Inquiry 5.1., Grade 7, Life Systems 5.1., Grades 7 and 8, Earth ans Space System	S.T., Grade 7, Unit 4 -The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	3.1. Grade 7, Saskat- sample and the Environment S.1. Grade 8, The Environment S.1. Grade 8, The Environment Crust, Adaptation and Suc- Sasion S.S. Grade 7, Localisation, S Ressources, Change	.T., Grade 8, The arth's Crust .T., Grade 8, Interac- ons and Environment .T. Grade 9, Environ- nental Quality	S.T., Grade 8, Life Science (Global Eco- systems)	
Activity 4 What is a tornado?	 S., Grade 9, People, Place, and Environment S.T., Grade 9, Earth and Space Science 	C.C.C.: Intellectual, per- sonal and social, communi- cation A.L.L.: Environment, social etaionship G.H.C.E.: Landforms, cli- mate, key events S.T.: Weather	Geography, Grades 7 and 8, The Themes of Geo- graphic Inquiry 5.1., Grade 7, Life Systems 5.1., Grades 7 and 8, Earth ans Space System	S.T., Grade 7, Unit 4 -The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	S.T. Grade 7, Saskatch- ewan - The Environment S.T. Grade 8, The Eath's Crast, Adaptation and Suc- cession S.S., Grade 7, Localisation, Ressources, Change	 Grade 8, Interactions and Environment S.T. Grade 9, Environ- mental Quality 	S.T., Grade 8, Life Science (Global Eco- systems)	
Activity 5 What is a flood?	S.S., Grade 9, People, Place, and Environment S.T., Grade 9, Earth and Space Science	ē, ģ	Geography, Grades 7 and 8, The Themes of Geo- graphic Inquity S.T., Grade 7, Life Systems S.T., Grades 7 and 8, Earth ans Space System	S.T., Grade 7, Unit 4 The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	8.1. Grade 7, Saskat- hewar - The Faviorment S.1. Grade 8, The Environment S.1. Grade 8, The Environment Cession Cession S.S. Grade 7, Localisation, S.S. Grade 7, Localis	8.1. Grade 7, Evidence of Erosion 8.1. Grade 8, Interac- lions and Environment 8.1. Grade 9, Environ- mental Quality	s.T., Grade 8, Life Science (Global Eco- systems)	
Activity 6 What is lightning?	S.S., Grade 9, People, Place, and Environment S.T., Grade 9, Earth and Space Science		Geography, Grades 7 and 8, The Themes of Geo- graphic Inquiry S.T., Grade 7, Life Systems S.T., Grades 7 and 8, Earth ans Space System	S.T., Grade 7, Unit 4 -The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	 Grade 7, Saskat- chewan - The Environ- ment Crust, Adaptation and Suc- crust, Adaptation and Suc- Sasion Sas, Grade 7, Localisation, Ressources, Change 	8.1., Grade 8, Interac- tions and Environment 8.1. Grade 9, Environ- mental Quality	S.T., Grade 8, Life Science (Global Eco- systems)	
Activity 7 Natural disasters throughout the world	S.S., Grade 9, People, Place, and Environment S.T., Grade 9, Earth and Space Science	octo:: initelectual, meth- octological, personal and social, communication social, communication relationship G.H.C.E.: Landforms, cli- G.H.C.E.: Landforms, cli- diale, hydrography, key events S.T.: Weather, earth science	Geography, Grades 7 and 8, The Themres of Geographic Inquiry S.T., Grades 7, Life Systems S.T., Grades 7 and 8, Earth ans Space System	S.T., Grade 7, Unit 4 -The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	 S.T. Grade 7, Saskat- chewan - The Environment S.T. Grade 8, The Earth' Crust, Adaptation and Suc- cession S.S., Grade 7, Localisation, Resources, Change 	s.T., Grade 8, Interac- ions and Environment 5.T. Grade 9, Environ- mental Quality mental Quality	s.T., Grade 8, Life Science (Global Eco- systems)	
Activity 8 Climate change and natural disasters	S.S., Grade 9, Interdependance, People, Place, and Environment S.T., Grade 9, Earth and Space Science	C.C.C.: Intellectual, per- cardion asocial, communi- cardion relut.: Environment, social relationship G.H.C.E.: Landrorms, cli- den, hydrography, key events S.T.: Weather M.E.: Responsibility, interde- pendance	Geography, Grades 7 and 8. The Thermas of Geography of Canada, Grade 9, Human-Environ- ment Interactions, Clobal Connections, Understanding and Managing Change	S.T., Grade 7, Unit 4 -The Earth's Crust S.T., Grade 8, Unit 4 - Water Systems on Earth	ch. Farde 7, sastar- ch. Farden - The Environment S.T. Grade 8, The Earth's Cast, Adaptation and Suc- cession S.S., Grade 7, Localisation, S.S., Grade 7, Localisation, Ressources, Change	i.T., Grade 8, Interac- ions and Environment S.T. Grade 9, Environ- mental Quality	8.1., Grade 8, Life Science (Global Eco- systems)	

Objectives of the Provincial Ministry of Education study programs

Objectives of the Provincial Ministry of Education study programs

The Red Cross: anywhere, anytime.





By looking up key terms in a dictionary, students learn about the fundamental principles of the Red Cross.



- 1. Ask students if they are familiar with the Red Cross. Ask them where they have come into contact with the organization (babysitting course, first aid course, water safety course, etc.).
- 2. Ask them if they know about the origins of the Red Cross emblem and the history of the organization. Invite them to talk about what they know. Complete their comments with information from Annex 1 of the Facilitator's Guide.
- 3. Tell students that the Red Cross is an international movement that helps people worldwide. This assistance is not offered in an arbitrary manner. It is guided by seven rules or principles.
- 4. Ask students to pair up. As a class, read the instructions on Activity Sheet 1. Ask the teams to look up the definition of the seven fundamental principles of the Red Cross in the dictionary and complete the activity sheet.
- 5. As a class, review the students' answers. Ask them to define, in their own words, the seven fundamental principles of the Red Cross and discuss how these principles are integrated in the activities of the Red Cross.
- 6. Mention to the students that this preparedness program was prepared by the Red Cross as part of its prevention activities.
- 7. Answer any questions the students may have



(See pages 11 and 12)

Social Studies/M.E. Health and Physical Education



- Sheet 1 from the activity booklet.
- Annex 1, History of the Red Cross

Answer key

	anywhere	/ ····ie,	et Es	SHEET	1947
[Activity objective :	This activity lets you principles of the Re them in your daily o	l learn about the sever d Cross and think about ctivities.	fundamental It how you can ap	oly
	Impartiality				
1	Neutrality ndependence	/ariou	s ansv	/ers	-
Vi	pluntary service				
_	ersality				

To know more about natural disasters.







Using a videotape and information, the students answer questions on the most common natural disasters that occur in their province and in Canada.

Method suggested

- 1. After having viewed the videotape, ask students for their comments and questions pertaining to the content. To stimulate the discussion, ask them the following questions:
 - What is the objective of this research?
 - What information does research on the Internet provide on natural disasters:
 - In the world?
 - In Canada?
 - In their province?
 - Who are they meeting?
 - What are the discussion topics? Ask them to name the types of natural disasters that may occur in their province and in Canada.
- 2. Ask students to get together in pairs and to fill out sheet 2 by answering the questions on the information text.
- 3. Once the sheet has been filled out, review together each question by asking students to summarize what they have written. Ask them if these natural disasters have ever happened in their province.
- 4. Answer any questions the students may have.



(See pages 11 and 12)

Social Studies/G.H.C.E. Science and Technology Geography Health and Physical Education



- Sheet 2 of the activity booklet.
- Videotape.

Answer kev

Following page.

To know more about natural disasters.

Natural disaster chosen: Earthquake

企口

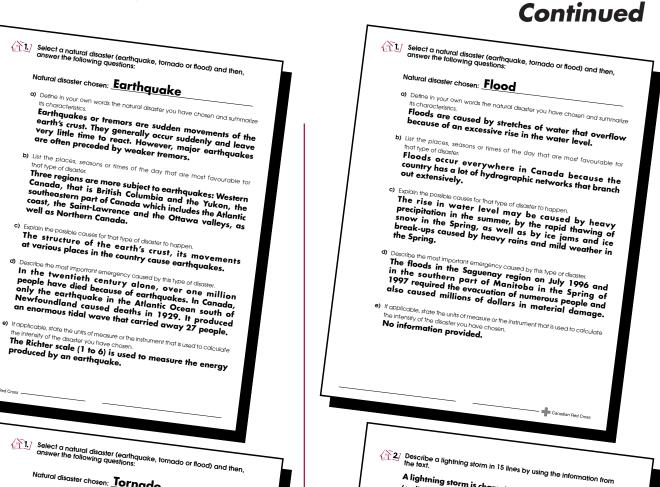
c) Explain the pa

d) r

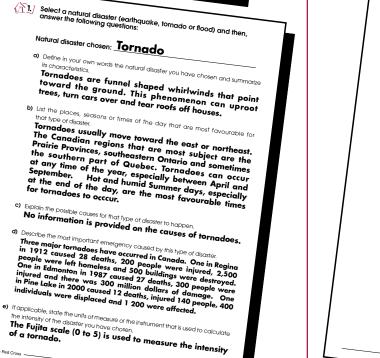
Ganna

Red Cross





A lightning storm is characterized by an electrical discharge (or lightning bolt) with a lightning flash and thunder. This electrical discharge can reach 100 millions volts and a temperature of 30,000 °C. To calculate the distance that separates you from the lightning bolt, count the number of seconds between the moment you see the lightning flash and the moment you hear the thunder. By dividing the number by 3, you get the distance in kilometers. A lightning storm usually occurs at the end of the day when it is hot and humid. Air currents that produce lightning storms create humidity and separate the electrical charges one from another. Then, the discharge occurs to produce a lightning flash and a lightning bolt.



Canadian Red Cross

Canadia

What is an earthquake?





Students perform a simple experiment to learn more about earthquakes.



- 1. Ask students what they know about earthquakes. Ask them what they know about the causes of this natural phenomenon.
- 2. Ask students to pair up and do the experiment described on sheet 3 of the activity booklet.
- 3. Ask them to read the activity sheet and collect the material needed for the experiment.
- As a class, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.
- 5. Summarize the main points raised by the students. Answer any questions they may have.



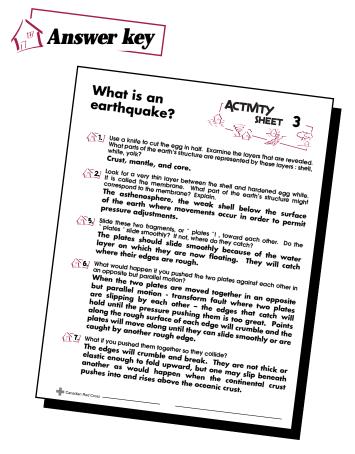
(See pages 11 and 12)

Social Studies/G.H.C.E. Science and Technology Geography



- Sheet 3 of the activity booklet.
- Material for the experiment: eyedropper, small glass of water, knife, hard-boiled egg, small bowl for discarded egg pieces.

This activity is adapted from " Earth as an Egg ", American Red Cross " Masters of Disaster™ " program.



What is a tornado?





Students perform a simple experiment to learn more about tornadoes.



- 1. Ask students what they know about tornadoes. Ask them what they know about the causes of this natural phenomenon.
- 2. Ask students to pair up and perform the experiment described on sheet 4 of the activity booklet.
- 3. Ask them to read the activity sheet and collect the material needed for the experiment.
- As a class, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.
- 5. Summarize the main points raised by the students. Answer any questions they may have.



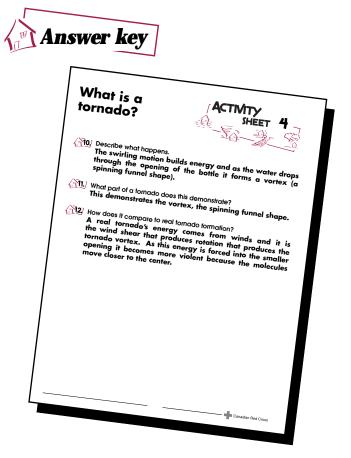
(See pages 11 and 12)

Social Studies/G.H.C.E. Science and Technology Geography



- Sheet 4 of the activity booklet.
- Material for the experiment: two 2-liter soda bottles with caps, hammer and 5 or 7 cm nail, cissors, balloon, food coloring, about 2 liters of water.

This activity is adapted from "Tornado in a bottle", American Red Cross "Masters of Disaster™" program.



What is a flood?





Students perform a simple experiment to learn more about floods.



- 1. Ask students what they know about floods. Ask them what they know about the causes of this natural phenomenon.
- 2. Ask students to pair up and perform the experiment described on sheet 5 of the activity booklet.
- 3. Ask them to read the activity sheet and collect the material needed for the experiment.
- As a class, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.
- 5. Summarize the main points raised by the students. Answer any questions they may have.

Links to the study programs

(See pages 11 and 12)

Social Studies/G.H.C.E. Science and Technology Geography



- Sheet 5 of the activity booklet.
- Material for the experiment: 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.

This activity is adapted from "You're the Hydrologist", American Red Cross "Masters of Disaster™".



Following page.

What is a flood?



(156) What happens to the streams and streambeds when the soil reaches its saturated point?

(18) What areas of the simulated landscape would be the floodplain? Why? Those areas in which the rising waters begin to accumulate. Usually these areas are low-lying and

Where would be the satest place to build? Why? On high ground farther from the streams and riverbeds so that the rising water cannot reach the

What is a flood?

企び Where does the runoff go on the stream table? It floods across the landscape.

near the streams and riverbeds.

Low-lying areas in the floodplains.

(10) Where would be the safest place to build? Why?

A 9 What areas accumulate runoff water?

What is a flood? / ACTIVITY SHEET 5 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 Indescape to create a town. Fill the system fable to simulate steady rain. What happens when the water infilterates the soil. $-i\sum$ After a few minutes, increase the opening on the nozzles of the spray bottles and pour a larger amount of water onto the landscape. Does the water infiltrate the soil? Why? Yes, because the air in the soil is replaced by water (14) Would different soils have slowed or quickened the flooding Processy Why? Yes. Water infiltrates different types of soil at different speeds. Some soils will speed up the flooding process; others will allow time for the trade to she soil and output the she do dies water to infiltrate the soil and even stop the flooding What happens if any type of soil reaches its saturation point? Water runs off the soil and floods rivers and Canadian Red Cross

Continued

50

SHEET 5

-65

Canadian Red Cros

ACTIVITY

Canadian Red Cross

What is lightning?





Students perform a simple experiment to learn more about lightning.



- 1. Ask students what they know about storms and lightning. Ask them what they know about the causes of this natural phenomenon.
- 2. Ask students to pair up and perform the experiment described on sheet 6 of the activity booklet.
- 3. Ask them to read the activity sheet and collect the material needed for the experiment.
- 4. As a class, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.
- 5. Summarize the main points raised by the students. Answer any questions they may have.



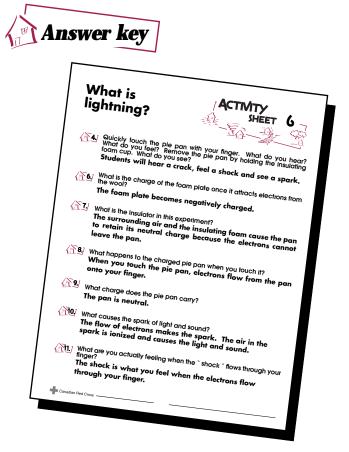
(See pages 11 and 12)

Social Studies/G.H.C.E Science and Technology Geography



- Sheet 6 of the activity booklet.
- Material required: foam dinner plate, wool cloth, disposable aluminum pie pan, foam cup, masking tape.

This activity is adapted from "You're the Scientist : The Charge Carrier", American Red Cross "Masters of Disaster™" program.



Natural disasters throughout the world.





Students look through newspapers and other media for reports of natural disasters throughout the world.



- 1. Ask students if Canada is the only country that has experienced natural disasters. Have a discussion with them to demonstrate what they know.
- 2. Assign students to pair up and scan newspapers, magazines or Internet sites for reports about natural disasters that have occurred in the world.
- 3. After they have found an article, ask them to read it and analyze it using sheet 7 of the activity booklet.
- 4. Invite the teams to share the results of their research and analysis. Ask each team to choose a spokesperson to report its findings.
- 5. Summarize the main points raised by the students. Answer any questions they may have.



Social Studies/G.H.C.E. Science and Technology Geography



• Sheet 7 of the activity booklet.

HEET 7
ng the following
ng the following
e renowing
_
5
on human
S

Climate change and natural disasters.





Students read and analyze a newspaper article to learn about the connection between climate change and natural disasters.



- Read the title of the newspaper article in Annex 2 to students and ask them to respond. Ask them to explain the concepts "climate change" and "greenhouse effect".
- 2. Ask students to pair up. Give each team a copy of the newspaper article included in Annex 2.
- 3. Ask students to read and analyze the newspaper article and complete the analysis report form on sheet 8 of the activity booklet.
- 4. Invite all teams to share their findings. Ask each team to choose a spokesperson to report the information noted on the analysis report form.
- 5. Summarize the information provided by the students. Answer any questions the students may have.

(See pages 11 and 12)

Social Studies/G.H.C.E./M.E. Science and Technology Geography/Geography of Canada



- Newspaper article in Annex 2.
- Sheet 8 of the activity booklet.



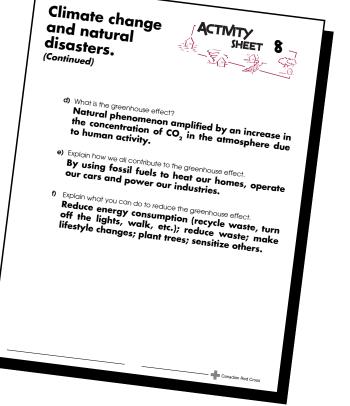
Following page.

Climate change and natural disasters.



Continued

I	Climate change ACTMTY
L	and natural
	disasters.
	37 J
	(1) Read the article handed out by your teacher and answer the following
	a sub by your teacher and answer the form
	 a) How much is the average temperature on the planet expected to increase over the next century? An average increase of 1.5 to 6.1
	An average in average temperature on the planet of
	An average increase of 1.5 to 6 degrees Celsius is
	b) the manual sector of the se
	mainless
	Coastal regions
	of islands, floods ligher tides, disand
	Coastal regions: higher tides, disappearance of islands, floods, landslides, tropical storms, Continental regions: drougles, and
	of wilder regions: drow l
	Continental regions: drought, heat waves, risk groundwater, water sumply of waterwave, risk
	of wildfire, drying up of waterways and groundwater, water supply problems, desertification, famine.
	c) In your opinion, why will poorer countries be the hardest hit? The poorer countries will be hardest hit? their populations of the hardest hit?
	The ponorer countries be the hardest hit? The poorer countries will be hardest hit? their populations already have a low standard of living and difficulty satisfying their hardest limited
	of live direct i acol nit he
	needs, specifically because of droughts, famine, limited access to land, overpopulation,
	indified access to land of droughts family because of droughts family
	limited access to land, overpopulation, etc.
	erc.
ân	Red Cross
an	Red Cross



Other kinds of disasters in Canada.





Students scan newspapers and other media for articles about other kinds of disasters in Canada.



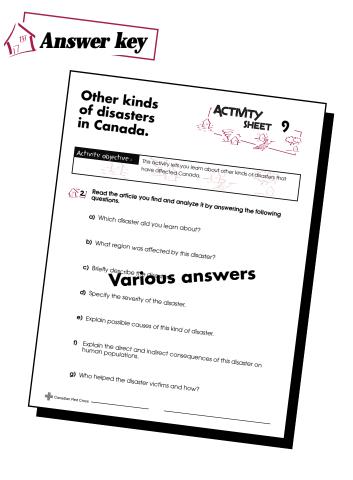
- 1. Ask students if they know of any disasters that have affected Canada that are not of natural origin. Encourage them to talk about what they know.
- Ask students to pair up and scan newspapers, magazines or Internet sites for reports about other kinds of disasters that have occurred in Canada.
- 3. After they have chosen an article, ask them to read and analyze it, filling out the analysis report form on sheet 9 of the activity booklet.
- 4. As a class, invite all teams to share their findings and analysis. Ask each group to choose a spokesperson to present the information entered in the analysis report form.
- 5. Summarize the main points raised by the students. Answer any questions they may have.

(See pages 11 and 12)

Social Studies/G.H.C.E. Science and Technology Geography/Geography of Canada



• Sheet 9 of the activity booklet.



To be ready for an emergency.





Using the reminder list and the research questions, the students learn how to get prepared for an emergency (emergency and first aid kits).



- Ask students to pair up. Ask them which objects they should have on hand and the preventive measures needed to intervene in an emergency. Write down their answers on the board. Ask them if they have ever done one of these preparations.
- 2. Ask them to fill out sheet 10 to find out more about the preparation of an emergency kit and first aid measures.
- 3. Once the sheet is filled out, review their answers together. This is when it may be useful to bring an emergency kit and a Red Cross first aid kit in class.
- 4. Suggest that the students research to support their answers on first aid interventions.



Social Studies/M.E. Health and Physical Education



- Sheet 10 of the activity booklet.
- First aid manual "Vital Link " (optionnal).



Following page.

To be ACTIVITY) ready for an emergency. Continued To be ready To be ready ACTIVITY ACTIVITY for an for an emergency. emergency. SHEET 10 SHEET 10 Activity objective : This activity will teach how to prepare in order to react efficiently in created on Breenency Various items Canned food (vegetables, truit, stews, beans, etc.). Miscellaneous Keys (house, car) Bread A natural disaster often occurs unexpectedly. To react property, it is essential that some of your luggage be ready. Soft drinks Flashlight and spare batteries ľ Fruits and vegetables I 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. Glasses Drinking water Dishes Condiments (ketchup, mayonnaise, Music cassettes C Cake Candles and matches M Jam, honey, peanut butter, etc. Money M Camp stove with fuel P Clothing P Milk products (cheese, milk, etc.) Shampoo Ň Whistle Pudding (a delight for children) V Facecloth and towel И Socks (cotton, wool) Portable radio Hair dye Manual can-opener and bottle opener Hat V Hair brush Books Underwear Vegetable oil Make-up М Dress or skirt Seasoning (pepper, salt, spices, etc.) Red Cross first aidkit V A A A Deodorant Back-pack Medication Shoes Meat and fish Important documents (identification and personal documents) Fruit juice Ì Pants Toothbrush Pasta Sweaters (wool, heavy cotton) Games Y Toothpaste U Y Y Hot drinks (coffee, tea, etc.) Jackets (raincoat, coat) Heavy blanket Hairspray Sneakers/runners V Body soap Nutrition bars \Box Jewellery Hand and body cream Γ Perfume TV Feminine care products N.B. These lists of objects are not exhaustive. - Ce adian Red Cros Canadian Red o To be ready To be ready ACTIVITY for an emergency for an emergency. (Continued) SHEET 10 SHEET 10 (2) When answering the following questions, evaluate your aptitude <u> </u> 玉谷 3.3 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. 90 % of accidents can be avoided with a minimum of prevention. The first step to follow on the site of an accident is to ensure my own safety. TRUE FALSE If I am witness to an accident, it is my clvic cluty to stop and help. a) Emergency To ease the pain, I can apply butter or petroleum Jelly to a burn. 9-1-1 or b) Fire station 5. In case of polsoning, I must ask the victim to drink milk c) Police station 6. To stop a nose bleed, I must tilt the head back. d) Ambulance In case of a fracture, I must reposition the limb in its natural position e) Mother at work I must remove shards of glass lodged in a wound. ² Marious answers It is important to find cofton swabs, peroxide and merchurochrome in a first aid kit. g) Another adult (relative, neighbour) The molority of deaths after a heart attack occur in the two hours following the appearance of the first symptoms. h) Local community health service 11. I must burst a blister to ease the pain. 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. i) Family doctor You obtained nine to twelve good answers. Bravol Any injured person would be in good hands with you. But for added confidence, why not follow a first aid course? 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. My name is see I am at see My telephone number You obtained five to eight good answers. You demonstrate a certain aptitude to help. But enrolling in a first aid course could be beneficial. You obtained ane to four good answers. Emergency 9111 You should immediately enroll in a first aid course. 3) your teacher or facilitator. My name is I am at My telephone number is This event has just occurred: I need help to Could you repeat the message? Do you need any other information? Do you have a first aid kit at home? Would you know how to use the material it cantains? To get a Red Cross first aid kit or to register for a first aid course, contact your local branch of the Red Cross. Canadian Red Cross Canadian Red Cr Canadian Red Cross 26

Risk analysis.





Students use a list of items to identify potential hazards in their bedrooms.



- 1. Ask students in which room of the house they spend the most time. Ask them if their bedroom is safe.
- 2. As a class, read the instructions on sheet 11. Ask students to complete the sheet at home.
- As a class, review the completed activity sheets. Discuss the "safest room" and the "least safe room". What changes can be made to increase safety? Remind students of the safety rules for limiting risks and hazards in a bedroom.
- 4. Discuss the risks in other rooms of the house and disasters that could occur in their community.
- 5. Answer any questions the students may have.

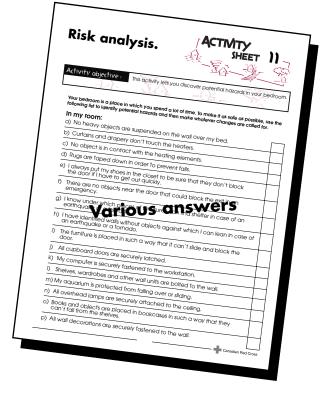
(See pages 11 and 12)

Health and Physical Education Moral Education



• Sheet 11 of the activity booklet.





Your school evacuation plan.





Using the school evacuation plan, the students get to know the instructions and the route to follow to exit the school in case of an emergency.



- Ask students to pair up. Ask them if they have ever had to leave the classroom and the school quickly and under what circumstances: when did it occur, what was the reason, how did the teachers and the students react, how did they return to class, etc. Remind them of the circumstances under which they could have to evacuate the school: fire, hazardous materials release, flood, bomb scare, violent act, etc.
- Suggest that they fill out sheet 12 to become familiar with the evacuation plan of their school. Give each student a plan of the school and ask them to locate the emergency exits, the fire extinguishers and other emergency material. Using various starting points such as the classroom, cafeteria, gymnasium and other, ask them to identify the various routes to exit their school.
- Once the sheet is filled out, check the students' answers together. Identify the meeting place for the class outside the school. Practice the school evacuation plan. Comment and give feedback to the students. Suggest that they carry out the same exercise at home to contribute to the safety of their family.
- 4. Answer any questions the students may have.



Social Studies/M.E. Health and Physical Education



- Sheet 12 of the activity booklet.
- Photocopies of the school plan for each student.
- Annex 3, complementary information

<image><form><form><form><form>

Canadian Red Cross

The behaviours and attitudes to adopt in emergencies.





Using situations listed on the activity sheet, the students must describe the behaviours and attitudes to adopt during and after a natural disaster.



- 1- Ask students to get together in groups of four. Ask them to think about the behaviours and attitudes to adopt during a natural disaster.
- 2. Suggest that they fill out Part one of sheet 13 to find out more about these behaviours and attitudes. Ask them to read the situations and to choose one that presents the best behaviours and attitudes to adopt during a natural disaster. Use the board. Suggest that they name a speaker for the group who will introduce and support the team's choice before the entire class.
- 3. Once Part one of the sheet is filled out, get back together and check their answers. Ask the speaker of each group to introduce the situation that presents the best behaviours and attitudes. Compare each team's choice. Summarize the information on the behaviours and attitudes to adopt during a natural disaster by reading the chart in Annex 3.
- 4. Ask students to fill out Part two of sheet 13 to find out more about what should be done after a natural disaster. Once this part is filled out, check their answers.
- 5. Answer any questions the students may have.



Social Studies/M.E. Health and Physical Education



- Sheet 13 of the activity booklet.
- A photocopy of Annex 3 for each student.



Following page.

The behaviours and attitudes to adopt in emergencies.



The behaviours and attitudes ACTIVITY to adopt in emergencies. SHEET 13 =[e] Natural disaster What to do a) What not to do Seek shelter under a table. Earthquake Run in the house. Run outside of the house. Stop the car. b) Tornado Lock the car's doors. Hang onto the car seat. c) Go into the house Go into the house for shelter, Close doors and windows. Disconnect electrical appliances. Lightning storm Turn on the computer. d) Move valuables to Flood the upper floor of the house nouse. Remain on the upper floor until everything is back to normal. In these situations, which one presents only the proper things to do in case of a natural disaster: **d** Remember that it is always better to stay_ avoid using the ___**telephone**_____ calm and to Canadian Red Cross

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

Continued

Canadian Red Cross

Myth or fact?





By matching the myths about natural disasters to the facts, students learn about safe behaviour in emergency situations.



- 1. Ask students if they know what a myth is. Invite them to give a few examples.
- 2. Ask students to team up in pairs and do the activity described on sheet 14 in the activity booklet by matching the myths to the facts.
- 3. As a class, ask students to discuss their findings. Ask each team to choose a spokesperson to report the information noted on the activity sheet.
- Summarize the main points raised by the students, emphasizing safe behaviours to adopt during electrical storms, floods, tornadoes and earthquakes. Answer any questions they may have.

(See pages 11 and 12)

Social Studies/M.E. Health and Physical Education



• Sheet 14 of the activity booklet.

This activity is adapted from "Myths and Facts about Tornadoes" and "Hurrican Evacuation - Myths Versus Reality", American Red Cross "Masters of Disaster™" program.





My commitment in case of an emergency.







The students identify the responsibilities that they could assume in an emergency at home.



- Ask students to get together in groups of four to five and to specify certain responsibilities they could assume in case of an emergency. Ask them to write down their ideas on Part one of sheet 15. Then, ask them to name a spokesperson for their team who will summarize the information in front of the class.
- 2. After about 20 minutes of work, review together. Ask each spokesperson to present and support the ideas stated by the groups. Write the elements suggested by the students on the board and ask them to discuss their importance and pertinence. Ask them to individually choose the responsibilities that they consider the most important for their family. Ask them to write them down on Part two of sheet 15.
- 3. Suggest that the students bring their commitment plan home to fill it in and validate it with their parents. Have the document signed by the students and the parents to make the commitment official.
- 4. Answer any questions the students may have.

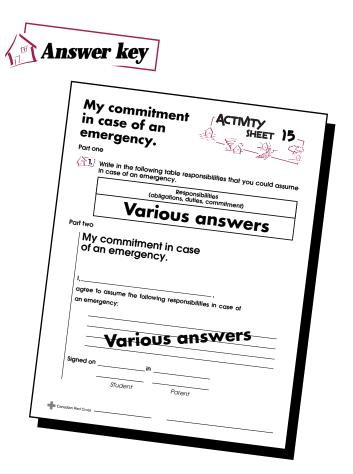
This activity is designed to make students aware of their responsibilities and have them take on an active role in an emergency. However, it is important to make sure that the parents' responsibilities are not transferred to the students. Make the students understand that this activity allows them to remember what they should do and to avoid panicking. Avoid giving students the responsibility of implementing the emergency plan as not to be blamed should something go wrong.



Social Studies/M.E. Health and Physical education



• Sheet 15 of the activity booklet.



Organizing effective assistance





Students take part in a simulation to learn about the decision-making process that occurs prior to, during and after a hurricane.



- Ask students to describe what happens when a hurricane hits a community. Invite them to name the various parties that have to be ready to react before, during and after the disaster.
- 2. Ask students to pair up and read sheet 16 in the activity booklet. As a class, discuss the various roles presented in the sheet and ask students to choose one of the roles. Give each student an ID card corresponding to the role they wish to play.
- 3. Give students time to do research and take notes on the responsibilities and actions related to their role during an emergency situation caused by a hurricane.
- 4. When the students are ready, have them place their desks in a circle and place their ID cards in full view.
- 5. Hand out Annex 4 to the students. Based on the new situation, invite them to discuss and prioritize the problems affecting the city and solutions. Ask them to present the information in a table that indicates the time, the problem and the actions taken.
- 6. Following the simulation, invite students to revise their notes and analyze their answers. Which sectors were the most difficult to manage? Which decisions were the most difficult to make?
- 7. Summarize the main points raised by the students and answer any questions they may have.



Health and Physical Education/M.E. Geography



- Sheet 16 of the activity booklet.
- Photocopies of Annex 4 for each student.

This activity is adapted from "Issues for Emergency Management Team Meeting", American Red Cross "Masters of Disaster™" program.

More activities

- Observe and learn to distinguish the different types of clouds.
- Identify potential earthquake hazards in the classroom based on the following questions:
 - Are tables and desks placed in such a way that they cannot slide and block exits?
 Are all filing cabinets and cupboard doors securely latched?

 - Are all computers securely fastened to their workstations?
 - Are all shelves, filing cabinets and cupboards bolted to the wall?
 Are all overhead lamps securely fastened to the ceiling?

 - Are potentially hazardous chemical products safely stored?
 - Are chemical products stored in ventilated areas located far from exits?
 - Are books and materials stored on shelves in such a way that they cannot fall from them?
 - Are all decorations on the wall securely fastened?
- Study the myths and facts about natural disasters such as tornadoes, hurricanes and electrical storms.
- Ask students to find newspaper articles describing natural disasters that have occurred in the world and organize them according to the criteria of their choice (severity, location, natural elements involved, time of year).
- Organize a campaign in your school or community to raise awareness and provide information about natural disasters.
- Invite a guest speaker to talk about local or overseas disaster intervention.
- Game: prepare an emergency survival kit using coloured stickers on which students write what they think should be included.
- Association game with various coloured cards: disasters, definitions and appropriate behaviours.
- Timed simulation of an earthquake: two minutes to prepare, group simulation and discussion.
- Observe and learn to distinguish the different types of clouds.

For more information

In this fourth section of the facilitator's guide, there is information on the main natural disasters that could occur in your province or in other parts of Canada, the measures to take to be well prepared for emergencies and the observable reactions students have in case of an emergency.

A disaster is an accident that seriously disrupts the community's everyday activities by causing deaths, injuries and material damage. An event becomes a disaster when:

- It involves an <u>extreme phenomenon</u>.
- This phenomenon <u>occurs in a location where many people live</u>. As a result of the disaster, people find themselves helpless and in dire need. They have no food, clothes or shelter and no access to medical or nursing assistance, are deprived of all basic necessities and are without protection against the adverse factors and conditions of their environment.
- This phenomenon <u>takes people by surprise</u> because it happens suddenly and unexpectedly.

Types of disasters

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

The type of disasters caused by human beings are:

- industrial accidents: construction faults (dams, tunnels, buildings, mines, etc.), explosions, fires, collisions, shipwrecks, railway catastrophes, toxic substance leaks into drinking water systems, etc.
- socio-economic catastrophes: massive unemployment, pollution, overuse of ressources, limited access to healthcare and education.
- socio-political catastrophes: failure to respect human rights.

A natural disaster is caused by natural elements, like wind, rain, extreme temperatures or seismic activity which become catastrophic by causing deaths, injuries and material damage.

Types of natural disasters

There are three types of natural disasters:

- Weather related disasters: storms (hurricanes, tornadoes, cyclones, snowstorms), heat or cold waves, droughts, etc.
- Topographical disasters: floods, avalanches, landslides, etc.
- Geophysical disasters : earthquakes, volcanic eruptions, tidal waves, etc.



Many natural disasters can lead to major damage when they occur close to residential areas. This section of the teaching guide provides a short list of these disasters.

Lightning storms and lightning bolts

Lightning storms consist of lightning flashes (light) and thunder (bang). Thunder can smash windows, start a fire, cause power failures or explosions if it comes into contact with fuel. It can be dangerous to humans by inducing serious burns or electrocution. This natural phenomenon occurs mostly in the summer, late in the afternoon.

Vertical air currents that carry humidity, water and ice in the clouds create electrical charges. Clouds then develop positive and negative charges. When these charges are too high, there is an electrical discharge. Discharges occur either between clouds to produce heat lightning or on touching the ground to produce a lightning bolt that may strike the same place several times. Astonishingly, lightning can also occur during a snowstorm.

A lightning bolt produces a tremendous amount of energy. It can reach temperatures up to five times that at the surface of the sun. If it strikes a tree, the electrical current reaches the water in the wood and changes it into steam which shatters the tree. This discharge usually occurs at only one point in the lightning bolt.

During a storm, you first see the flash of lightning and then hear the thunder. This can be explained by the fact that light travels one million times faster than sound.

You can measure the distance of a storm by counting the number of seconds between the time you see the flash of lightning and the time you hear the thunder. You then divide the time by 3 and you get the distance of the storm in kilometers.

Power failures

Here are possible causes of power failures:

Natural: Lightning bolts, freezing rain, frozen electrical wires, storms and trees that fall on power lines.

Technical: Electrical power failure or breakdown.

Human: Overloads, short-circuits, power cut-offs, person who brings an aluminum ladder or a metal antenna close to electrical wires, excavation work.

What must we do in case of a power failure?

In case of a power failure, you should first determine how extensive it is (a few houses, one entire street, a neighbourhood) and notify your electricity company to help them locate the failure. With their computers, they usually can quickly find the failures in a network because of the sudden lowered electricity demand.

If the power failure lasts, you should:

- 1. Listen to the radio station to know more about the failure;
- 2. Lower the thermostat so as not to overload the network when the power comes back on;
- 3. Disconnect electrical appliances which were in operation before the power failure, except for the refrigerator and freezer;
- 4. Leave a few lights on to know when the power comes back on;
- 5. Avoid opening the refrigerator and freezer: food can be kept for 24 to 48 hours. In winter, some food can be kept outside or along the windows;
- 6. Close water valves and open water faucets when you leave your home.

When the power comes back on, you must gradually reconnect your electrical appliances and turn on the heating progressively to avoid overloading the circuit and causing other failures.

Changing your habits temporarily

It is important to remember that people's habits completely change during a power failure. Everyday life changes altogether. It becomes more difficult to cook, heat the house, provide lighting and carry out activities.

Rain

Clouds are a collection of very small water droplets. Carried by the wind, they stick together and form larger droplets. When their size is greater than 0.1 mm, they fall as rain. Remember that nothing large remains suspended in the air. Water droplets may reach up to 5 mm in size when they fall on the ground. They become larger by merging together when they fall.

There are different types of rain. Here are a few:

- Drizzle: precipitation consisting of many droplets falling lightly (less than 0,5 mm).
- Shower: strong and sudden precipitation of a short length.

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

This natural phenomenon is characterized by abundant snowfall and strong winds. Visibility is thereby reduced and it becomes hard to walk or travel outside. Thus, it is better to stay at home. Schools are usually closed and traffic on the highways is limited. During a snowstorm, the air temperature is usually higher because snowfalls are more abundant when the temperature is slightly below 0 °C.

Snowstorms are most common in December, January, February and March. It does not snow everywhere in the world. In some countries, the snow falls only at the top of high mountains. In other countries, there is never any snow. At the North Pole and the South Pole, the snow never melts.

Snow

Snow consists of water that crystallizes into ice when the atmosphere gets cold.

The clouds filled with water droplets form a mass of ice when the air is cooler. The ice expands and forms crystals which merge together to form snowflakes. It takes millions of ice crystals to make a single snowflake. When they are large and heavy, they fall out from the clouds. Snowflakes are rarely identical. Their shape varies according to the temperature and how they move to join together. The larger ones branch out and form stars. Their size varies from the size of a coat button to that of a pencil tip.

Temperature	Snowflakes shapes
0°C to -8°C	Needles Goblets and saucers Stars
-8 °C to -15 °C	Goblets and saucers
-15 °C to -20 °C	Stars
-20 °C and colder	Columns

Wind

The wind carries the snow in the air and makes a snowstorm more violent. It reduces visibility and hinders walking or travelling. The wind also moves snow along the ground to form burrows or patterns which can be seen in the fields. When snow is carried by the wind, its structure is modified and it becomes more compact.

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 expel 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.

Canadian Red Cross

37

Fire

It is important to be aware that a fire can start anywhere in the house. However, bedrooms, kitchens or living rooms are more subject to fire. It can also start in the basement.

The causes for fires are varied. They can be caused by human errors or mechanical failures. Most fires start in the kitchen, usually when cooking oil is overheated. Other causes are : heating devices, negligent smokers, children playing with matches, fires lit voluntarily, electrical fires and clothes dryer fires.

Firefighters are constantly carrying out prevention work and suggest being careful to avoid fires. Over the last few years, it has been highly recommended and in some cases compulsory to have smoke detectors in each home. This prevention device is essential to warn the occupants that there is smoke in the house.

To make sure the smoke detector is in good working condition:

- Check it each month to make sure it works properly;
- Replace the batteries (with new ones) twice a year, at fall and spring time changes;
- Be more careful when the smoke detector is connected to the home power supply, especially when there is a power failure;
- Install the smoke detector close to the bedrooms;
- Install one smoke detector on each floor.

It is essential to know how to react in case of a fire or simply when you evacuate your home. You must:

- Remain calm;
- Avoid panicking ;
- Yell out to alert your neighbours;
- Leave your home quickly;
- Not get dressed or take your toys along;
- Not try to put out the fire;
- Crawl on the hands and knees to escape if there is smoke;
- Avoid touching any doors;
- Close the doors to avoid any drafts;
- Call emergency services;
- Get help from your neighbours;
- Go to the designated meeting place;
- Avoid returning into the house.

Remind children they must not hide (under the bed or the covers, in the closet, in the clothes dryer, in the bathtub) when they detect a fire at home, because they will not be safe there. The best reaction is to alert other people in the home then go outside to be visible, breathe fresh air and yell for help.

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 can 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.

he link between natural disasters and climate change

Extreme conditions have always occurred in nature. However, over the past thirty years, these events seem to be increasing in frequency and severity. They are no longer spectacular natural phenomena, but disasters with tragic consequences. This is because of human activity and the effect of socio-economic factors like poverty, demographics and urban sprawl.

The increase in the frequency and severity of natural disasters is considered to be a consequence of a phenomenon observed in recent years: the warming of the earth's surface temperature. Global warming is attributed to an increase in the natural greenhouse effect due to greater concentrations of greenhouse gases in the atmosphere, which are the result of human activity.

The greenhouse effect is the phenomenon whereby gases in the atmosphere absorb warmth emitted by the earth. It is originally a natural phenomenon, whereby the atmosphere acts like a thermostat, protecting the earth from excessive temperature variations. Without the greenhouse effect, the earth would be like the moon, too cold to maintain life.

This natural greenhouse effect is due to gases that are naturally contained in the atmosphere (greenhouse gases), which capture the sun's heat and warm the earth, air and water. They include nitrogen, oxygen, water vapor, carbon dioxide (CO₂) and methane (CH₄). When these gases are present in normal quantities, they absorb enough heat to make life on earth possible. But when certain gases build up, they form a dome that holds in the heat, reflecting it back to the earth and increasing its temperature.

 CO_2 is the most significant contributor to the greenhouse effect. It is the main greenhouse gas in terms of volume in the atmosphere and annual emissions. Over the past 200 years, the use of fossil fuels (gas, coal, natural gas) to heat our houses, power our cars and operate our industries has resulted in a 25% increase in CO_2 emissions in the atmosphere.

The average global surface temperature will rise by 1.5 to 6 degrees Celsius over the next century. Global warming could have significant consequences for all forms of life. On a global scale, we may witness a rise in sea level, primarily as a result of the accelerated melting of glaciers. Higher water could result in floods and increase the erosion of low coastal regions, which are densely populated. Some islands could disappear. The greater evaporation of seawater could result in a greater number of tropical storms. In mainland areas, higher temperatures could also increase water evaporation and the frequency of droughts, wildfire and heat waves. Waterways could dry up, groundwater diminish and desertification increase, diminishing agricultural productivity and prompting outbreaks of famine.



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.

- Analyze and study the risks of disasters in your area and learn what to do should they surcome.
- Prepare your home for disasters.
- Make an action plan:
 - Plan for safety measures in case of power failures or other emergency;
 - Keep your list of emergency phone numbers 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 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;
 - Let the children find out what a smoke detector sounds like; replace the batteries (with new ones) twice a year (when you set the time changes);
 - Practice the evacuation plan at home and the techniques to remain sheltered in your home in case of a hazardous materials release;
 - Turn off water and power if all family members know how to, have time to do it and it is recommended by the authorities;
 - Never use the elevator in case of an emergency;
 - Teach the children to recognize emergency exits and smoke detectors at home, in school and in public places;
 - Plan alternative living quarters.
- Prepare a survival kit, a first aid kit and a car emergency kit.
- Prepare food supplies to last 72 hours in case of an emergency.
- Take a Red Cross first aid course.



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 the authorities give orders to evacuate, do not insist on staying in the house, but instead leave immediately while taking care to:

- Bring along an emergency kit and a first aid kit;
- Wear proper clothing;
- Make sure your pets are safe;
- Leave a note on the table indicating the time of departure and the 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 out all spoiled food or other;
- Use the phone only for emergencies: the work teams may still need the telephone circuits for a while.



Experiencing an emergency can affect someone for quite a long time. Kids are especially vulnerable. After an emergency, their reactions can be different according to their age. To help them better cope, make them feel confident and secure, help them to understand and perceive what is happening.

Their reactions are normal

After an emergency, kids may have certain reactions: they may cry, worry, be confused, withdraw or be aggressive. This expression of their anguish is only normal and temporary. It is better not to punish them because their reaction may persist. You should try rather to understand them and help them to get rid of their fears.

You can help them

After an emergency, you can help the kids get back to normal life by explaining to them what happened, taking their fears seriously, listening to what they have to say, being patient with them and encouraging them to express their feelings.



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;
- Local, 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

Other:

Video « Shelter-In-Place », staying safe during a hazardous materials release, Town of Brandon (Manitoba)

Emaill : b.kayes@city.brandon.mb.ca

4)

History of the Red Cross



The Movement

More than 130 years ago, Henry Dunant's dream resulted in the most impressive humanitarian organization we know: the international Red Cross movement. Able to intervene anywhere in the world to help out in any emergency situation, it has but one mission: to improve the condition of the most vulnerable in society.

History

You cannot discuss the Red Cross and its history without mentioning its founder Henry Dunant, a Swiss citizen born in Geneva in 1828.

In 1859, his business brought him to northern Italy. Dunant found himself at Solferino, on a battlefield where nearly 40,000 lay dead or wounded before him. He was disturbed to see this disaster and even more upset at how little relief was being given to the wounded. He immediately organized a first-aid team and, from that moment on, his career as a businessman was transformed.

Once back in Geneva, he wrote "A Memory of Solferino." This book explained his ideas and proposals on volunteer societies that would aid those injured in war. His book aroused much interest and in 1863, a committee of five supporting Dunant's ideas was formed.

This committee, on which Dunant played a role, organized an international conference in Geneva in which representatives of sixteen different countries participated. The International Committee of the Red Cross was born!

As a tribute to the home country of the founder and its neutrality, the organization adopted a red cross on a white background as its distinctive and common sign. The red cross became the universal symbol for aiding victims of armed conflicts and natural disasters. In 1876, the Committee adopted the name of International Committee of the Red Cross (ICRC) and approved a second emblem, the red crescent, for use in Moslem countries. The first milestones were passed. The Red Cross Movement now covered the globe. The dream of Henry Dunant was a reality.

Henry Dunant: a peacemaker

As his work with the Red Cross took up more and more of his time, Henry Dunant neglected his business and soon he was bankrupt. He was forced to resign from the ICRC. Over the next few years, Henry Dunant wandered about like a vagrant, devoting himself to humanitarian works. He spent the last eighteen years of his life in hospital.

In 1895, a journalist tracked him down and wrote an article that created a sensation. People thought that the man who had founded the Red Cross had died long ago. Overnight, he became a celebrity. The public was touched by his poverty, the Pope and kings wrote to him and a number of national Red Cross Societies made him a member or honorary president.

In 1901, the Norwegian Parliament awarded him and French pacifist Frédéric Passy the first Nobel Peace Prize.

On October 30, 1910, Henry Dunant died peacefully in his sleep. His thoughts and actions had inspired numerous humanitarian reforms. His story proves that a courageous and visionary man can change the world.

Over time, the Red Cross has been able to adapt to its environment and the international social and economic context. Today, it seeks not only to help the victims of armed conflicts but also to offer relief to those involved in natural disasters and other humanitarian tragedies, providing medical aid, material assistance and emergency social services.

Depending on the needs of the countries where it is established, its field of action includes combating famine, epidemics, childhood disease and environmental imbalances and organizing sanitary services, first aid, help to victims of road accidents and lifesaving services in forests, mountains and at sea. Throughout the world, the Red Cross prepares people to prevent and overcome crises by teaching them ways to save lives and protect health.

The movement

The Ir	nternational	The International Federation	National Societies
Comm	nittee of the Red Cross	of Red Cross and Red Crescent Societies	 There are 176 national societies throughout the world. Primary goal: improve the condition of the most vulnerable.
in tim • Is a n during intern on be	venes mainly les of war. neutral intermediary g armed conflicts, nal problems or tensions whalf of the injured, the d political and civil ners.	 Coordinates the humanitarian activities of the national Societies when a natural, technological or environmental disaster strikes a country. Aids and comforts the victims of disasters. 	 Provide emergency relief, social and public health services, water safety and first aid courses, training nursing personnel, services for senior citizens and youth programs. The Canadian Red Cross Society is one of the 176 societies.

THE SCIENTIFIC ENQUIRER, SATURDAY, OCTOBER 1, 2000

Scientific minds want to know...



Because of climate change due to the greenhouse effect Natural disasters will be more frequent

Rome, Italy – The buildup of greenhouse gas emissions in the atmosphere will result in an increase in storms, floods, hurricanes, droughts and other natural disasters, according to the Intergovernmental Panel on Climate Change (IPCC) in a report on climate change.

In fact, the IPCC predicts that the average global surface temperature will rise by 1.5 to 6 degrees Celsius over the next century. The effects of such warming will be disastrous. Although some regions will experience an increase in productivity, the majority of people will be adversely affected. And, according to the report, those hit hardest by these changes will be the earth's poorest citizens.

The greenhouse effect caused by greenhouse gases will accelerate the melting of glaciers. The resulting rise in sea level will lead to the disappearance of a number of islands and the flooding, every year, of the living environment of 75 to 200 million people in coastal regions. Landslides will also result, and populations will be more vulnerable to epidemics. And with increased evaporation of seawater will come a greater number of tropical storms. Inland, higher temperatures will increase water evaporation, droughts, heat waves and risk of wildfi re. Waterways will run dry and the groundwater diminish, resulting in problems in supplying water affecting some five billion people by 2025.

Global warming will increase desertification. Crops will be less productive and significant famines will result. Major food shortages are predicted in Africa and Asia.

The greenhouse effect is originally a natural phenomenon. Certain gases in the atmosphere refl ect the heat generated by the earth, creating the necessary conditions for life. However, human activities have increased the concentration of these gases and amplifi ed the phenomenon. The main gas responsible for global warming is CO_2 , generated by the burning of fossil fuels (gasoline, natural gas, coal) to heat our houses, operate our cars and power our industries.

Reminder



General safety rules and instructions.

1. A few safety rules

- Remain calm.
- Avoid panicking.
- Follow instructions.
- Remain silent.
- Cooperate in maintaining order and discipline.

2. A few useful hints

- Know where the emergency exits and fire extinguishers are.
- Know how to set off a fire alarm.
- Use staircases instead of elevators.
- Follow the safety instructions.

3. Some safety measures

- Locate and check the condition of the fire extinguishers and smoke detectors.
- Check the alarm system.
- Make sure the lightning system works.
- Inform everyone of the instructions to follow in case of an emergency.
- Have flashlights available.
- Practice an evacuation each year.

- Make sure the fire exits are never locked or blocked or obstructed.
- The fire exits must be easy to open.
- Always keep the fireproof doors closed.
- Post the instructions and evacuation plan on each floor of the building.

4. What to do in case of a fire

It is always essential to act quickly to avoid being surrounded by flames, smoke or heat.

When you discover a fire:

- Set off the fire alarm.
- Get everyone out of the building.
- Remain calm.
- Notify the persons in charge and tell them where the fire is located.
- Evacuate the school.
- Call the fire department from a safe place.
- Do not open the doors if you believe there is a fire. Touch the doorknob before opening the door. If it is hot, use another route to escape. Always know the route to take for each room. If you are surrounded by flames, go to another room where there is a window, close the doors behind you and call for help.
- Close all doors and windows in each room.
- Do not waste time trying to put out the fire.
- Do not go back into a room on fire.
- Crawl on your hands and knees to escape if there is smoke.
- Avoid yelling out "Fire!"

- Know where the smoke detectors and fire extinguishers are located and how they work.
- Exit the school immediately when the fire alarm goes off.
- Evacuate using the closest emergency exit.
- Leave your personal belongings where they are.
- Avoid talking unnecessarily.
- Avoid running during the evacuation.
- Go to the designated meeting place.
- Make a roll call of the students by their first name.

Adapted from : Quebec Ministry of Education (N.D.). Guide to Prepare Evacuation Plans and Rescue Plans. Quebec Ministry of Education.



You live in a coastal community. It is the afternoon of June 19. The National Weather Service (NWS) issued a hurricane WATCH a few hours ago and anticipates that the storm will increase in intensity overnight.

It is now 1:15 a.m. on June 20. The NWS reports that the storm has increased to a category 4 on the Saffir-Simpson hurricane scale and issues a hurricane WARNING. The storm is still offshore but is expected to make landfall within 12 hours. The city emergency manager contacts the mayor to request that an immediate evacuation be ordered. The mayor agrees. The emergency manager and the mayor contact the police chief. The emergency manager and the city public information officer contact the local television and radio stations.

People are asked to leave their homes as soon as possible and go to the safe place they arranged for when they completed their Family Disaster Plan. If they can't get there, the Canadian Red Cross has opened evacuation shelters in a city just 15 km inland. The Red Cross cannot open shelters in your community because the entire area has been evacuated and could be unsafe during the hurricane. By 2:55 a.m., it appears that the storm has passed. It is very quiet. Within 15 minutes the storm returns with the winds going in the opposite direction. The eye of the storm has passed directly over your community.

At 3:55 a.m., fallen trees have knocked down communication and power lines. All power has been lost in the city. There is widespread flooding in the city. Fires have broken out in parts of the city because of the careless use of candles. Streets are blocked by debris, making movement by police and emergency workers very difficult.

At 6:00 a.m., the worst of the storm has passed. Some people who refused to evacuate are hurt and need medical attention. There are a few fires burning in the city. Power is still out and roads are blocked. People who need medical attention overwhelm the hospital. Many of the people want to return to their homes and assess the damage. The problem is that the roads are not safe and many of the homes are not safe to enter. The emergency manager has convened a meeting for 6:30 a.m. You are there.

Glossary

- Action plan: Set of measures taken to plan something, an action or behaviour.
 - Alert: Set of actions taken to inform the authorities, the assistance personnel and the population of an actual or possible danger.
- Assistance: Set of measures taken to protect persons (evacuation, shelter, material help, etc.) and safeguard their belongings and assets.
- Authority: Person or group of persons one can refer to for help.
- Cataclysm: Disruption on the earth.
- Catastrophe: Sudden event that can cause disruption and may lead to damage and death; a widespread disaster.
 - Crisis: Emergency of a political nature, or an emergency disaster or catastrophe which was managed in such way as to lead to other problems of a greater nature.
- Demobilization: Assistance, persons or organizations returning in an orderly fashion to regular daily activities.
 - Disaster: Catastrophic event that can lead to human and material losses.
 - Distress: Critical and dangerous situation.
 - Emergency: Event which may bring physical or psychological harm to one or more persons or which can cause material damage and may require rapid assistance that a first aid organization can provide.
- Emergency kit: Kit that contains essential objects.
- Emergency situation: Situation that requires immediate assistance.
 - Essential objects: Objects that are necessary or absolutely needed.
 - Essential needs: Need for food, clothing and shelter.
 - First aid worker: Member of a first aid organization that will bring help to the victims of an accident or disaster.
 - Human element: That which is made by human beings (e.g. a building).
 - Mobilization: Set of actions taken to activate the assistance resources.
 - Natural element: That which is made by nature (e.g. a tree).
- Potential danger: Threat, risk that could materialize if the conditions were present.
 - Prevention: A set of measures taken to prevent danger, risk or harm from occurring.
 - Recovery: Return to a normal situation by reintegrating people who were evacuated and implementing programs that will allow people to get back to normal activities (getting public services back into operation, rebuilding equipment, production, etc.).
 - Ring of fire: Volcanoes on the edge of the Pacific Ocean.
 - Safety rules: Conduct principles.
 - Survival kit: Kit that contains objects essential for human beings.
 - Trauma: Event which can cause emotional or physical problems.

Bibliography

- American Red Cross (2000). Masters of Disaster, 3-5, Activities. American Red Cross.
- American Red Cross (2000). Masters of Disaster, 3-5, Lesson Plans. American Red Cross.
- American Red Cross (2000). Masters of Disaster, 6-8, Activities. American Red Cross.
- American Red Cross (2000). Masters of Disaster, 6-8, Lesson Plans. American Red Cross.
- American Red Cross (1994). Disaster Preparedness, Coloring Book, American Red Cross.
- Anonymous (1986). Notre merveilleux monde la terre. Éditions Chanteclerc.
- Archer, Cheryl (1995). Vive la neige. Éditions Héritage jeunesse.
- Assan, M. (1971). Guide d'assainissement en cas de catastrophe naturelle. World Health Organization.
- Association des chefs de services d'incendie (N.D.). Guide de préparation de plans d'évacuation et de sauvetage dans les écoles. Quebec Ministry of Education.
- Canadian Red Cross and Emergency Preparedness Canada (1995). Planning for the Unexpected to Face Emergencies. Canadian Red Cross and Emergency Preparedness Canada.
- Canadian Red Cross Society and Emergency Preparedness Canada (1994). Plan for the Unexpected: Preparing for Emergencies. Canadian Red Cross Society and Emergency Preparedness Canada.
- Canadian Red Cross Society (1994). Safety: A child's game. Parent's Guide to First Aid and Safety. Canadian Red Cross Society.
- Canadian Red Cross Society (1994). First Aid: The vital link. Canadian Red Cross Society.
- Dickinson, Terence (1989). Découvrir le ciel le jour. Le guide alpha de l'atmosphère et de la méteo. Éditions Broquet.
- Ducrocq, Albert (1983). La vie de l'eau. Éditions Fernand Nathan.
- Emergency Preparedness Canada and Canadian Geographic (1996). **Canada National Atlas: Natural Disasters.** Emergency Preparedness Canada and Canadian Geographic. (Theme map)
- Emergency Preparedness Canada (N.D.) **Preparing your Family for Earthquakes and Emergencies.** Emergency Preparedness Canada. Communications Branch.
- Emergency Preparedness Canada (1996). " Le traumatisme chez l'enfant: quelques conseils. " in **Revue de la protection** civile. December 1996. Emergency Preparedness Canada, Communications Branch.
- Gemmell, Kathy et al (1995). Tempêtes et cyclones. Éditions Usborne.
- Health and Social Services Ministry (1994). Informations générales sur divers types de sinistres naturels ou technologiques. Health and Social Services Ministry.
- INDR/Stop Disasters (1995). Learning about Disasters : Games and Projects for You and Your Friends.
- International Federation of Red Cross and Red Crescent Societies (1999). World Disasters Report 1999. International Federation of Red Cross and Red Crescent Societies.
- Lafrenière, Maryse (1995). Guide pratique du consommateur. Situations d'urgence. Quebec Government, Consumer Protection.
- Municipal Affairs Ministry (1985). Guide de visites de prévention des incendies dans les résidences. Municipal Affairs Ministry.
- Régie régionale de la santé et des services sociaux du Saguenay—Lac-Saint-Jean (1996). **Pour qu'après la pluie vienne le beau temps.** Régie régionale de la santé et des services sociaux du Saguenay—Lac-Saint-Jean.
- Vial, Maurice (1990). Le temps et les saisons. Éditions Rouge & Or.



