



CLIMATE CHANGE RESOURCES FOR TEACHERS



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Climate Change Resources for Teachers

*Climate change is a problem of global proportions whose solution may collectively be our greatest challenge.*¹

Climate Change Learning

Learning for a Sustainable Future accepts the consensus of the scientific community that human-induced climate change is underway and that impact at some level cannot be avoided. LSF also supports the view that the degree of harm resulting from human-induced climate change can be greatly decreased by taking action now and that action will be required for the foreseeable future.

Climate change is the most complex and wide-reaching challenge facing humankind today; it is essential that we help younger generations to be better equipped to take on this challenge and that we call on their energy, creativity and need to contribute to help us all take up the task.

While climate change presents educators with daunting challenges, these challenges also present valuable opportunities to evolve practice so that students have a sound understanding of climate change and get involved in contributing to solutions in their schools and communities.

Climate Change Presents Educators with Challenges & Opportunities

Complexity

The scope of climate change and its impacts is immense. Everything we do depends on a stable climate. Our understanding of climate change and its impacts requires an understanding of multiple related systems including physical (glaciers, rivers, sea levels), biological (terrestrial, marine) and human (agriculture, energy, health, economy).

A challenge of this complexity provides endless opportunities for learning, from dissecting the individual systems above, to developing critical thinking and media literacy skills, to exploring multiple sources of information to really comprehend the full scope of the issue

Emotions

Discussion of climate change can lead to feelings of fear and anxiety and cause people to distance themselves from the problem, leading them to disengage, doubt and even dismiss it. So how do we address emotions in the teaching of climate change?

Every individual is different, and emotional responses are influenced by the beliefs, worldviews, and existing emotions each individual brings to the table. Classroom cultures of trust must be created where the range of students' perspectives and questions students have on climate change can be expressed and explored through group knowledge building and critical reflection. There

¹ Weather, Climate and Climate Change: Key Themes in Education for Sustainability, Learning for a Sustainable Future, 2006, page 3.

are many ways to approach climate change; there is room for fear and hope, wonder and suspense, sadness and curiosity, and all the rest of human emotion.

Changing Worldviews

Addressing climate change requires us to question many of society's norms. This includes: how we define progress and the role of science and technology; capitalism, material growth and consumerism; exploitation of nature; and the dominance of individualistic values, such as freedom, independence, success, performance, social recognition, and comfort. An effective understanding of climate change will be transdisciplinary, apply systems perspectives, span from local to global considerations, and cultivate respectful ways of approaching contested positions—all approaches that are transferable to supporting students' development in other areas!

Conventional Schoolings vs Transformative Learning

Conventional teaching, based on information transfer and finding the “right” answers, does not align well with the complexity of climate change education. With the internet at their fingertips, students have access to more information than they could ever process. And society has not yet found the right answers when it comes to climate change. Our students need more.

Education reforms now promote strategies such as Transformative Learning, Education for Sustainable Development, 21st Century Global Competencies, and others that are better suited to tackling complex problems like climate change. These strategies often begin with the understanding and experiences that students bring with them. Educators, who themselves are grappling with climate change issues, take the role of facilitator and guide learners with their questions. School learning is brought into contact with the real world, allowing learners to cultivate creativity and innovation as they bump into real-life complexities. Students develop the attitudes and skill sets necessary to address challenges to which we don't yet have the right answers, the same skills they need to be successful individuals, citizens and entrepreneurs.

Climate Change Websites and Links for Educators

This selection of resources has been compiled based on a position of acceptance of climate change as a human-caused phenomenon that is currently negatively affecting the earth and its systems.

Understanding the Science of Climate Change	
What is Climate? Our scientists explain it all to an eleven-year old	https://www.iisd.org/ela/blog/commentary/climate-scientists-explain-eleven-year-old/
Vital Signs of the Planet	https://climate.nasa.gov/
Nine Pictures That Show How Climate Change Is Impacting Earth	https://futurism.com/nine-pictures-show-climate-change-impacting-earth/
NASA Images of Change	https://climate.nasa.gov/images-of-change?id=623#623-arctic-sea-ice-coverage-hits-record-low
The Guardian UK: The ultimate climate change FAQ	https://www.theguardian.com/environment/series/the-ultimate-climate-change-faq

Climate Change: Deeper Understanding and Possible and Ways Forward	
Resilience.org aims to support building community resilience in a world of multiple emerging challenges: the decline of cheap energy, the depletion of critical resources like water, complex environmental crises like climate change and biodiversity loss, and the social and economic issues which are linked to these. We like to think of the site as a community library with space to read and think, but also as a vibrant café in which to meet people, discuss ideas and projects, and pick up and share tips on how to build the resilience of your community, your household, or yourself.	http://www.resilience.org/
Union of Concerned Scientists was founded in 1969 by scientists and students at the Massachusetts Institute of Technology. By mobilizing scientists and combining their voices with those of advocates, educators, business people, and other concerned citizens, UCS has built a reputation for fairness and accuracy and amassed an impressive history of accomplishments.	https://www.ucsusa.org/global-warming/#.WpsFRHxG0dU

Non-Mainstream Canadian Media that Present Alternative Perspectives on Climate Change	
DeSmog Canada 's mission is to make complex energy and environment news accessible to Canadians and to shine a light on critical, under-reported stories.	https://www.desmogblog.com/
The Tyee is an independent news outlet that aims to “revive old-style, long-form reporting and shed light on the stories and solutions big media ignores.”	https://thetyee.ca/
National Observer is an independent journalism website with a strong emphasis on ethics and accountability.	https://www.nationalobserver.com/

Climate Change Deniers – Be Aware!	
Friends of Science is a Calgary-based organization that believes the sun is the main cause of climate change, not human activity.	https://friendsofscience.org/
Blog post: “Who needs old-time climate-change deniers when we've got the 'New Climate Denialism'?”	http://rabble.ca/blogs/bloggers/alberta-diary/2017/05/who-needs-old-time-climate-change-deniers-when-weve-got-new

Climate Change Classroom Learning Resources

Learning for a Sustainable Future (LSF) has identified and reviewed a wide range of climate change classroom resources, children's literature books and videos which are available on LSF's Resources for Rethinking (www.R4R.ca) database.

WWW.R4R.CA is a free online database which provides access to over a thousand excellent, peer-reviewed, curriculum-matched resources for educators from hundreds of publishers. These resources include lesson plans, activities, children's literature, and videos. Educators can search by language, jurisdiction, grade, subject, curriculum unit, and sustainability theme in order to get the perfect resource. About 6,600 teachers per month visit the R4R.ca website to access resources.



Climate Change Learning in Grades K-6

Climate change resources on R4R focus primarily on Grade 7-12. Although we believe climate change is an important issue to be taught at all ages, students younger than grade 7 may not have the developmental readiness to confront the full complexity of the problem. Our climate change resources for grades K-6 focus on the "building blocks" of climate literacy, helping teachers to introduce students to foundational concepts including weather, seasons, energy, habitats and responsible citizenship. These resources are intended to foster a strong, positive connection with the natural world and serve as a sound basis for increasing students' understanding of issues related to climate change. To find K-6 climate change resources on R4R, use the "Theme" search; "Climate Change" is a searchable theme under "Air, Atmosphere & Climate." You can then refine your search to explore specific grades or subjects.

Learning for a Sustainable Future (LSF) is a Canadian charitable organization whose mission is to promote, through education, the knowledge, skills, values, perspectives, and practices essential to a sustainable future. LSF has been working with the federal and provincial governments, universities, business, educators and youth across Canada to support Climate Change and Sustainable Development Education since 1991. LSF's innovative programs and strategic partnerships are reshaping education policy and transforming learning methods, helping students learn to address the increasingly difficult economic, social, and environmental challenges of the 21st century.

For further information on our programs, please contact us at:

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Climate Change Resources 2020

Elementary/Middle Level
Middle Level/Secondary

A. Lesson / Unit Plans

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
What in the World Is Happening to Our Climate	Follow up activities to the children’s book of the same title. Book introduces young readers to the basics of CC. Students collect data & graph data, build models to demonstrate impacts of sea level rise, calculate their greenhouse gas contributions & develop strategies to reduce emissions.	Elementary	Math & Science
Climate Leadership	This toolkit is designed to support climate change action by students. The basics of climate change science are provided along with support for personal climate change action projects in the areas of consumerism, food and transportation. <i>Subject content:</i> Climate vs Weather, Greenhouse gases, Climate change, Human impacts & individual solutions	Upper Elementary Middle	Upper Elementary Middle
How Will We Fix Climate Change	This teaching guide accompanies an episode from the podcast series “Tai Asks Why”, in which 7 th -grader, Tai Poole interviews scientists and friends to learn about the dangers of climate change and steps individuals can take to make a difference. <i>Subject content:</i> climate change, greenhouse gases, global warming, citizenship, government responsibilities	Upper Elementary Middle	Science, Geography, Social Studies
Polar Bears & the Arctic	Cross curricular look at the polar bear’s arctic habitat & effect of CC. Includes an action component	Upper Elementary	Science, Social Studies & Language Arts
Our Changing Climate	Comprehensive, multi-lesson unit. Balance of content & process. What it is. Causes & impacts, What to do	Upper Elementary	Science & Language Arts
Energy Leaders: Grade 7 Energy Solutions Module	Comprehensive 5-lesson inquiry into climate change. Topics investigated include evidence, causes, renewable energy as a solution, climate action.	Middle	Science
Next Generation Climate (6-8)	Provides videos, graphs, activities, games to explore evidence, causes, and impacts of CC. Includes action ideas	Middle	Science & Social Studies
Getting the Picture	Multi-media tool for individual examination of climate change. Videos, graphics & text examine the what, why, evidence & opportunities for action	Middle	Science
To What Degree	Students use photos from Can. Museum of Science & Tech to explore CC impacts in different sectors across Canada. Specific attention to mitigation, adaptation & action	Middle	Science
Climate Change in the Garden: One Seed at a Time	Students explore the effect of rising temperatures on food production through a number of hands-on activities. <i>Subject content:</i> climate change, ecosystems, plant growth, pollination cycles	Upper Elementary Middle Level	Science & Social Studies
Mission Five. How the Arctic is Changing	This Stem unit looks at how the arctic is changing in the context of climate change. <i>Subject content:</i> climate change, sea level rise and the Albedo effect	Upper Elementary Middle	Science
A Warmer World For Arctic Animals	Examines the impact of climate change on four arctic species and the resulting ripple effects that flow through the ecosystem.	Upper Elementary	Science & Social Studies

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
	<i>Subject content:</i> climate impacts, populations, ecosystem concept/dynamics	Middle	
Electricity Conservation & You	Students explore use and consequences of different renewable and non-renewable sources of electricity. <i>Subject content:</i> renewable vs. nonrenewable energy, causes and consequences of climate change, greenhouse effect, action plan to reduce emissions.	Middle	Science
Climate Challenge for 11 to 14 year olds	Students explore the impacts of climate change on communities around the world and the steps being taken to address them. <i>Subject content:</i> Climate change causes & impacts, adaptation, action plans	Middle	Social Studies & Science
Sow the Seed	Examines the impact of climate change on agriculture. Students grow plants and study various climate effects <i>Subject content-</i> plant growth, variables, hypothesis testing, impacts of climate change	Middle	Social Studies, Science & Math
Canada in a Changing Climate: The Living World	Students learn about the impact of climate change on food production in Canada. Through a variety of activities students take a critical look at the various threats that contribute to climate change and find solutions to the problems. <i>Subject content:</i> climate change cause & effect, mitigation & adaptation	Middle Secondary	Science
Canada in a Changing Climate: Society and Economy	Students explore causes & consequences of climate change including how to reduce risk and take advantage of opportunities. <i>Subject content:</i> climate change, mitigation, adaption, sustainable development, data analysis & management	Middle Secondary	Science & Math
Ch Ch Ch Changes	Challenges students to think about the effects of changing climate on sea ice in Canada's north and the related problems and challenges that result. <i>Subject content:</i> Climate impacts on northern life and culture, graphing, thermal expansion, indigenous perspective	Middle Secondary	Science, Math & Geography
Corals and Chemistry	Students explore the impacts of climate change on the oceans with particular attention to coral reefs. <i>Subject content:</i> carbon cycle, fossil fuels, ph, ecosystems	Middle Secondary	Science
Sunny Schools Resources	Multi activity resource that examines the climate change cause & effects around the world in the context of energy use. <i>Subject content:</i> Climate change, energy, renewable vs non renewable, carbon footprint	Middle Secondary	Science, Social Studies, Geography
What's All The Buzz About	How climate change effects disease transmission. <i>Subject content :</i> climate, Infectious disease – transmission & vectors:	Secondary Middle	Health, Social Studies, Science, Geography & Math
Climate Change, Poverty and Women	Examines climate change as a human crisis through activities that focus on how the most vulnerable are being affected. <i>Subject content:</i> climate change, adaptation, social justice, globalization, gender roles	Middle Secondary	Social Studies
The Heat is On	Examines correlation & causation within the context of climate change. Specific attention to impacts of human activity on climate. <i>Subject content:</i> climate change, fossil fuels, causation, correlation	Secondary	Science & Geography
Weather Makers	This comprehensive, 15-lesson unit addresses climate science, climate change causes & consequences and encourages students to act on their learning. <i>Subject content:</i> weather, climate, climate science, climate change	Middle Secondary	Science

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
Inuit Knowledge & Climate Change	Teacher's guide with classroom activities and assignments to support the film of the same name. The film describes the effects of global warming on Inuit life in the Arctic as told by elders & hunters. <i>Subject content:</i> global warming, climate change impacts, Arctic ecosystems, TEK	Secondary	Science, Geography, Aboriginal Studies
Climate Change Negotiations Game	Simulation in which students role play delegates to an international climate conference to negotiate an agreement. Realistic look at the complexity of the issue.	Secondary	Science, Geography & World Issues
What's My Carbon Footprint	Students use an on-line 'calculator' to determine their own carbon footprints and compare them with those from other regions/countries. Suggestions & support for action are included.	Secondary	Science, Geography & World I Issues
Climate Citizen Curriculum	Provides videos, readings, scientific reports, articles, blogs & role plays students use to better understand what goes into climate policy and negotiation. Topics explored include the carbon cycle, carbon budgets, climate targets, and the roles of technology, carbon tax and cap and trade in climate change mitigation and international climate negotiation.	Secondary	Science, Geography & World Issues
Exploring Canada's Energy Future	Up to date look at Canada's energy use now and projections for the future based on current data, trends and competing interests. Includes Indigenous perspectives	Secondary	Science & Geography
Climate Atlas of Canada	Toolkit to examine climate impacts & efforts in Canada. Includes video, documents & maps that explore impacts, adaptation & mitigation efforts in various regions of the country	Secondary	Science, Geography & World Issues
Adapting to a Changing World	Students assess individual and national opinions on climate change and explore strategies that communities are employing to adapt to aspects of climate change that are already affecting them or may affect them in the future. <i>Subject Content.</i> Climate change case study, adaptation, mitigation	Secondary	Science & Geography
Canada in a Changing Climate: The Living World	Students learn about the impact of climate change on food production in Canada. Through a variety of activities students take a critical look at the various threats that contribute to climate change and find solutions to the problems. <i>Subject content:</i> climate change cause & effect, mitigation & adaptation	Secondary	Science
Canada in a Changing Climate: Society and Economy	Students explore causes & consequences of climate change including how to reduce risk and take advantage of opportunities. <i>Subject content:</i> climate change, mitigation, adaption, sustainable development, data analysis & management	Secondary	Science & Math
Personal Consumption and Climate Change	This toolkit focuses on using photographs and a range of active teaching and learning approaches and strategies to examine the themes of climate change, personal consumption and responsible living. <i>Subject content:</i> consumption, ecological footprint, climate change, sustainable development	Secondary	Social Studies & Geography
Energy: Making Sustainable Choices	Decision-making approach to exploring sustainable energy choices in a Canadian context. <i>Subject content:</i> Energy sources & choices, energy supply & demand, energy use & climate change, fracking, oil sands, pipelines, renewable energy.	Secondary	Science, Geography & Social Studies
After Fukushima	Students explore the question-'should the disaster at Fukushima and others like it force us to take a step back & consider whether such a potentially dangerous energy source is worth the risk for the clean energy it provides. <i>Subject Content:</i> meeting energy demands, the pros & cons of nuclear power, climate change	Secondary	Science & Social Studies
Getting to the Core	Students analyze and graph ice core data to explore the link between atmospheric temperature and carbon dioxide. <i>Subject</i>	Secondary	Science, Geography & Social Studies

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
	<i>content:</i> Greenhouse effect, climate change, carbon cycle, graphing		
Climate Change in Photos	Students analyze and discuss photos to learn about the impact of climate change. <i>Subject Content:</i> Climate Change impacts and responses around the world, climate justice	Secondary	Science, Social Studies, Geography
Climate Change, Children and Youth	The resource features activities and support documents that address six interconnected themes as presented in the UNICEF UK's Climate Change Report 2008: Our climate, our children, our responsibility. <i>Subject Content:</i> climate change, developing world, food security, water, energy, sustainability	Secondary	Science, Geography & Social Studies
Connections to Climate Change in Grade 11 and 12 Science	Resource provides climate & energy activities connected to outcomes in Biology, Chemistry & Physics. <i>Subject content:</i> ocean acidification, bio-energy & energy transformation	Secondary	Science
Melting Ice	Examines the global causes and effects of melting ice. <i>Subject content:</i> global warming, sea level rise, Aboriginal perspectives, interconnectedness	Secondary	Science, Geography & Aboriginal Studies
The Buffer Zone: Acid Base Chemistry in the World's Oceans	How global warming effects marine environments: <i>Subject content:</i> acid- base theory, buffers	Secondary	Science
Penguins on Thin Ice	Provides materials for musical production dealing with climate change. <i>Subject content:</i> musical, dramatic and visual arts composition & presentation	Secondary	Music, Drama, Science
Local Connections to Global Issues: Health	Includes activities that bring to life current child health issues and how the spread of infectious disease is being impacted by changing climate. <i>Subject content:</i> Climate change, human health, infectious disease, global citizenship	Secondary	Science, Social Studies & Health
Tread Lightly: Low Carbon Lunch	Students examine the relationship between food choices & climate change and take action to reduce their carbon footprint. <i>Subject content:</i> carbon footprint, local food, healthy food, waste reduction	Secondary	Science & Home Economics
The Big Picture On Climate Change and Biodiversity	Students explore the relationship among climate change, biodiversity and human health. Resource includes a video component, simulation, outdoor activities & an action component. <i>Subject content:</i> ecosystems, human impacts, biodiversity, climate change, and human health	Secondary	Science
Natural Gas. A Cleaner Energy Solution or Just Another Fossil Fuel	Students gather information on natural gas, compare its emissions to those of other fossil fuels and use systems-based analysis to defend their position. <i>Subject content:</i> fossil fuels, bridge fuels, greenhouse gases, energy use	Secondary	Science & Geography
Understanding Climate Change in Grade 11 & 12 Geography	This resource provides information and inquiry-based activities concerning climate change. <i>Subject content:</i> climate change causes & effects	Secondary	Geography
Connecting Climate Change Through Rich Performance Tasks in Grade 10 Science	Another inquiry based approach to the study of climate change. Includes a look at the chemistry of climate change and an option of 2 culminating tasks. <i>Subject content:</i> climate change, transportation, forest management, environmental impact assessments,	Secondary	Science

B. Short Videos

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
Climate Change Connections	Entertaining presentation of CC basics: what, why, evidence, impacts, actions	Middle	Science

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
Unlimited Renewable Energy in the 21st Century	A documentary in which a group of passionate grade six students call on adults to take action to address global warming by moving away from fossil fuels.	Middle	Science
This Bulb	Natalie Portman, Kyra Sedgwick and Chloe Sevigny explain how small changes in lifestyle can help reduce greenhouse gas emissions.	Middle	Science
Kids vs Global Warming	Introduces a remarkable young teenager who crusades against global warming	Middle Secondary	Science & Social Studies
Climate Change, Wildlife and Wetlands	Impact of CC on Wildlife. Challenges students to "go outside" and examine how nature is changing. Students are also encouraged to adopt lifestyle choices and actions to help make a difference	Middle Secondary	Science
Climate 101. Causes & Effects	Explores the human impact and consequences of climate change for the environment and our lives. Particular attention is paid climate change and our oceans, weather, food, and health.	Secondary	Science
Immersive Mixed Reality-Climate Change	The video uses immersive mixed reality to 'transport' viewers across the globe to see the effects of climate change over time.	Secondary	Science & Geography
Is a Carbon Tax the Best Way to Slow Climate Change	Examines the pros and cons of a carbon tax and cap and trade system in addressing climate change. Students examine the issue and then participate in an on-line forum.	Secondary	Science & Geography
Planning for Climate Resilience	Illustrates how the planning profession is at the forefront of developing policy, capacity, and climate resilience within communities and environments across the country.	Secondary	Science & Geography
When Climate Change Hits Home	Visits Lennox Island, home to Prince Edward Island's Mi'kmaq First Nation for more than 10,000 years that now finds itself on the front lines of Canada's battle against climate change.	Secondary	Science, Geography, Aboriginal Studies
Inuit Knowledge & Climate Change	Elders and hunters examine impacts of global warming on the arctic. The film explores social and ecological aspects of the changing climate and reveals a good deal about the culture & expertise in traditional ecological knowledge	Secondary	Science & Geography
Life on a Shrinking Island	Provides powerful evidence of the impacts of CC in Canada....it's smallest province. Great lead into mitigation/adaptation	Secondary	Science, Geography & World Issues

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
Immersive Mixed Reality Climate Change	Narrator is immersed in virtual reality experience of melting glaciers and sea level rise due to climate change. Very effective	Secondary	Science, Geography & World Issues
Climate 101 Causes and Effects of Climate Change	Examines human impact & consequences of climate change.	Secondary	Science & Geography
Climate Change in Great Bear Lake	Excellent case study of climate change impacts in the north. Highlights the contribution of TEK in documenting and understanding the impacts of CC	Secondary	Science, Geography, Aboriginal Studies
Adapting to A Changing Climate	Interviews & case studies from around the world illustrate the need for and potential of climate change adaptation	Secondary	Science
The End of the Arctic	Contributes to our understanding of how climate change is impacting the Arctic. Highlights TEK.	Secondary	Science, Geography, Aboriginal Studies
The Big Thaw	This video uses an effective combination of visual and narrative to introduce students to the Arctic as a unique bio-region and what the changes there tell us about climate change.	Secondary	Science & Geography
Climate Change Adaptation: It's Time for Decisions Now	This video serves to make students aware that the effects of climate change are here and there is urgency in considering how we are to adapt to this reality	Secondary	Geography & Social Studies
Global Warming: It's All About the Carbon	The 5-part video package delivers entertaining chemistry lesson on the behavior of the carbon atom and its role in global warming	Secondary	Science & Geography
Can Animals Adapt to Climate Change	This Ted Ed Talk examines how plants and animals are adapting to our changing climate. Supports teaching of evolution in HS (Biology)	Secondary	Science

Resource Title	Synopsis	Curriculum Connections	
		Grade Level	Subject Area
Climate Change 101 with Bill Nye	Bill Nye explains what causes climate change, how it affects our planet, why we need to act promptly to mitigate its effects, and how each of us can contribute to a solution.	Secondary	Science
Chasing Ice	Graphic illustration of the melting of arctic ice	Secondary	Science & Geography
Global Warming: A Way Forward	Images used to illustrate consequences of climate change and the future scenarios that are possible	Secondary	Science, Geography & Social Studies
How to Feed the World in 2050	Examines the relationship between climate change and sustainable agriculture	Secondary	Science, Geography & Social Studies
Biodiversity & Climate Change	Examines cause and effect relationship between climate change and biodiversity	Secondary	Science, Geography & Social Studies
When a Town Runs Dry	Documents the effects of severe drought on lives of those living in a small farming community	Secondary	Science & Geography
What's the Deal with Fossil Fuels	Fossil fuels. What they are. Why they are a problem. Steps for reducing reliance	Secondary	Science

C. Outdoor Activities

Resource Title	Synopsis	Curriculum Connection	
		Grade Level	Subject Area
Maple Trees & Marmots	A role-playing game to illustrate how changes in weather can affect the plants and animals- <i>Subject content:</i> characteristics of plants & animals, seasonal changes, effects of climate change	Elementary	Science
Arctic Survivor	Students role-play polar bears and their interactions with habitat components as they compete for food, water, shelter and space. <i>Subject content:</i> , population	Upper Elementary Middle	Science, Math & Physical Education

	dynamics, adaptation, ecosystem concept, climate change		
Climate Change Scavenger Hunt	Students participate in a scavenger hunt designed to help them learn more about their local environment. <i>Subject content:</i> climate change basics, leadership, teamwork	Middle	Science & Physical Education
The Carbon Dioxide Game	Based on the game of tag, this simulation effectively demonstrates the role and source of greenhouse gases and how humans are enhancing the greenhouse effect. <i>Subject content:</i> Carbon dioxide, greenhouse gases, human impacts on climate	Middle	Science & Physical Education
Carbon Cycles	In this game, students follow the path of carbon through the carbon cycle to learn where carbon is stored and how it circulates. <i>Subject content:</i> Carbon cycle, greenhouse gases, human impact on climate	Middle Secondary	Science & Geography
The Role of CO₂	In this simulation, students take on the roles of different components of the earth's surface and atmosphere in order to demonstrate in concrete terms, the greenhouse effect and how human activity is affecting it. <i>Subject content:</i> composition of the atmosphere, types of energy, greenhouse effect, climate change	Middle Secondary	Science & Geography
Climate Change Dodgeball	Students participate in an adapted game of dodgeball to show how increasing greenhouse gas concentrations causes global warming. <i>Subject content:</i> Greenhouse gases, global warming, human impacts	Middle Secondary	Science & Geography
Greenhouse Gas Game	Using a life-sized game board (provided), students are introduced to natural and enhanced sources of three of the most common greenhouse gases and their climate impacts. <i>Subject content:</i> greenhouse gases, greenhouse effect, climate change, stewardship	Middle Secondary	
Getting Outside with Physics	Students record vehicle drop-off times at their school as context for discussions of vehicle efficiency and CO ₂ emissions. <i>Subject content:</i> data collection, greenhouse gases	Secondary	Science

D. Children's Books

Resource Title	Synopsis	Curriculum Connection	
		Grade Level	Subject Area
Judy Moody Saves the World	Judy Moody wonders how one person can "heal the world". The story chronicles her personal efforts.	Elementary	Literacy, Language Arts, Science
What in the World is Happening to Our Climate	Explains the basics of climate change through and engaging story of the travel adventures of a young girl and her friends	Elementary	Literacy, Language Arts, Science

My Wounded Island	The book explores the themes of climate change and relocation as well as describing the daily lives of the Inuit people who inhabit the island of Sarichef.	Elementary	Literacy, Indigenous Studies, Science, Social Studies
How We Know What We Know About Our Changing Climate	Introduces young people to current climate change research. Emphasis is placed on the importance of citizen science	Middle	Science, Geography, Geography
Siberia	The novel describes a world of the future where climate change and habitat destruction have ravaged the Earth. Rosita and Mama struggle to eke out an existence in their bleak environment.	Middle	Literacy, Language Arts, Science & Social Studies
Ship Breaker	Many problems resulting from climate change are exposed in this suspense novel based on salvage practice known as 'ship breaking'	Secondary	Literacy, Language Arts, Science & Social Studies

E. Other Tools

Resource Title	Synopsis	Curriculum Connection	
		Grade Level	Subject Area
Climate Kids	Interactive website composed of games, activities and quizzes to inform students about climate change issues and support individual action.	Upper Elementary Middle	Science
Climate Change and Invasive Species	Aided by a good deal of background information & materials, small groups of students are tasked with developing a game that illustrates how climate change and invasive species impact the local economy, biodiversity and environment in their area.	Middle Secondary	Science & Geography
Climate Change Denial	A group activity that explores the issue of climate change denial, what lies behind it, the danger it poses and what might be done to combat it	Secondary	Science & Psychology