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Film summary: Filmed for presentation in IMAX 3D and 2D, Rescue documents the work of the Canadian Navy and some of its international counterparts (U.S. Navy, Air Force and Air National Guard and non-governmental organizations) — personnel engaged in the vital work of responding to major disasters and emergencies worldwide. Rescue follows the stories of four main characters — Commander Peter Crain, Commanding Officer HMCS Athabaskan, C-17 airplane pilot Captain Lauren Ross, Major Matthew Jonkey, a CH-47 helicopter pilot, and Steven Heicklen, an FEMA-certified volunteer Emergency Manager — as they respond to Haiti’s massive 2010 earthquake. The film propels giant screen audiences into the extreme, high-stakes world of disaster response, where lives dangle in the balance; where individuals, teams and machines are thrust into chaos in the aid of strangers…often at the ends of the Earth.

For more information on Rescue, browse the film’s website at: www.rescue-film.com
For more information on the Canadian Navy: www.navy.forces.gc.ca

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INTRODUCTION

This teacher’s guide is intended for use with Rescue, an inspiring IMAX film that follows some of the heroes who responded to the devastating 2010 earthquake in Haiti. Canada’s humanitarian contribution was carried out in large part by the Navy. To represent this effort the film includes Commander Peter Crain among its four main characters. Through this guide and outreach materials, educators are offered an opportunity to engage students in topics linked to the story of Rescue. Derived from themes in the film, classroom activities are geared at grades 3-7 (2nd and 3rd Primary cycles as well as Secondary 1) and employ skills related to the following subject areas: mathematics, language/arts, social studies, science and technology.

A note on structure. Followed in its entirety, the guide invites students to assist crew members onboard a Canadian naval ship on the critical rescue mission in Haiti. Students are asked to think of themselves as participants in the relief efforts. The students start their ‘Rescue’ experience with a pre-screening activity entitled Disaster Strikes, which provides background on the Haitian calamity. The activities in the guide allow students to explore different facets of disaster and response. While the guide proceeds in a linear fashion, lessons can of course be studied independently.

The activities were created taking into consideration Gardner’s Theory of Multiple Intelligences as well as Canadian curriculum requirements. Two distribution charts outlining curriculum areas and intelligence types by activity are included at the end of the guide.
Objective
Students are introduced to the Haitian disaster and to concepts of cause and effect. This activity is best undertaken prior to viewing the film and can provide students with conceptual tools for understanding the nature of a disaster and our response to it.

In the film
Rescuers respond to the devastating effects unleashed by the 2010 earthquake in Haiti.

Background
The 2010 earthquake in Haiti is one of the greatest catastrophes of modern times. The death toll per capita was four times higher than any other disaster in the past 40 years. Additionally, it is estimated that some 1.3 million people were left without shelter by the earthquake. In the aftermath, survivors did not have access to potable water, food or medical attention, and humanitarian intervention was an urgent necessity.

Sanitation conditions in makeshift camps were a grave concern. Populations became vulnerable to exposure and water-borne diseases; this increased the scope of the catastrophe. The extent of the situation in Haiti illustrates how a disaster is more than just a natural phenomenon. It is, in fact, a string of inter-related events and causal relationships.

Cause & Effect
Many events and circumstances can contribute in a cause and effect manner, influencing whether a natural occurrence in fact becomes a disaster. Of course, the Haitian catastrophe was triggered by the earthquake, but there are other components that have to be considered. Poorly constructed buildings resulted in the most immediate loss of life. In the hours right after the earthquake, the speed of response by rescuers affected the fate of survivors. Following this came the need to provide emergency shelter, clean drinking water, sanitation and other supplies. Without these interventions the damage caused by the earthquake would have been much worse.

In this activity, students are encouraged to think about how actions have consequences – about cause and effect. In this way, students may draw personal lessons from a larger historical event – and think about the decisions they make in their own lives.
ACTIVITY 1 (Option A or B)

Pre-Activity Discussion
Discuss with students some of the possible effects on a population’s basic needs when a disaster strikes. For example, if buildings are destroyed, people who survive the initial destruction can become exposed to extreme heat, cold, rain, snow, etc. Water supplies can be disrupted — for example, pipes are broken or water treatment plants are ruined. Food might become hard to obtain. Looters could threaten people, steal scarce supplies or destroy property.

Materials
- Dominos (for Option A – 10 dominos for a class demonstration; for Option B – 10 dominos are needed per group of students),
- Handout – Mission Profile: Disaster Strikes (pg. 4).

OPTION A - As a Class
To Do
Stand 10 large dominos on end. Label the first domino ‘Earthquake’. Explain that the subsequent 9 dominos are ‘impacts’ caused by the earthquake on basic human needs, such as food, water and shelter. To illustrate this, knock over the Earthquake domino, setting off a chain reaction, toppling all the other dominos. Each domino that falls represents an impact on our basic needs — the loss, in various forms, of food, water and shelter. Discuss with students if there are ways to lessen the impacts. Are there interventions that could either be carried out before (preventative) or after a disaster occurs (responsive)? Draw a blank Impact/Intervention table on the chalkboard and fill it out as a class. With each intervention that the class comes up with, remove one of the dominos from the end of the chain. This illustrates how it is possible to take steps that can lessen the overall impact of an earthquake.

OPTION B - Game in groups
To Do
Divide the class into small groups. Provide each group with 10 dominos and the Mission Profile: Disaster Strikes handout, which includes the Impact/Intervention table. As in Option A, have them set up their 10 dominos, the first with an Earthquake label. Allow a few minutes for each group to fill out as much of the table as possible. After the time is up, have each group share their interventions with the class. For each intervention, the group can remove one of the ‘impact’ dominos from the end of their chain and set it aside. The smaller the domino chain... the more successful the students have been in lessening the impact of the earthquake. Here is the beginning of a sample table:

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelter</td>
<td></td>
</tr>
<tr>
<td>buildings fall</td>
<td>earthquake-safe buildings (before)</td>
</tr>
<tr>
<td>buildings fall</td>
<td>temporary tents (after)</td>
</tr>
<tr>
<td>no heating</td>
<td>build fires for warmth</td>
</tr>
<tr>
<td>Food</td>
<td></td>
</tr>
<tr>
<td>grocery store is gone</td>
<td>international aid - food distribution</td>
</tr>
</tbody>
</table>
You are now assisting the Canadian Navy. Welcome aboard sailor! A vital mission has arisen: a massive earthquake has struck Haiti. Aid is urgently needed. Before embarking, however, you must attend a briefing session and work with other crew members to determine what needs to be done to help in Haiti.

The situation: On January 12, 2010, a 7.0 magnitude earthquake struck Haiti and devastated the capital city, Port-au-Prince. More than 230,000 people were killed. The Presidential Palace, government buildings and many other important structures were destroyed, along with countless homes and businesses. Many were left homeless.

Haiti was the first black-led republic in the world when it gained independence as part of a successful slave rebellion in 1804. Haiti has experienced political instability throughout its history, and is today the poorest country in the Americas.
Objective
Help students identify personality traits and skills that contribute to being an effective leader.

In the film
Canadian and International responders are called to Haiti to offer humanitarian assistance following the 2010 earthquake. They make important life-saving decisions and exhibit leadership as they work to improve the situation.

Pre-Activity Discussion
Many rescue teams arrived in Haiti following the 2010 earthquake. Time was short, resources were limited and lives were at stake. Rescuers were faced with questions such as: “Where do I start?” and “What can we do that will help the most people?” Making these decisions takes leadership. What qualities make a good leader?

ACTIVITY 1

Materials
Handout – *In the Film: Four Leaders* (pg. 6).

To Do
Have students read the *In the Film: Four Leaders* handout which contains mini-biographies of the four main characters in the film *Rescue*. Working in small groups of 2 to 4 students, have them discuss what leadership qualities they think each of the main characters must possess to efficiently fulfill their roles (based on the film and mini-biographies). Then have the groups share their conclusions with the whole class.

ACTIVITY 2

Materials
Handout – *Mission Profile: Leadership Traits* (pg. 7).

To Do
Have students fill out the *Mission Profile: Leadership Traits* handout provided, choosing the top five qualities they feel an effective leader should have. Ask them to justify their choices.

Extension
Ask students to write a brief paragraph outlining the leadership traits they themselves possess.
**IN THE FILM: FOUR LEADERS**

**Commander Peter Crain, Commanding Officer HMCS Athabaskan**
Commander Peter Crain spent some of his early years living in France and England with his parents. Commander Crain joined the Canadian Forces in 1983 and completed his naval training in 1986. He graduated from the Canadian Forces Command and Staff College in 2004. Peter is scheduled for promotion to Naval Captain and set to work at National Defense Headquarters in Ottawa. Commander Crain’s work has brought him to Haiti, the Persian Gulf and other places around the world.

**C-17 airplane pilot Captain Lauren Ross**
Captain Lauren Ross is a United States Air Force C-17 Aircraft Commander and Executive Officer with over 700 combat flying hours. As a C-17 pilot Captain Ross regularly flies missions around the world. She has been deployed into combat twice, earning four Air Medals as well as Iraq and Afghanistan Campaign Medals. Lauren is currently working towards a Masters degree in Business Administration. During her free time, she enjoys snowboarding with her husband and friends and loves to paint. She is passionate about children and works with local schools to share her love of flying.

**Major Matt Jonkey**
Matt Jonkey was born in Las Vegas and raised in Carson City, Nevada. Before Matt realized his dream of becoming a helicopter pilot he studied Criminal Justice at the University of Nevada. His father, now a retired FBI agent, was one of the reasons Matt was drawn to this field. Matt didn’t end up working for the FBI, but he still credits his father as his main career inspiration. Matt took a break from his Criminal Justice studies to attend flight school; once he was working as a helicopter pilot for the U.S. Army he returned to university and finished his degree. His job with the military has brought him around the world for humanitarian missions, training and war efforts; he has been to Antigua, Iceland, Afghanistan and Haiti.

**Steven Heicklen – FEMA-certified volunteer Emergency Manager**
Steven first became involved in disaster response in 2004 when severe floods ravaged his home town in Southern New Jersey. Steven volunteered his expertise, equipment and staff and orchestrated the cleanup of one of three major roadways through the town. Since that time, Steven has helped with the cleanup of many major U.S. disasters, including Hurricane Katrina.

In 2010, Steven travelled to Haiti as the coordinator of a team of medical professionals. They performed hundreds of surgeries, treated thousands of patients and secured treatment for eight critically injured Haitians in America.
LEADERSHIP TRAITS

Select the top 5 traits you feel an effective leader should have.

☐ trustworthy  ☐ clarity of thought  ☐ confident
☐ ability to say no  ☐ open-minded  ☐ a sense of humour
☐ reflective  ☐ a risk-taker  ☐ responsible
☐ considerate of others  ☐ determined  ☐ a good communicator
☐ adaptable  ☐ creative  ☐ accepting of criticism
☐ a good listener  ☐ honest  ☐ loyal
☐ dynamic  ☐ resourceful

Explain your choices:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Objective
Students learn about earthquakes, fault zones and tectonic plate movement. They will also learn about the effects of an earthquake on one of our basic human needs—shelter.

In the film
A 7.0 magnitude earthquake in Haiti is the focus of the rescue effort depicted onscreen.

Background
The earthquake caused major damage in Port-au-Prince, Jacmel and other settlements in the region. Many landmark buildings were significantly damaged or destroyed, including the Presidential Palace, the National Assembly building, and the Port-au-Prince Cathedral. The island of Hispaniola, shared by Haiti and the Dominican Republic, is seismically active and has had a history of destructive earthquakes. French historian Moreau de Saint-Méry described damage done by an earthquake in 1751, writing that “only one masonry building had not collapsed” in Port-au-Prince. He also wrote that the “whole city collapsed” in the 1770 Port-au-Prince earthquake.

Earthquakes

The Earth has four major layers: the inner core, outer core, mantle and crust. The crust and the top of the mantle make up a thin skin on the surface of the Earth. This skin is made up of many pieces, like a puzzle. These puzzle pieces are constantly moving around, sliding past one another or bumping into each other. We call these puzzle pieces tectonic plates.

An earthquake occurs when the strain from the movement of two tectonic plates becomes too much. When tectonic plates move, their rough edges sometimes stick together, even though the force is pushing them in opposite directions. When the force of the moving plates finally overcomes the friction of the plates’ jagged edges, they slip past one another and stored up energy is released. Like ripples on a pond, energy in the form of seismic waves radiates outward through the earth in all directions. When seismic waves reach the surface they shake the ground and anything on it.
ACTIVITY 1

Materials • • •

- *you will need access to refrigeration*
  - One metal pan of prepared gelatine dessert (see recipe below)
  - Sugar cubes, mini marshmallows, toothpicks, plastic wrap
  - Cups and spoons for serving and eating dessert

Recipe for gelatine dessert • • •

- Two (6 oz) boxes of coloured gelatine dessert (such as Jell-O®)
- Two one-serving envelopes of unflavoured gelatine
- Four cups of boiling water
- Four cups of cold water
- One 9” X 12” metal baking pan

To Do • • •

Remind students that there are many important roles on a humanitarian mission. In this activity, they are charged with understanding the particulars of an earthquake in order to properly assist their crew members.

In advance (or the day before the activity), empty the gelatine dessert (Jell-O®) and the unflavoured gelatine into the baking pan. Add the boiling water and stir until all the powder is dissolved. Then add the cold water and mix. Put it in the refrigerator for at least three hours or until it is set.

Begin the activity by demonstrating that when there is an earthquake, energy is released in the form of waves: gently tap the side of the gelatine pan so that students can see waves travelling through the gelatine. This is what an earthquake wave is like when it goes through the earth. If you tap the pan harder, the waves become bigger.

Next, cover the gelatine with plastic wrap so that the wrap is right on top and touching the gelatine. Stack sugar cubes to make ‘buildings’ on the gelatine. Ask students what they think will happen when you tap on the pan to cause ‘earthquake’ waves. Try it. Have the students discuss what happened. You can then ‘re-build’ and tap the pan harder or softer. Note any differences.

Now replace the sugar cubes with mini-marshmallows skewered on a toothpick to represent ‘earthquake-safe buildings’. Insert the skewers in the gelatine. Again, tap on the pan to make ‘earthquakes’. Discuss what happened and what conclusions can be drawn about building in earthquake zones. When you’re done, take off the plastic wrap and have a gelatine snack!
Objective
As navigators, students must safely chart a route to Haiti, remembering that time is of the essence in a crisis.
To do this, students learn about GPS and navigating by latitude and longitude.

In the film
All the responders to the earthquake must make their way from distant locations to Haiti.

**ACTIVITY 1**

**Materials**
Handout - *Using GPS* (pg. 11), Handout – *Mission Profile: Latitude and Longitude* (pg. 12) and Handout - *Challenge Around The World* (pg. 13).

**To Do**
Go through the *Using GPS* handout and have students fill out the *Mission Profile: Latitude and Longitude* sheet.

**Here are the answers to the questions on page 12**

<table>
<thead>
<tr>
<th>LATITUDE/LONGITUDE</th>
<th>NAME OF CITY</th>
<th>ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>45°N 73°W</td>
<td>Montreal</td>
<td>Les Canadiens</td>
</tr>
<tr>
<td>45°N 75°W</td>
<td>Ottawa</td>
<td>Canada’s Capital</td>
</tr>
<tr>
<td>49°N 123°W</td>
<td>Vancouver</td>
<td>Pacific Ocean</td>
</tr>
<tr>
<td>59°N 30°E</td>
<td>Saint Petersburg</td>
<td>Russian</td>
</tr>
<tr>
<td>39°N 116°E</td>
<td>Beijing</td>
<td>Summer Olympics</td>
</tr>
<tr>
<td>33°S 151°E</td>
<td>Sydney</td>
<td>Koala</td>
</tr>
<tr>
<td>41°N 12°E</td>
<td>Rome</td>
<td>Pope</td>
</tr>
<tr>
<td>22°S 43°W</td>
<td>Rio de Janeiro</td>
<td>Swim</td>
</tr>
</tbody>
</table>

**Bonus answer**
Halifax Edmundston Lethbridge Port-au-Prince = HELP
The Global Positioning System (GPS) is a space-based satellite navigation system which indicates the user’s location at all times, anywhere on or near the Earth, as long as there is an unobstructed line of sight to four or more GPS satellites. It is maintained by the United States government and is freely accessible by anyone with a GPS receiver. As of March 2008, there were 31 actively broadcasting satellites in the GPS constellation.

GPS satellites send out signals from space. Ground, air or sea based GPS receivers use these signals to calculate their location. A GPS receiver calculates its position with respect to latitude and longitude by precisely timing the signals sent by the GPS satellites high above the Earth.

Latitude and Longitude. To give people a way of locating a specific point on the earth (for example when navigating a ship), imaginary lines, called lines of latitude and longitude, are used. These lines intersect each other to form a grid on a map.

Lines of latitude are horizontal. Since the Equator is the starting point from which all other lines are measured, it is called 0°, while the North Pole is 90°N (the South Pole is 90°S).

Lines of longitude are vertical. They are measured from an imaginary line called the prime meridian, which runs through Greenwich, England. The longitudinal lines running east to a point halfway around the world are called east longitude and those lines west of the prime meridian to that same point halfway around the world are called west longitude. The halfway point is the 180° longitudinal line.
### MISSION PROFILE  
#### LATITUDE AND LONGITUDE

Use the map provided to answer the following questions:

<table>
<thead>
<tr>
<th>LATITUDE/LONGITUDE</th>
<th>NAME OF CITY</th>
<th>QUESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>45°N 73°W</td>
<td></td>
<td>What is the name of the NHL team for this city?</td>
</tr>
<tr>
<td>45°N 75°W</td>
<td></td>
<td>What is the special status of this city?</td>
</tr>
<tr>
<td>49°N 123°W</td>
<td></td>
<td>Visiting this city, which ocean would you be close to?</td>
</tr>
<tr>
<td>59°N 30°E</td>
<td></td>
<td>What language do most people speak in this city?</td>
</tr>
<tr>
<td>39°N 116°E</td>
<td></td>
<td>What major international sports event took place here?</td>
</tr>
<tr>
<td>33°S 151°E</td>
<td></td>
<td>If you were taking pictures of animals in this city, would you take a picture of a koala bear or a polar bear?</td>
</tr>
<tr>
<td>41°N 12°E</td>
<td></td>
<td>Which religious leader might you see here?</td>
</tr>
<tr>
<td>22°S 43°W</td>
<td></td>
<td>Would you be more likely to swim or ski here?</td>
</tr>
</tbody>
</table>

**Bonus:**

Using the coordinates below, identify the cities. Taking the first letter of each city (in the order given) what word do you get? Hint: It is what the Canadian Navy did in Haiti.

<table>
<thead>
<tr>
<th>44°N 63°W</th>
<th>47°N 68°W</th>
<th>49°N 112°W</th>
<th>18°N 72°W</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Answer: _____ _____ _____ _____
Objective

Students are reminded that their ship is not the only vessel responding to the crisis and they must coordinate with others. They must take on the role of the communications officer and learn about semaphore flags, Morse code, modern radio and internet-based communications.

In the film

In Rescue, two Canadian naval ships travel to Haiti and must communicate with each other – signalmen can be seen using semaphore flags.

ACTIVITY 1

Materials • • •
Protractor, ruler, Handout - Mission Profile: Using Semaphore Flags (pg. 15), Handout – Semaphore Flag Alphabet (pg. 16).

To Do • • •
Have students read the Mission Profile: Using Semaphore Flags handout and use the Semaphore Flag Alphabet sheet to do the accompanying geometry exercise.

ACTIVITY 2

Materials • • •
Handout – About Morse Code (pg. 17), Handout – Mission Profile: Using Morse Code (pg. 18).

To Do • • •
Go through the page About Morse Code with the students. Have them write the title of their favourite book on the Mission Profile: Using Morse Code handout. Then have students translate the title into Morse code and write it in the provided box on the worksheet. You can also choose one student to vocalize their title using Morse code (saying “dah, dit”, etc.) while the rest of the students translate.

ACTIVITY 3

Send an E-mail • • •
Invite students to visit the Navy website at www.navy.forces.gc.ca. Under the ‘Youth Section’, choose ‘Operation StealthComm’. Students can then send coded email messages to each other using semaphore flags or Morse code.
**Rescue**

**Educator’s Guide**

**Semaphores** Flags are a system for conveying information at a distance by means of hand-held flags. Semaphores were adopted and widely used in the maritime world in the early 19th century. They are still used today during replenishment (fuelling) at sea and for emergency communication in daylight or, using lighted wands instead of flags, at night.

**TO DO: “SIGNAL” YOUR NAME**

Look at the *Semaphore Flag Alphabet* sheet and find the letters that spell your name. Take a protractor and measure the angle for each flag that goes with the letters of your name. (Tip: to be able to measure the angle you’ll need to draw longer arms for the person holding the flags so that the arms will cross your protractor’s outer edge.) Use a ruler and protractor to replicate the flags in the box below (be sure to take note of the direction of the flags).

**EXAMPLE:**

```
| P | E | T | E | R |
```

**YOUR NAME:**

[Blank space for input]
The following semaphore characters are presented as one would face the signalman:

A  I  Q  Y
B  J  R  Z
C  K  S
D  L  T
E  M  U
F  N  V
G  O  W
H  P  X

Attention
Break
**Morse code** is a method of transmitting text information as a series of tones, lights, or clicks that can be understood by a skilled listener without special equipment.

Morse code was originally created for Samuel F. B. Morse’s electric telegraph in the early 1840s. In the 1890s it was extensively used for early radio communication before it was possible to transmit voice. In the early part of the twentieth century, most international communication used Morse code on telegraph lines, undersea cables and radio circuits.

It was later found that people were better able to understand Morse code if it was taught as an ‘oral’ language as opposed to one read from a page. To reflect the sounds of Morse code, operators began to vocalise a dot as “dit”, and a dash as “dah”.

Morse code has also been used as an assistive technology, helping people with a variety of disabilities to communicate. In one case, a shipboard radio operator who had a stroke and lost the ability to speak or write was able to communicate with his physician (a radio amateur) by blinking his eyes in Morse code.
Sending a message in Morse code is usually done with light or with sounds. In this exercise we are going to be writing a message in Morse code.

**Step 1.** Write out the title of your favourite book (in regular letters).

**Step 2.** Translate your book title into Morse code using the *International Morse Code* chart at the bottom of the page. Write your Morse code title in the box below.

**EXAMPLE**

1. Book title: *Green Eggs and Ham*
2. Book title in Morse code:

   -- ..- .- .- - .....

**ACTIVITY • • •**

1. Your book title: 
2. Your book title in Morse code: 

---

**INTERNATIONAL MORSE CODE**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>.-</td>
<td>---</td>
<td>.-.</td>
<td>--</td>
<td>-</td>
<td>---</td>
<td>.-</td>
<td>.-</td>
<td>.</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>.---</td>
<td>.-..</td>
<td>..-.</td>
<td>--.</td>
<td>---</td>
<td>-....</td>
<td>-.---</td>
<td>.---.</td>
<td>.-.</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>.----</td>
<td>..---</td>
<td>...--</td>
<td>---..</td>
<td>--...</td>
<td>---..</td>
</tr>
</tbody>
</table>

**TIPS FOR WRITING MORSE CODE • • •**

1. Between *letters* leave 3 dots worth of space.
2. Between *words* leave 7 dots worth of space.
Objective
With their ship finally arriving in Haiti, students must quickly get to work. Lives might be saved if clean (potable) drinking water can be provided. In this lesson, students learn about making drinking water from seawater, a process that is carried out onboard navy ships.

In the film
The Canadian Navy is seen delivering desalinated seawater to Haitians by helicopter.

Background
Desalination refers to several processes that remove salt and other minerals from water, thereby converting salt water to fresh water so that it is suitable for human consumption or irrigation. Sometimes the process produces table salt as a by-product. Desalination is used on many seagoing ships and submarines.

Large-scale desalination typically uses extremely large amounts of energy as well as specialized, expensive infrastructure, making it very costly compared to the use of fresh water from rivers. Today, desalination techniques are improving and becoming more cost-effective. This will make the biggest difference in regions where fresh water is scarce.

Activity

Materials
Large bowl, salt water, small glass, plastic wrap, marble.

To Do
Remind students that their mission in Haiti is to provide disaster relief. Water, one of the basic human needs, is in short supply. Drinkable water can be provided in several ways: it can be delivered by helicopter, it can be purified using chemicals, and it can be obtained from the ocean (salt water) through a process known as desalination.

The following experiment can be used to help explain desalination:
1. Fill a large bowl with two cups of salt water. 2. Place a small glass in the center of the bowl (make sure the glass is much shorter than the rim of the bowl). 3. Cover the entire bowl with plastic wrap. 4. Place a marble on top of the plastic wrap directly over the small glass. 5. Ensure there is a gap between the top of the glass and the underside of the plastic. 6. Put the bowl in the sun for several hours. With the heat of the sun, the clean water will evaporate, cling to the underside of the plastic wrap, and then drip into the glass. 7. Remove the plastic wrap and drink the water.
Pre-Activity Discussion
Discuss with students the notion of an Emergency Plan and an Emergency Preparedness Kit; most schools have such plans and kits. Emphasize that it is important for each family to have an emergency plan and an emergency kit.

ACTIVITY 1
To Do • • •
On the chalkboard, list what students think should be included in a home emergency preparedness kit (i.e. bottled water, canned food, candles, matches, bandages, etc). Discuss whether any of these items are already present in their homes. Once the list is complete, visit the Public Safety website at www.publicsafety.gc.ca. Select ‘How do I ... prepare an emergency kit?’ and see how the children’s list compares to what’s suggested on the website.

ACTIVITY 2
To Do • • •
As a class, compose a letter to parents outlining the need for an emergency plan and an emergency preparedness kit. Include in the letter the list of items the students have put together.
## CURRICULUM AREAS

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<th>Lesson 1: Disaster Strikes</th>
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<th>SOCIAL STUDIES</th>
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## MULTIPLE INTELLIGENCES DISTRIBUTION

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