The Film

Rainforests of the sea, coral reefs are home to millions of species, acting as majestic underwater ecosystems vital to oceanic life—and ultimately, human survival. Despite their biodiversity, they remain vulnerable to coral bleaching, a deadly phenomenon caused by the warmer water temperatures of climate change. In this riveting follow up to the award-winning glacier erosion epic Chasing Ice, director Jeff Orlowski joins a former ad executive, a self-proclaimed “coral nerd” and distinguished marine biologists and camera engineers, as they embark on a breathtaking ocean adventure to capture the progressive degradation of mass bleaching events. Through several cameras skillfully submerged across the world’s tropical oceans, the team arduously battles technical challenges to reveal spectacular, irrefutable time-lapse footage of the catastrophic destruction happening underwater. With its impressive balance of artistry, suspense and urgency, Chasing Coral poignantly reveals the imminent ecological dangers threatening the globe. Shaka Licorish

Source: https://www.hotdocs.ca

The Filmmakers

Jeff Orlowski is an Emmy-winning filmmaker and founder of Exposure Labs. His latest project, Chasing Coral, is a feature film following a team of adventurers trying to reveal how the oceans are changing. It premiered at the 2017 Sundance Film Festival, along with a virtual reality piece in the New Frontier lineup. This work continues the momentum of Chasing Ice, for which Orlowski also served as director, producer and cinematographer. After premiering at Sundance, it received an Academy Award nomination and won an Emmy award for Outstanding Nature Programming. In 2016, Orlowski was named the inaugural Sundance Discovery Impact Fellow for environmental filmmaking. To maximize the impact of the film, Orlowski founded Exposure Labs, a company dedicated to both quality storytelling and powerful campaigns. For their work on Chasing Ice, Exposure Labs won the 2016 BRITDOC Impact Award recognizing “documentaries that have made the biggest impact on society.”

Source: http://www.chasingcoral.com

Educational package written and compiled by Dimitra Tsanos dimitra.tsanos@tdsb.on.ca
VIEWING THE FILM WITH STUDENTS

The following three subsections are intended to provide you with a range of Pre-Viewing, Viewing and Post-Viewing activities. They are followed by a set of questions based upon the film’s larger thematic domains, some follow-up questions and quotations, sample curricular outcomes and a page of weblinks for further investigation.

Pre-Viewing Activities

Show students the poster for the film (http://www.chasingcoral.com). Have students work in small groups to try to identify themes or ideas conveyed by the poster. As a larger group, discuss with students how effective/affective the poster is as a media piece.

After looking at the poster and film website, have students complete a KWL chart. In the K column, they should write notes on what they already know about coral bleaching, and/or the documentary. In the W column, they should ask questions they would like answered. Students should complete the L column after they have watched the documentary.

Print several of the questions or quotations from the Extension Activities section of this guide on individual sheets of paper. Have students work in small groups or with partners to discuss if they agree with the ideas.

Set a purpose for viewing by having a discussion about one or more of the questions or quotations from the Extension Activities section of this guide. Have them share the statement and what they think or believe about it with the class.

Have students define and discuss the following terms: (a) polyps, (b) foundation species, (c) coral bleaching, (d) symbiosis, (e) coral fluorescence, (f) ecological collapse, (g) climate change, (h) mass extinction and (i) renewable energy.

Have students choose one of the terms listed above. They can use a word organizer, by dividing a box in four. In each of the four boxes, have them write in one corner the following: Definition, Non-examples, Examples and Use in a Sentence. Ask the class their opinion about the word. Take it up as a class.

Show students the underwater cameras that were used for the film. The website View into the Blue has live streams from underwater cameras (http://viewintotheblue.com).

Briefly explore the coral reef ecosystem with the class. The World Wildlife Foundation has some useful facts and links that connect this threat to our warmer oceans due to global warming (http://wwf.panda.org/ Select Oceans, Seas & Coasts, then Coasts, then Coral Reefs).

Have a class discussion about coral bleaching. The National Ocean Service explains it like this: “When corals are stressed by changes in conditions such as temperature, light or nutrients, they expel the symbiotic algae living in their tissues, causing them to turn completely white.” Show students the infographic titled “What is coral bleaching?” from the National Ocean Service’s website (http://oceanservice.noaa.gov/ Type the title of the infographic into the search function of the website). Have students visit the NOAA Coral Reef Conservation Program website to learn more about coral reef issues (http://coralreef.noaa.gov).

Have students read the report Vital Climate Change Graphics that was updated in 2005 by the United Nations Environment Programme (UNEP) and GRID-Arendal, which focuses on the environmental and socio-economic impacts of climate change (http://www.grida.no/ Type the title of the report in the search function of the website).

Viewing Activities

Have students complete the PBS viewing guide on documentaries (http://www.pbs.org/pov/docs/Copies%20of%20Viewing%20Guide.pdf). Students can revisit their completed documents as a Post-Viewing Activity.

Have students jot down five ideas for discussion, or questions that the film raised in their minds.

Have students take note of the different filming techniques used during the film. Some of these include aerial shots, slow motion and time-lapse photography. Discuss the usefulness of each technique.

Have students use a Venn diagram to compare the ocean from 30 years ago to today’s ocean.
Post-Viewing Activities

Show the students their quotations from the Pre-Viewing Activity and see if their opinions were changed, altered or enhanced by the film.

Assign some of the questions and quotations from the Extension Activities section of this guide for homework to be taken up the next day in class. Check for completion.

Have students complete an exit note (a single small sheet of paper with one phrase or idea written on it) that demonstrates one thing they have learned, felt or decided as a result of watching the film.

Discuss with students their initial reactions to the various scenes and situations addressed in the film.

Do a follow-up of the KWL chart Pre-Viewing Activity. Students will work with an elbow partner to review the questions posed in column two of the KWL chart and complete column three.

Have students choose one of the events from the film and write a diary entry as if they were part of the event.

Have students create a Venn diagram comparing various viewpoints on climate change issues.

Ask students to hypothesize about how the world’s climate could change over the next 100 years if humans do nothing to limit the levels of their greenhouse gas emissions. Have them also make predictions about the effects such climate changes could have on humans.

Ask students to write two or three persuasive paragraphs to answer the following questions: In your opinion, is climate change an imminent world threat? Why or why not? Based on your opinion, what actions do you believe should be taken to address the global warming issue?

Have students join in the National Geographic’s “The People v. Climate Change” to share an environmental portrait of someone taking positive steps to protect the Earth. Have students use #MyClimateAction to share a first-person perspective on how we as humans face climate change (http://yourshot.nationalgeographic.com/ Type #MyClimateAction into the search function of the website).

Have a class discussion about mass extinctions. National Geographic has a reference to help with the discussion (http://news.nationalgeographic.com/ Type “Mass Extinction” into the search engine of the website). Have students read the National Geographic article “Will Humans Survive the Sixth Great Extinction?” and write a one-paragraph exit note answering that question based on the reading and class discussion (http://news.nationalgeographic.com/ Type the title of the article into the search function of the website).

Have students write a letter to a Member of Parliament or a company executive, outlining their views and solutions for a Canadian oceanic environmental issue. The Fisheries and Oceans Canada website can help students research a relevant topic (http://www.dfo-mpo.gc.ca/index-eng.htm).

Show students the TED Talk from Kristen Marhaver “How We’re Growing Baby Corals to Rebuild Reefs” discussing coral bleaching and how to help coral reefs (http://www.ted.com/ Type the name of the talk into the search function of the website).

Have students visit the story map (in English and French) created by GRID-Arendal titled “Endangered Reefs, Threatened People” identifying the populations and areas at most risk and who will suffer damage from climate change, coral bleaching and ocean acidification (http://www.grida.no/ Type the title of the story map into the search function of the website).

Have students create a story map identifying three vulnerable global communities. They will act as a member in the United Nations Environment Programme (UNEP). The students’ task is to suggest ways for reducing global communities’ vulnerability so that social, economic and environmental risks are minimized. To present their ideas, students will create a Story Map using ArcGIS online (http://storymaps.arcgis.com/en/app-list/). The activity and rubric, titled “Global Climate Change Action Story Map,” can be found in the Culminating Activity section of this guide.
WEBSITES AND ONLINE RESOURCES

About the Film

http://www.chasingcoral.com
Facebook: https://www.facebook.com/chasingcoral
Twitter: https://twitter.com/chasingcoral
Instagram: https://www.instagram.com/chasingcoral

Additional Resources

_Fisheries and Oceans Canada_: The federal organization serve a regulatory role in ensuring Canada has safe and secure waters, sustainable aquatic ecosystems and an economically prosperous fishery sector. A special report titled “Coral & Sponge Conservation Strategy for Eastern Canada 2015” outlines the government’s conservation and management plan for the corals in Canada.
http://www.dfo-mpo.gc.ca

_Living Oceans_: The organization, based out of the west coast of Canada, help reduce harmful human impacts on the ocean. One campaign focuses on reducing global CO2 emissions that would curb both rising ocean acidity and climate change.
http://www.livingoceans.org

_Natural Resources Defense Council_: The environmental group provides factsheets and overviews on issues about ocean conservation and ocean acidification.
http://www.nrdc.org/oceans/

_National Geographic_: A section dedicated to oceans with maps, photos and interviews on ocean life, protection and exploration outline issues about ocean conservation. A relevant article titled “3D-Printed Reefs Offer Hope in Coral Bleaching Crisis” shows how Fabien Cousteau and Dutch engineers hope new technology can slow damage in the ocean.
http://ocean.nationalgeographic.com/ocean/

_GRID-Arendal_: The centre, in collaboration with the United Nations Environment Programme (UNEP), published a report titled Our Precious Coasts, which explores threats to coral reefs.
http://www.grida.no/ Type the word "coral" into the search function of the website.

_NASA Global Climate Change_: An article from May 31, 2016, "New Instrument Brings Coasts and Coral into Focus” discusses the use of a Portable Remote Imaging Spectrometer, created at NASA’s Jet Propulsion Laboratory, Pasadena, California. It will be used in NASA's Coral Reef Airborne Laboratory (CORAL) field experiment, which will observe entire reef ecosystems in more of the world’s reef areas.
https://climate.nasa.gov/ Type the title of the article into the search function of the website.

_NOAA Coral Reef Conservation Program_: This is a partnership between the NOAA Line Offices that work on coral reef issues. The program was established in 2000 by the Coral Reef Conservation Act to protect, conserve and restore the nation’s coral reefs by maintaining healthy ecosystem function. They focus on impacts from the top three recognized global threats to coral reef: climate change, land-based pollution and unsustainable fishing practices.
http://coralreef.noaa.gov

_Ocean Futures Society_: Led by Jean-Michel Cousteau, the organization looks to explore and educate people on ocean conservation. “Coral Spawning” captures a short video on the Gulf of Mexico reefs spawning in their yearly event on a full moon in August.
http://www.oceanfutures.org

_Parks Canada_: A section on the National Marine Conservation Areas of Canada outlines the marine ecosystems that are protected, and areas that need to be protected.

_Teens4Oceans_: Led by scientists, educators and students, the group impacts youth, their peers and their parents, by providing them with the tools and resources to become Ocean Stewards.
http://teens4oceans.org

_The Oceans Agency_: Formerly known as Underwater Earth, the ocean conservation group is a not-for-profit organization founded in 2010 by a group of ex-advertising exes and creatives who believe great communication is key to finding solutions.
http://www.theoceanagency.org
WEBSITES AND ONLINE RESOURCES

*World Oceans Day:* The Canadian non-profit organization takes positive environmental action including reducing use of water and toxic chemicals, as well as greenhouse gas emissions. Beginning in 2009, the day was officially recognized by the United Nations as June 8 each year.
http://www.worldoceansday.ca

*World Wildlife Foundation Canada:* One of the environmental organization’s campaigns is oceans, where a number of issues are outlined.
http://www.wwf.ca/ Select the subheading Oceans.
EXTENSION ACTIVITIES

Questions for Pre-Viewing or Post-Viewing Activities

In the last 30 years, we have lost 50 per cent of the world’s corals. Did you know what coral bleaching was before watching the film? Why or why not?

If we had no oceans, life would cease to exist. Why are humans not protecting them as they should?

Why is the state of our oceans hard to convey to the general public?

Discuss the implications of coral bleaching at a local, regional and global level.

How are coral reefs like a city? Compare the two using a Venn diagram.

Our oceans are warming up to the point where species are at the brink of extinction. What needs to change with government policies and consumer habits to fix the problem?

Climate change is affecting many different parts of our world. List all the ways climate change is affecting our lives.

Why does society stay oblivious to major catastrophic events like coral bleaching? What other examples can you attribute our obliviousness?

What is the correlation between ocean warming and CO2 emissions?

How are these time-lapse photos so historically important? What does time-lapse photography provide to the project that two single framed photos cannot verify? Why is it important to continue to document coral bleaching?

What are the challenges to photographing under water?

Why do coral reefs matter?

What role do the media play in the climate change issue?
1. “One of the biggest issues with the oceans is it is completely out of sight and out of mind and that essentially is an advertising issue.” Richard Vevers, underwater photographer, XL Catlin Seaview Survey

2. “By tracking back at the history of the reef, we are absolutely certain this is not a natural fluctuation. The cause is in equivalently global climate change, driven by emitting carbon into the atmosphere.” Dr. Justin Marshall, marine biologist

3. “This is the most beautiful transformation in nature, the incredible beautiful phase of death.” Richard Vevers

4. “This is one of the rarest events in nature happening, and everyone’s just oblivious to it. And you can’t blame them for it. I mean it’s just almost typical of all of humanity. This is going on and no one is noticing.” Richard Vevers, about coral fluorescence

5. “We designed something originally to do this project without emotions and when we began doing this manually on Lizard Island, you have the emotional ties to it. You are down there and you sit there for a month and every single day you watch something new around you die that you saw yesterday, it’s difficult.” Zack Rago, underwater camera technician, View into the Blue

6. “I thought we would find bleaching and I thought we would capture it, but I don’t think I ever prepared myself or thought we would see this.” Zack Rago

7. “It’s easy to imagine the fall of an individual species. But it is a little harder to explain the beginning of an ecological collapse of the entire ecosystem.” Dr. James Porter, marine biologist

8. “When scientists say they’re researching climate change and coral reefs, it’s not about whether or not climate change is happening or not. It’s really the uncertainty between knowing whether it’s going to be bad or really bad.” Professor Ove Hoegh-Guldberg, coral reef biologist

9. “Losing the Barrier Reef has actually got to mean something. You can’t just let it die. Then it becomes an old textbook. It’s got to cause the change that it deserves. Us losing the Great Barrier Reef has got to wake up the world.” Richard Vevers

10. “Ocean scientists are distraught. We have the science, we have the numbers, we have the knowledge. We are sounding the alarm.” James Porter, marine biologist

11. “We live at a unique moment in time where we can change history.” Professor Ove Hoegh-Guldberg

12. “It’s not too late for coral reefs and indeed other ecosystems that are facing challenges from climate change. It’s still possible to reduce the rate at which the climate is changing. And that’s within our power today.” Professor Ove Hoegh-Guldberg
CULMINATING ACTIVITY: GLOBAL CLIMATE CHANGE ACTION STORY MAP

Learning Goals:

- We are learning to use the geographic inquiry process so that we can select, organize, interpret and analyze information from sources that are relevant to our investigation.
- We are learning to use spatial technology skills so that we can communicate the results of our research in an everyday context.
- We are learning to make connections between climate change and human activities in the world so that we can develop ideas for reducing our Earth’s vulnerability to climate change.

Imagine you are a member in the United Nations Environment Programme (UNEP) and it is your responsibility to prepare vulnerable communities for a changing climate. Your task is to suggest ways for reducing global communities’ vulnerability so that social, economic and environmental risks are minimized. To present your ideas, you will create a Story Map using ArcGIS online.

Part 1: Gather and evaluate data on global climate change, coral bleaching and global impacts.

Find three articles about how climate change affects different vulnerable global communities (Caribbean, Australia, South East Asia, etc.). Answer the five Ws (observe, infer and explain) and summarize each article in one or two sentences.

Why care? What will climate change mean for global communities?

a. Analyze the global impacts caused by a changing climate by using a Venn diagram to identify potential social, environmental and economic issues.

b. Highlight three notes that are most likely the most devastating and immediate.

Part 2: Plan your Story Map.

In this step, you will use your analysis of the local impacts of climate change to develop a strategy for action on ways to prepare for and adapt to climate change in three different global communities. Complete an organizer with the following headings to prepare your Story Map:

- What is where? Locate vulnerable areas (Use specific name of a coral reef, beach or island).
- Why there? Briefly describe how location is impacted by or vulnerable to climate change and identify changes that have been/can be adopted to reduce potential risks and impacts. Identify the impact and the adaptation/solution.
- Why care? Explain why action is necessary. Outline the potential social, environmental and economic implications for that community.
- Considering Story Map visuals, describe images that would best illustrate your impact/adaptation.

Part 3: Create Your Story Map.

A Story Map can be a powerful tool for situating issues in a spatial context. Your story map should be a minimum of three slides. To begin, go to the following web address: http://storymaps.arcgis.com/en/app-list/
# ACTIVITY RUBRIC: GLOBAL CLIMATE CHANGE ACTION STORY MAP

## Knowledge/Understanding

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
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<tbody>
<tr>
<td>8.0</td>
<td>Relevant information is recorded with a high degree of effectiveness; uses geographic perspective to demonstrate significance of climate change on global communities with a high degree of effectiveness</td>
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<tr>
<td>8.2</td>
<td>Relevant information is recorded with considerable effectiveness; uses geographic perspective to demonstrate significance of climate change on global communities with considerable effectiveness</td>
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<tr>
<td>8.5</td>
<td>Relevant information is recorded with some effectiveness; uses geographic perspective to demonstrate significance of climate change on global communities with some effectiveness</td>
</tr>
<tr>
<td>9.0</td>
<td>Relevant information is recorded with limited effectiveness; uses geographic perspective to demonstrate significance of climate change on global communities with limited effectiveness</td>
</tr>
<tr>
<td>10</td>
<td>Relevant information is recorded with a high degree of effectiveness; uses geographic perspective to demonstrate significance of climate change on global communities with a high degree of effectiveness</td>
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## Thinking/Inquiry

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<tbody>
<tr>
<td>8.0</td>
<td>Able to analyze and draw conclusions from research with a high degree of effectiveness; uses critical/creative thinking processes with a high degree of effectiveness</td>
</tr>
<tr>
<td>8.2</td>
<td>Able to analyze and draw conclusions from research with considerable effectiveness; uses critical/creative thinking processes with considerable effectiveness</td>
</tr>
<tr>
<td>8.5</td>
<td>Able to analyze and draw conclusions from research with some effectiveness; uses critical/creative thinking processes with some effectiveness</td>
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<tr>
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<td>Able to analyze and draw conclusions from research with limited effectiveness; uses critical/creative thinking processes with limited effectiveness</td>
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<td>10</td>
<td>Able to analyze and draw conclusions from research with a high degree of effectiveness; uses critical/creative thinking processes with a high degree of effectiveness</td>
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## Communication

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<tbody>
<tr>
<td>8.0</td>
<td>Story map communicates results of research to intended audience with a high degree of effectiveness</td>
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<tr>
<td>8.2</td>
<td>Story map communicates results of research to intended audience with considerable effectiveness</td>
</tr>
<tr>
<td>8.5</td>
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## Application

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<th>Score</th>
<th>Description</th>
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<tbody>
<tr>
<td>8.0</td>
<td>Transfers knowledge and skills as a member of UNEP with a high degree of effectiveness</td>
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<tr>
<td>8.2</td>
<td>Transfers knowledge and skills as a member of UNEP with considerable effectiveness</td>
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<td>8.5</td>
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**Comments:**

Total ____ /20 = ______ /100
# EXAMPLES OF CURRICULUM EXPECTATIONS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>OVERALL EXPECTATIONS</th>
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| Grade 7 & 8 Languages    |  • demonstrate an understanding of a variety of media texts.  
  • identify some media forms and explain how the conventions and techniques associated with them are used to create meaning.  
  • create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques.                                                                 |
| Grade 7 Geography       |  • analyze some challenges and opportunities presented by the physical environment and ways in which people have responded to them.  
  • use the geographic inquiry process to investigate the impact of natural events and/or human activities that change the physical environment, exploring the impact from a geographic perspective.  
  • demonstrate an understanding of significant patterns in Earth's physical features and of some natural processes and human activities that create and change those features. |
| Grade 7 Science         |  • assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts.  
  • investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem.  
  • demonstrate an understanding of interactions between and among biotic and abiotic elements in the environment.                                                                 |
| Grade 8 Science         |  • assess the impact of human activities and technologies on the sustainability of water resources.  
  • demonstrate an understanding of the characteristics of the Earth's water systems and the influence of water systems on a specific region.                                                                                                 |
| Grade 9–12 English      |  • generate, gather and organize ideas and information to write for an intended purpose and audience.  
  • identify some media forms and explain how the conventions and techniques associated with them are used to create meaning.  
  • demonstrate an understanding of a variety of media texts.                                                                                                                     |
| Grade 9 Geography       |  • apply in everyday contexts skills, including spatial technology skills, developed through the investigation of Canadian geography, and identify some careers in which a background in geography might be an asset.  
  • analyze various interactions between physical processes, phenomena and events, and human activities in Canada.  
  • analyze characteristics of various physical processes, phenomena, and events affecting Canada and their interrelationship with global physical systems.  
  • describe various characteristics of the natural environment and the spatial distribution of physical features in Canada, and explain the role of physical analyze issues relating to the sustainability of human systems in Canada. |
| Grade 9 Science         |  • assess the impact of human activities on the sustainability of terrestrial and/or aquatic ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts.  
  • investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems.  
  • demonstrate an understanding of the dynamic nature of ecosystems, particularly in terms of ecological balance and the impact of human activity on the sustainability of terrestrial and aquatic ecosystems. |
| Grade 10 Civics | • analyze key rights and responsibilities associated with citizenship, in both the Canadian and global context, and some ways in which these rights are protected.  
• analyze a variety of civic contributions, and ways in which people can contribute to the common good.  
• analyze a civic issue of personal interest and develop a plan of action to address it. |
| Grade 10–12 Media Arts | • demonstrate an understanding of the critical analysis process by examining, interpreting, assessing and reflecting on media art works.  
• demonstrate an understanding of how media art works reflect personal and cultural identity, and affect personal, cultural and community values and their awareness of those values. |
| Grade 11 Geography | • assess quality of life in the selected region, including factors that contribute to quality of life and policies/programs that aim to improve it.  
• analyze issues associated with sustainability and stewardship of natural resources in the selected region.  
• analyze the role and involvement of intergovernmental organizations in the selected region.  
• explain how climate, including climate change, and natural hazards affect the selected region.  
• analyze the role of physical processes and human practices in maintaining a sustainable natural environment.  
• analyze the impacts of human activities on the Earth's physical processes and the natural environment.  
• analyze the influence of physical processes and features on human activity.  
• analyze impacts of physical processes and disasters on human and natural systems, locally, nationally and globally.  
• assess the role and effectiveness of various options for reducing the impacts of disasters on human populations.  
• describe how the Earth's natural systems change, and have changed, over various time scales, and explain some of the processes that cause these changes.  
• analyze strategies for the protection of natural and cultural resources that are essential to tourism, and assess their effectiveness.  
• analyze impacts of environmental conditions and concerns on the tourism industry.  
• use a variety of spatial technologies to help them assess human activities and plan and promote the sustainable use of the natural environment, including natural resources, in their local community or area.  
• use a variety of spatial technologies to analyze the impact of human activity on the environment in their local community or area and beyond, and identify possible solutions. |
| Grade 11 Media Studies | • demonstrate understanding of a variety of media texts.  
• deconstruct a variety of types of media texts, identifying the codes, conventions and techniques used and explaining how they create meaning. |
| Grade 11 Politics | • identify and analyze a political issue with the goal of developing a personal plan of action to address this issue.  
• identify a goal associated with the selected issue and construct an action plan to achieve that goal.  
• analyze and reflect on possible outcome(s) of their plan. |
| Grade 11 Science | • investigate environmental factors that can affect human health, and analyze related data.  
• demonstrate an understanding of various environmental factors that can affect human health, and explain how the impact of these factors can be reduced.  
• analyze selected current environmental problems in terms of the role human activities have played in creating or perpetuating them, and propose possible solutions to one such problem.  
• demonstrate an understanding of the ways in which environmental factors can affect human health and how their impact can be reduced. |
<table>
<thead>
<tr>
<th>Grade 12 Geography</th>
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<tbody>
<tr>
<td>• analyze strategies and initiatives that support environmental stewardship at a national and global level, and assess their effectiveness in promoting the sustainability of the natural environment.</td>
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<tr>
<td>• assess the impact of population growth on the sustainability of natural systems.</td>
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<tr>
<td>• analyze issues relating to the use and management of common-pool resources.</td>
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<tr>
<td>• assess various strategies used for protecting natural spaces and species, locally, nationally and globally.</td>
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<tr>
<td>• assess impacts of human population settlement on natural spaces and species.</td>
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<tr>
<td>• analyze relationships between the spheres of the Earth and the characteristics of ecosystems.</td>
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<tr>
<td>• analyze challenges involved in reducing pollution from human activities, and assess the effectiveness of various methods of pollution reduction.</td>
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<tr>
<td>• evaluate impacts of various types of pollution on the natural environment and on human health.</td>
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<tr>
<td>• describe key ecological and biological processes, and explain how they are affected by human activities.</td>
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<tr>
<td>• assess a variety of strategies for resolving environmental and natural resource management issues, locally, nationally and/or globally.</td>
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<tr>
<td>• apply spatial technologies to assess and support the sustainable use of natural and human environments.</td>
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<tr>
<td>• apply, and explain the role of, spatial technologies in analyzing environmental patterns and trends and making decisions related to sustainability.</td>
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<tr>
<th>Grade 12 Law</th>
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<tbody>
<tr>
<td>• analyze factors that influence the effectiveness of domestic and international environmental legislation.</td>
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<table>
<thead>
<tr>
<th>Grade 12 Politics</th>
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</thead>
<tbody>
<tr>
<td>• analyze how social, economic and geographic factors influence contemporary politics in and relations between various countries around the world.</td>
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<tr>
<td>• analyze the role of civic awareness and responsibility among citizens and non-governmental stakeholders in the national and international community.</td>
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<tr>
<td>• demonstrate an understanding of key challenges relating to various issues of national and global political importance and of the strategies and effectiveness of various non-governmental stakeholders, including NGOs, in addressing them.</td>
<td></td>
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<tr>
<td>• assess the importance of the contributions of individuals and other non-governmental stakeholders to national and global communities.</td>
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</tr>
</tbody>
</table>

The Overall Expectations listed above are from the *Ontario Curriculum*. Complete course descriptions, including all Overall and Specific Expectations can be found at: [http://www.edu.gov.on.ca/eng/teachers/curriculum.html](http://www.edu.gov.on.ca/eng/teachers/curriculum.html)