

## “Stop Disasters!” Online Simulation Assignment

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### Introduction

The “*Stop Disasters!*” online simulation ([www.stopdisastersgame.org](http://www.stopdisastersgame.org)) was created by the UN “*International Strategy for Disaster Reduction*” (ISDR). To begin, students choose one of five natural hazards:

- a tsunami hitting the coast in South East Asia
- a hurricane hitting a small Caribbean island
- a wild fire hitting the arid plains of Central Australia
- an earthquake hitting the lowland hills in the Eastern Mediterranean
- a flood hitting the valley flood plains in Eastern/Central Europe

Using a variety of defences, developments and upgrades on a limited budget and within a time frame (about 20 minutes), they attempt to lessen the impact of the natural hazard on their village.



### Context

I created an assignment (see next page) based on the simulation for my Grade 7 Geography classes as a culminating activity for a unit that covered many natural hazards. One of my main concerns was that the simulation would trivialize real-world disasters. To mitigate this we looked at many case studies and watched an excellent video about the 2004 tsunami called “*The Wave that Shook the World*” (NOVA) prior to the simulation.

Overall the students were very engaged during this activity. The simulation is browser-based (no software required) and is very user-friendly but challenging for all the right reasons. During the simulation, students uncovered excellent information about reducing the effects of natural hazards.

I asked the students to do three different disaster types twice each which ended up taking four 75 minute periods in the computer lab (three periods for the simulation and one period for writing a reflection). The number of periods can be expanded or contracted depending on the number of disasters you want to cover and the extent of the assignment.

### Selected Ministry Expectations

I believe this simulation could be used in a number of different courses. I have highlighted a few of them below with the main corresponding expectations:

#### Gr. 7 Geography

- identify the effects of natural phenomena (e.g., tornadoes, earthquakes, hurricanes) on people and the environment.

#### Gr. 9 Geography of Canada (CGC1D)

- produce a set of guidelines for developing a solution to a global geographic or environmental issue

#### Gr. 11 Physical Geography (CGF3M)

- analyse how natural hazards (e.g., earthquakes, hurricanes, landslides) affect human activities
- analyse ways in which human activities may increase or decrease the risks from natural hazards (e.g., floods, avalanches, tornadoes)

#### Gr. 11 Travel and Tourism (CGG3O)

- predict and explain the likely impact of a natural or human-caused disaster on travel and tourism in a selected region

### Selected further resources

- ISDR “Stop Disasters!” Teacher Resource page: [stopdisastersgame.org/en/information.html](http://stopdisastersgame.org/en/information.html)
- NOVA “The Wave that Shook the World” video (55 minutes)
- CBC “Disaster in Asia” (tsunami) website: [cbc.ca/news/background/asia\\_earthquake](http://cbc.ca/news/background/asia_earthquake)
- CBC “Forces of Nature” website: [cbc.ca/news/background/forcesofnature/natural-disasters.html](http://cbc.ca/news/background/forcesofnature/natural-disasters.html)
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## “Stop Disasters!” – Assignment Sheet

### Scenario

“Disasters triggered by natural hazards destroy lives and livelihoods. They affect millions of people every year, rich or poor. With your help, we can reduce the human, physical and financial cost of disasters by understanding the risks of applying the best methods of prevention and mitigation. Simple measures really do save lives. Your role is to plan and construct a safer environment for your population. You must limit the damage when natural hazards strike.” (**International Strategy for Disaster Reduction**).

### Steps

1. Go to [www.stopdisastersgame.org](http://www.stopdisastersgame.org) and click on “**Play Game**” (it may take a minute to load), read the introduction and then “**Launch Game**”.
2. Click on “**Instructions**” and read each section carefully. This is important as there are many different features of this simulation and you will need all of them to complete the assignment.
3. Click on “**Play Game**” and choose the **Tsunami, Earthquake, Flood, Hurricane** or **Wild Fire** scenario. Record the **Disaster Type, Location, Terrain, and Difficulty Level** on your worksheet (see attached). Note: for each Disaster type, start with the “**easy**” scenario.
4. Carefully read the “**Mission Introduction**” and record the “**Population**”, “**Challenge**” (summarize in your own words), “**Budget**” and “**Time Allotted**”. The simulation then begins.
5. Click on the “**Overview**”, “**Key Facts**”, “**Budget**”, “**Population**”, “**Show Risk**”, and “**Difficulty**” tabs for important information.
6. Click on any square of land or water and read the “**Info**”, “**Defence**”, and “**Develop**” tabs – this will give you an idea of what resources are available to you (and their cost). Click on any existing building and read the “**Info**” and “**Upgrade**” tabs (the “**Demolish**” tab has no info – clicking on it will destroy the structure).
7. Begin to put in place various defences, developments and upgrades in an attempt to meet the Challenge. Make sure to explore all areas of your map.
8. As you start putting in place defences and developments, “**Key Fact**” boxes will pop up giving you valuable information. There are 15 “**key facts**” in each simulation – the more of these you uncover, the more points you earn. You will be required to record the “**key facts**” you discover, but wait until the second time you go through the simulation so you don’t waste valuable time (disasters usually hit 20 minutes into the simulation).
9. At a certain point, the disaster will hit. Summarize the news report on your worksheet. Click on “**View Scene**” and look at the damage using your “**Map**” function. Click “**Back**” and then click on “**View Report**” and fill in the “**Mission Report**” tables. Answer the **Analysis** questions. Note: you will not be marked on your “**score**”, rather the completion and quality of the sheets.
10. Go through the simulation again (using the same disaster type), but focus on uncovering the **15 Key Facts** and summarizing them in the table. Don’t worry about your score or about the time. You can then exit the game and try another Disaster repeating steps 3-10.
11. Type a two-page (double-spaced) reflection on your experience in doing the “**Stop Disasters!**” simulation. In doing so, describe specific things that affected you, how you chose the 15 Key Facts, and what you learned about responding to natural disasters. There is no right answer for this reflection. You will be marked on your ability to express thoughts, feelings and ideas, and the mechanics of your writing (spelling, grammar, style).

Evaluation: see attached rubric

Due Date:

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## “Stop Disasters!” Worksheet

### Background (fill out before simulation begins)

Disaster Type:  Location:  Terrain:

Difficulty Level:  Population:  Time Allotted:  Budget:

Challenge (summarize in your own words):

### Mission Report (fill out after disaster hits)

Summarize the news report of the disaster:

### Housing and Development:

Buildings Destroyed:	Total Damages:	Population Housed:
Population Died:	Population Sheltered:	Population Injured:

### Mission (pass or fail):

School built:	Hospital built:	Scenario mission:
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### Bonus:

Key Facts Found:	Budget Remaining:	Final Score:	Pass or Fail?
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### Analysis (fill out after disaster hits)

1. What measures seemed to be the most successful?

2. What might you do differently the next time you try it?

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## “Stop Disasters!” Key Fact Table – Disaster Type:

After you have completed a disaster simulation once and recorded the necessary information for your Worksheet (see previous page), try the disaster again but this time focus on uncovering the **15 Key Facts** and summarizing them below. Some of your key facts should describe the measures that could be taken to respond to natural disasters. Don't worry about your score or the time.

Key Fact Title	Key Fact Summary – in your own words
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

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## Evaluation Rubric for “Stop Disasters!” Simulation Assignment

Name:

	Level 1	Level 2	Level 3	Level 4	Mark:
<b>Simulation Worksheets and Key Fact Tables (Application)</b>	The worksheets and/or key fact tables are missing a lot of information and contain almost no significant insights or observations. (10-11)	The worksheets and/or key fact tables are somewhat complete and contain only a few significant insights and observations. (12-13)	The worksheets and/or key fact tables are mostly complete and contain several significant insights and observations. (14-15)	The worksheets and/or key fact table are complete and contain many significant insights and observations. (16-20)	<b>/20</b>
<b>Reflection (Thinking and Inquiry)</b>	The reflection demonstrates minimal engagement with the simulation. (5)	The reflection demonstrates some engagement with the simulation. (6)	The reflection demonstrates a solid engagement with the simulation. (7-8)	The reflection demonstrates an outstanding engagement with the simulation. (9-10)	<b>/10</b>
<b>Reflection (Communication)</b>	The reflection includes little or no explanation for facts chosen or key learnings from doing the simulation. (7-8)	The reflection includes minimal explanations for facts chosen or few key learnings from doing the simulation. (9-10)	The reflection includes good explanations for facts chosen or several key learnings from doing the simulation. (11-12)	The reflection includes excellent explanations for facts chosen or numerous key learnings from doing the simulation. (13-15)	<b>/15</b>
<b>Reflection (Communication)</b>	The reflection displays a poor writing style and many spelling/grammatical errors making it difficult to read. (2)	The reflection displays a satisfactory writing style and several spelling/grammatical errors making it somewhat difficult to read. (3)	The reflection displays a fine writing style and few spelling/grammatical errors making it easy to read. (4)	The reflection displays a wonderful writing style and now spelling/grammatical errors making it a pleasure to read. (5)	<b>/5</b>
				<b>Total</b>	<b>A: /20 T/I: /10 C: /20 /50</b>

**Comment:**