

13 CLIMATE ACTION



TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Climate change is the biggest threat to our development and well-being, impacting all life on the planet. The poorest and most vulnerable populations face the undue burden of adapting to climate change while dealing with economic impacts. Due to the global nature of this problem, we need global cooperation to find solutions, adapt to its effects and develop low-carbon pathways to a cleaner future. We need to align our attitudes, behaviours, and activities with sustainable principles in order to change our climate course.

TARGETS

- Ensure people, particularly vulnerable populations, are well prepared for hazards related to climate change and natural disasters.
- Address issues of climate change through government action and resource allocation.
- Improve education, awareness, and capacity of climate change action, impact reduction, and early warning systems.

“Climate change is not just a problem for the future. It is impacting us every day, everywhere.”

Dr. Vandana Shiva
Indian scholar and
environmental activist



LEARNING OBJECTIVES

- 1** Learners will understand the greenhouse effect as both a natural and human affected phenomenon caused by insulating layers of greenhouse gases.
- 2** Learners will understand the impact of human activities—on a global, national, local and individual level—on climate change.
- 3** Learners will be able to explain social, environmental, economic and ethical impacts of climate change.
- 4** Learners will be able to encourage others to protect the climate and collaborate on ways to make a difference.
- 5** Learners will be able to identify and promote climate-friendly policies and economic activities.

CURRICULUM CONNECTIONS

Media

How does the media portray climate change?

Environment

What are ways we as citizens can protect the rights of our environment?

Poverty, wealth and power

How does climate change relate to the poverty cycle?
How does climate change uniquely affect the poor?

Indigenous peoples

How are Indigenous communities being impacted by climate change?

Oppression and genocide

How is climate change linked to oppression?

Health and biotechnology

What are the biggest impacts of climate change on our health?

Gender politics

How is climate change a gendered issue?

Social justice and human rights

How are human rights affected by climate change?

Peace and conflict

How does climate change impact war and conflict around the world?



THE BIG QUESTIONS

1 Where did it begin?

- From rising temperatures and sea levels, to the number of casualties from climate-caused natural disasters, there are many ways we gauge the impact of human activity on **climate change** over time. The average temperature of the Earth's surface has increased by about 0.85°C in the last 100 years. Thirteen of the 14 warmest years ever on Earth were recorded in the 21st Century, with 2016 as the warmest year on record.¹
- Burning **fossil fuels** like coal, oil, and natural gas have increased the concentration of carbon dioxide. CO₂ in our atmosphere. To add to this, the destruction of our forests has reduced the amount of CO₂ we can absorb. **Greenhouse gases** are emitted into our atmosphere from natural and man-made sources, like CO₂, methane, nitrous oxide, and ozone. Over the past centuries, the impacts of man-made emissions in our atmosphere have increased. These gases contribute to the overall increase in temperature because they trap solar radiation from the sun in our atmosphere, warming our planet.²
- Because of this increase in temperatures, we have lost an average of 13.3 per cent of Arctic sea ice between 1981 and 2010.³ Arctic ice coverage is vital to the survival of vulnerable ecosystems, species, and communities in the North, but it is also important to humanity at large. Arctic ice caps help cool sea and air temperatures by reflecting the sun's radiation away from Earth. Without it, our global temperature is only going to rise faster. Melting ice caps also raise global sea levels, affecting low-lying coastal areas and cities.
- International political responses to climate change began at the Rio Earth Summit in 1992, with the development of the UN Framework on Climate Change, which targeted anthropogenic, or human-created, interference with the climate system. Targets to cap and decrease emissions for each country were established to control the amount of pollution and hold governments accountable for their actions. On April 22nd, 2016 (Earth Day), 175 Member States signed the Paris Agreement, aiming to reduce the pace of climate change and accelerate the actions and investments needed for a low-carbon future.



2 Why does this issue matter?

- **Climate change is more than an environmental issue**

While climate change has historically been framed as an environmental issue, its impacts are far-reaching for humanity. Loss of agricultural land due to drought impacts our **food security**; fresh water is increasingly becoming less accessible; climate change impacts our health and **sanitation**; and increases in natural disasters continue to threaten cities and populations. All of these adaptations require finances that could otherwise be invested into sustainable development to help prevent future issues.

- **Climate change is disproportionate**

Pollution doesn't discriminate. It travels through our ecosystems and across borders. Because of this, it **disproportionately** and unfairly impacts a large number of countries that are not responsible for the source of any gas, smog, or other effects. Many countries that are historically more responsible for producing greenhouse gas emissions are less vulnerable to its effects the effects of climate change. Countries that have less capacity to take action and respond are particularly vulnerable.

- **It's our mess and we need to clean it up**

The main sources of human activity that contribute to CO₂ emissions are the combustion of fossil fuels for transportation and energy. Changing our emissions levels will require collective action and following through on our commitments to increase energy efficiency, conservation, and switching to **renewable** resources, as well as programs to capture CO₂ from its sources. Reducing **deforestation** will support natural processes that capture CO₂ emissions such as through **transpiration**. Forests act as natural air filters and we must protect them..

- **Tackling climate change is integral to sustainable development**

Increases in **extreme climatic events**, such as droughts, storms, floods and landslides, will make it difficult to provide and secure our basic necessities such as fresh water, food security, and energy. Climate change reaches across all countries, however, poor and developing countries remain the most vulnerable to adverse effects and the least able to address the social, economic and environmental impacts. Climate action is extremely important because it affects all of us, and is interconnted with every other goal.



3 Who and what are affected?

- **Island states and coasts**

Coastal zones and island states are more negatively affected by climate change because of rising sea levels.⁴ If we experience a sea-level rise of about 40 cm by the 2080s, assuming increased coastal protection, 55 million people would be flooded annually in south Asia; 21 million in southeast Asia, the Philippines, Indonesia, and New Guinea; 14 million in Africa; and 3 million in the rest of the world.⁵

- **Farmers**

Increases in drought, flooding, and high temperatures have made agriculture one of the most susceptible sectors to climate change. Farmers play an important role in increasing food security, so building resilience is key to ensure they are able to handle the changes ahead. Countries that rely heavily on agriculture for their **gross domestic product (GDP)** will be particularly vulnerable to climate change.

- **Vulnerable populations**

People affected by **poverty** are more vulnerable to natural disasters because they often live in more hazardous places, have less protection, and may have fewer financial reserves, insurance or options. Poverty is a contributing factor to a person's level of access to resources to better cope with extreme weather events. **Gender**, in particular, plays a role in a person's vulnerability to climate change through the influence of gender roles on management of **natural resources**. Women are also more likely to bear the main impacts of increased **water scarcity** from climate change in their work and **nutrition**.⁶

“ The increasing frequency of extreme weather events, droughts and floods is in line with what climate scientists have been predicting for decades - and evidence is mounting that what's happening is more severe than predicted, and will get far worse still if we fail to act. ”

David Suzuki
Canadian environmental activist



4 What needs to be done?

- No single act will solve the problem of climate change. Addressing its impacts will take a serious reduction in greenhouse gas emissions through changes to our social, economic, political, and cultural systems.
- Policies and collaborative actions are needed to reduce our global energy consumption and help curb the amount of fossil fuels we consume. Raising taxes on fuel while offering reductions in other taxes can help change public perception of consumption. Governments need to seriously commit to their obligations under international policies and protocols if we are going to see any significant change in emission levels. Canada has agreed to a number of international environmental agreements that will address different aspects of these goals, but there is still a lot of work to be done.⁷
- As a resource-dependent sector, improvements to transportation play a huge role in reducing our carbon emissions. Using a **systems approach**, one way we can improve our transportation is by better connecting our urban centres within a city to reduce unnecessary CO₂ emissions.
- Developing renewable resources, such as biomass fuels, wind turbines, solar panels, and geothermal energy can help reduce reliance on **non-renewable sources** like coal and fossil fuels.
- Many business leaders around the world have identified climate change and environmental degradation as growing risks to business growth and development. Businesses are also developing solutions to climate change through innovation and long-term investment in energy efficiency and low-carbon development. Businesses can also be a part of the solution by decarbonizing their operations and **supply chains**.⁸ Innovations like electric cars and renewable energy sources have already come a long way, and will continue to help reduce dependence on fossil fuels.
- Society is playing its part by raising awareness on the issues and highlighting the personal and community responsibilities to prevent climate change. In order to change our consumption habits, we need to understand, decrease and offset our **carbon footprint**.



CONNECTION TO THE OTHER GOALS



Finding sustainable solutions within development requires attention to our impact on climate change at many different levels. Addressing climate change requires us to act in a number of sectors to innovate, invest in, and improve our resilience to climate change, while we decrease our emissions and reliance on fossil fuels.



The impacts of climate change also intersect with inequalities such as gender, poverty, food security, health and well-being. Understanding how climate change uniquely impacts these areas will help us improve the sustainability and inclusiveness of our solutions.

“It’s a collective endeavour, it’s collective accountability and it may not be too late.”

Christine Lagarde

French managing director, International Monetary Fund



Consequences of Inaction

- If left unchecked, climate change will reverse a lot of the progress made over the past years. It can also exacerbate current threats such as food and water scarcity, which can lead to conflict.
- Doing nothing will result in severe human, economic and climatic global consequences. It will end up costing us a lot more in every area if we don't take action now. Action now will protect our planet, help create more jobs and greater prosperity, ensuring better lives for all, while also reducing greenhouse gas emissions and helping build climate resilience.

REFLECTION AND ACTION QUESTIONS

- 1 How do you feel about the issue now that you know more about it?
- 2 How might this issue have been prevented? What could have been done differently?
- 3 How has this problem changed over time? Where do you see it going in the future?
- 4 What questions do you still have?

“ There’s one issue that will define the contours of this century more dramatically than any other, and that is the urgent threat of a changing climate. ”

Barack Obama
Former US President



RESOURCES

How to take action

- **Change your habits.** Be energy efficient and choose renewable power. Save electricity by turning off appliances and electronics when you're not using them, freeze fresh produce before it goes bad and replace inefficient light bulbs. Save gas by running all your errands at once and take advantage of your right to elect leaders who support sustainable policies and solutions.
- **Discover.** [Carbonmap.org](https://www.carbonmap.org) and see how **cartograms** are used to illustrate the gap between responsibility and vulnerability to climate change. Learn about different areas and brainstorm how to take action.
- **Calculate your carbon footprint** and learn how to offset what you cannot reduce using [Climate Neutral Now](https://www.climatecentral.org). Measure, reduce, offset.
- **Reduce, reuse, recycle.** Recycling paper, containers, electronic equipment, and batteries helps conserve energy and reduce pollution caused by resource extraction, manufacturing, and disposal. Print double-sided, recycle used cartridges, and donate equipment to other organizations.
- **Speak up.** Ask local and national decision-makers to support initiatives that don't harm people or the planet. Voice your support for policies and protocols that your government has yet to sign or haven't followed through on.
- **Support the movement by getting involved.** Join a March for Science, attend a rally for Earth Day, or host a fundraiser for an initiative tackling climate change in your local community or abroad. Use your voice and presence to make a difference.
- **Start a 'No Idling At School' campaign.** Learn about the negative effects of vehicle idling, share the knowledge around school, and encourage staff, students, parents and public transportation systems to turn off their vehicles while waiting. Have a team of students monitor traffic and parking lots to ensure the rule is followed and everyone is doing their part.
- **Start a composting program** at your school. Not only will you help promote responsible consumption, but you'll help the earth by providing nutrients back into the soil.
- **Host an art exhibit.** Use the various posters and graphic designs available from the [Global Goals website](https://www.globalgoals.org) or create art out of recycled materials. Enlist students and community members to showcase the impacts of climate change through art and help create awareness about climate change. Allow free access or fundraise by charging admission and donate the funds to a climate action organization!
- **Visit the [David Suzuki Foundation](https://www.david铃木foundation.org)** and learn how to take action by cutting your carbon emissions, travelling sustainably and going **carbon neutral**. All of these ideas can be adapted for the classroom and community.



Educational resources

- Visit the World's Largest Lesson for Goal 13 for multiple lesson plans, posters, and other visual materials. [The Impact of Pollution on Our Planet and Our Lives](#) (ages 11-14) is a lesson plan that has students explore different forms of pollution, plot locations on a world map, and learn how to prevent them in the future.
- [Canada in a Changing Climate: The Living World](#) (Grades 7-8) is a teachers' guide designed by Canada Science and Technology Museums Corporation, Canadian Geographic, and the Government of Canada for geography and science classes. The guide focuses on students developing a better understanding of the contributing factors of climate change and its effects on **biodiversity** and the living world. The guide includes background information on climate change, a glossary and key vocabulary, additional resources, strategic planning by province and a variety of engaging activities. Individual lesson plans and resources can be found [here](#).
- A number of [resources and methods](#) have been collected by Learning For Sustainable Futures (LSF). Targeted toward educators, LSF helps educators engage their students in addressing the increasingly complex economic, social and environmental challenges of today's world.
- The American [Public Broadcasting Service](#) and the National Aeronautics and Space Administration have a number of informative lesson plans for teaching and enhancing literacy about global climate change and Earth system change.
- Explore UNICEF's [Get Real on Climate](#) page (Grades 9-12) for a number of lesson plans and activities addressing climate change and exploring possible solutions.
- [Use Development and Peace's Climate Balloons activity with a group of 10-30 people. Students will critically analyze the local human causes of climate change while exploring their negative global impacts.](#)
- Try out [Clim'Way](#) with a group of older students throughout a semester or the school year. Students will explore issues such as: how and why is global warming accelerating, which human activities most affect greenhouse gas emissions and emission reduction strategies, how climate change affects our ecosystems, and how society might adapt to climate change. Issues are addressed while participants create and implement a climate plan for their virtual community – learning if 50 years will be enough to reduce consumption and adjust to new climate conditions.
- [Track your ecological footprint using Footprint Calculator](#), understand [Country Trends](#), and discover [case studies](#) from Global Footprint Network. These resources allow users to track how natural resources are used and how consumption, populations and more combine to affect our planet.



CASE STUDIES

1 Vanuatu

[Vanuatu](#), an island in the South Pacific Ocean, is home to the world's first climate change refugees. In 2005, the UN Environmental Programme reported that 100 villagers were forced inland because of rising sea levels. Vanuatu is already vulnerable to increased storm activity due to low lying geography and limited resources. **Capacity building** programs, such as the Pacific Adaptation to Climate Change, are laying the groundwork for Pacific communities to improve capacity on a local level, while pushing for climate change planning and activity at the national level.

2 Paris Agreement

Signed in 2016, the [Paris Agreement](#) is taking collective action for a common cause, combating climate change and promoting adaptation strategies for its effects. The agreement aims to keep global temperature increases well below two degrees strengthen the ability of countries to deal with climate change, develop new technological frameworks, and support the capacity for both developed and developing countries to combat climate change. The agreement was signed by 196 countries, including Canada, and is the largest agreement of its kind.

3 T'sou-ke First Nation

The T'sou-ke First Nation, located on the Southwest coast of Vancouver Island, B.C., wanted an autonomous energy grid and sustainable solutions for their community. The project is twice as large as any other solar project on the island. The visionary energy plan considers their impact seven generations into the future.

4 Canadian Physicians for Aid and Relief

Canadian Physicians for Aid and Relief are working in Tanzania's Rubana river and wetland region to promote integrated land rehabilitation and food security for local communities in the area, promoting awareness of the causes and consequences of environmental degradation. The rural farmers, half of whom are women, formed field schools to provide training designed to rehabilitate the land and riverbanks. They also introduced conservative agriculture practices so families can increase their crop yields and household incomes.



5 Primate's World Relief and Development Fund

The Primate's World Relief and Development Fund is working in Bangladesh to reduce climate change vulnerability by promoting resilience through local knowledge. This project is working with six vulnerable communities to enhance their resilience to future droughts, cyclones, and floods. Using strategic climate change adaptation for specific situations, the project promotes resilience among vulnerable households under climate stress conditions.

6 Prairie Wind Mennonite Church

Prairie Wind Mennonite Church is promoting resiliency by constructing a sand dam in Eastern Kenya. The Rift Valley of Kenya suffers from persistent drought and riverbeds dry up quickly. Sand dams create a natural reservoir during the rainy season, providing a year-round supply of water close to home. Local residents, particularly women and girls, are spared the daily trek to fetch water from a distant source.

End notes

¹https://www.nytimes.com/interactive/2017/01/18/science/earth/2016-hottest-year-on-record.html?_r=0

²<http://environment.nationalgeographic.com/environment/national-geographic-sustainability/carbon-footprint/>

³<https://climate.nasa.gov/vital-signs/arctic-sea-ice/>

⁴<https://www.youtube.com/watch?v=dq234w56n2o>

⁵<http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=674>

⁶<http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=674>

⁷<https://www.ec.gc.ca/international/default.asp?lang=En&n=0E5CED79-1#X-2015012010531411>

⁸http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/07/16-00055_Why_it_Matters_Climate_Action_Business_letter_size_1p.pdf