Natural Disasters

Learning object
Natural Hazards

Lesson overview
Students will use a poster map from 1996 to explore the causes and effects of natural hazards on Canada and different areas of the world. They will use a geographic thinking framework to explore the many sides of natural hazards.

Grade level
Grade 9

Time required
Two 60 minute lessons

Curriculum connections
Ontario Grade 9 – Geography
- Analyze local and regional factors that affect Canada’s natural and human systems
- Analyze the ways in which natural systems interact with human systems and make predictions about the outcomes of these interactions
- Describe how Canada’s diverse geography affects its economic, cultural and environmental links to other countries
- Analyze connections between Canada and other countries
- Explain how natural and human systems change over time and from place to place
- Predict how current or anticipated changes in the geography of Canada will affect the country’s future economic, social and environmental well-being
- Use the methods and tools of geographic inquiry to locate, gather, evaluate and organize information about Canada’s natural and human systems

Additional resources, materials and equipment required
- Computer/projector for showing videos and learning objects
- Student computers for research
- Name tags for role-playing discussion (attached)

Main objective
The main objective of the lesson is for students to gain insight into the various aspects of natural hazards. They will explore the causes and effects of six different natural hazards from a variety of perspectives.
Learning outcomes
By the end of the lesson students will be able to:
• Explain the causes of six different natural hazards
• Explore how they affect the physical environment
• Explore how they affect humans in different regions of Canada and the world
• Determine reliable sources of information
<table>
<thead>
<tr>
<th><strong>Teacher activity</strong></th>
<th><strong>Student activity</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>Students will watch the news clips and participate in the discussion.</td>
</tr>
<tr>
<td>Begin this lesson by showing news clips about recent natural disasters and engage the students in a brief discussion about natural hazards – What do they already know? Introduce the Learning Object (the poster map). Explain that this is a thematic map and was created in 1996. Host a discussion about what they think of the map. What does it tell us? Why was it created? Is it effective?</td>
<td>Students will look at the information on the map analyze the content for effectiveness. They will explain what they know by reading it.</td>
</tr>
<tr>
<td><strong>Lesson Development</strong></td>
<td>Students will work in small groups to efficiently research the causes of different hazards.</td>
</tr>
<tr>
<td><strong>Part one – causes:</strong> In groups, have the students research the causes of one of the six natural hazards discussed on the poster to research.</td>
<td>Students will work in the same groups to continue their research looking at the effects of natural hazards.</td>
</tr>
<tr>
<td><strong>Part two – effects:</strong> In the same groups, have students continue to research the same hazard as in part one, this time looking at the effects that it has both on the natural and human systems.</td>
<td>Using both the research that they completed as well as the role card they have been assigned, students will actively participate in the class discussion.</td>
</tr>
<tr>
<td><strong>Part three – discussion:</strong> Assign each student a role card (attached). With the information that they collected in their groups in parts one and two, each student will participate in a class discussion about the natural hazards while students assume the role of their card (farmer, government, aide worker, reporter, etc).</td>
<td>Students will work together to determine the changes that would have to be made to the learning object to make it more accurate for use today.</td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td>Students can research what the map would look like today and write/draw a new version of it.</td>
</tr>
<tr>
<td>Remind students that this map was originally created in 1996. Lead the students in a final discussion about what would be different if the map was made now? Would it look the same? What events/hazards would need to be added, etc.</td>
<td>Looking at similar disasters in different places in the world students could use the same roles to explore how different areas of the world are affected differently.</td>
</tr>
</tbody>
</table>

**Lesson extension**
- Students can research what the map would look like today and write/draw a new version of it.
- Looking at similar disasters in different places in the world students could use the same roles to explore how different areas of the world are affected differently.
• Students can reach out to a local aid organization and assist in natural disaster relief.

Assessment of student learning
Students can be assessed on research skills, group work/cooperation, geographic thinking, and ability to synthesize information. Evaluation of the research each group compiles as well as their comprehension and participation in the role-playing discussion can be completed.

Further reading
Public Safety Canada – Natural Hazards of Canada
The Atlas of Canada – Natural Hazards
http://atlas.nrcan.gc.ca/site/english/maps/environment/naturalhazards
Science and Technology for Canadians – Natural Hazards
http://www.science.gc.ca/Subject_Directory/Environment/Earth/Natural_Hazards-WSA91B46AE-1_En.htm
Centre for Natural Hazards Research
http://www.sfu.ca/cnhr/types.html

Links to Canadian National Standards for Geography
Geographic Skills:
• Systematically locate and gather geographic information from a variety of primary and secondary sources
• Make inferences and draw conclusions from maps and other geographic representations

Six essential elements
2) Places and Regions
   • Physical and human processes shape places
   • Critical issues and problems of places and regions
3) Physical Systems
   • World Patterns of extreme events
5) Environment and Society
   • Global effects of human modification of the physical environment
   • Global effects on the human environment by changes in the physical environment
   • Impacts of major natural hazards/disasters on humans
## Appendix 1 – Discussion Name Tags

<table>
<thead>
<tr>
<th>Reporter</th>
<th>Aid Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>MP</td>
</tr>
<tr>
<td>Parent</td>
<td>Insurance Agent</td>
</tr>
<tr>
<td>Business Owner</td>
<td>Airport Official</td>
</tr>
<tr>
<td>Public Transportation Representative</td>
<td>Community Housing Worker</td>
</tr>
<tr>
<td>Emergency Services</td>
<td>Medical Services</td>
</tr>
</tbody>
</table>