



Climate Change 10 – Local Action

| | |
|---|---|
| Developed by: Colin Abbott, Bob Sharp, Mark Connell, Merran Smith (CYFN), Chris Stacey (YFNED) Brian Horton (Yukon University Climate research) | Date Developed: July 20, 2022 |
| School Name: Wood Street Centre | Signature of Superintendent: |
| Committee Approval Date: August 2, 2022 | Committee Chair Signature: |
| Course Name: Yukon Climate Change – Local Action | Grade Level of Course: 10 |
| Number of Course Credits: 4 | Number of Hours of Instruction: 110 |

Department Authorized Prerequisite(s): n/a

Special Training, Facilities or Equipment Required: n/a

Course Synopsis: The Yukon Climate Change 10 course outlines broad range processes that have accelerated the rate of climate change, the environmental impacts associated with these changes, mechanisms that may mitigate such impacts and adaptations designed to cope with anticipated changes.

Goals and Rationale:

Yukon Climate Change 10 seeks to inform students about the many dimensions of climate change and engage them in monitoring, mitigation and adaptation actions with their family and neighbors.

Yukon First Nations Perspectives:

The knowledge and experiences of Yukon First Nations provide intimate insights to the impacts that climate change is having on the Yukon environment. Indigenous people have been stewards for and caretakers of the land for countless generations and have known that climate has always been changing – but are now seeing and experiencing the impact that human interference with natural processes is having on climate change. This course seeks to include First Nation perspectives and the specific actions of First Nations in addressing the causes and impacts of climate change

BIG IDEAS

Burning fossil fuels formed millions of years ago has led to an increase of greenhouse gases in the atmosphere exacerbating climate change

Atmospheric changes are changing global and regional weather patterns and environments

Political, social, and economic systems are needed to dramatically reduce greenhouse gas emissions

Yukon First Nations values, ways of being and relationship with the land and water provide insights into how to respond and understand the effects, causes and impacts of **climate change**

Individuals, communities and governments should collectively monitor, mitigate and adapt to the impacts of climate change

Learning Standards

| Curricular Competencies | Content |
|---|---|
| <p><i>Students are expected to do the following:</i></p> <ul style="list-style-type: none"> • Use social and scientific inquiry processes and skills to ask questions; gather, interpret, and analyze ideas about climate change in the Yukon; and communicate findings and decisions • Assess the significance of climate change impacts on local environments, economy, communities, infrastructure, and people, and explore the challenges these impacts may have on communities • Conduct an analysis of your family carbon footprint • Collectively assess how prevailing conditions and the actions of individuals or groups affect actions and climate change adaptations • Make reasoned ethical judgments about actions taken in response to climate change. • Use geographic inquiry processes and geographic literacy skills to ask questions; gather, interpret, and analyze data and ideas | <p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> • Addition of greenhouse gases to the atmosphere increases the rate and extent of climate change • Indigenous cultures understand that climate change has always occurred, but that human actions are now greatly exacerbating the rate and extent of the changes • Climate change brings changes to global, regional and local weather, environments, and biosphere • Governments (First Nation, municipal, territorial, and federal), economic institutions, communities and individuals all need to work together to address climate change • Individual actions are an essential part of limiting climate change but are not sufficient on their own • Individual actions need to examine all aspect of life (home, clothing, travel, food, and work) with respect to |

from a variety of sources and spatial/temporal scales; and communicate findings and decisions

- Assess the significance of places by identifying the physical and/or human features that characterize them
- Assess the interpretations of geographic evidence after investigating points of contention, reliability of sources, and adequacy of evidence
- Evaluate how climate change actions or events affect human livelihood practices and communities in Yukon, including the impacts on First Nations traditional practices and communities
- Identify and assess how human and environmental factors and events influence each other
- Understand the intent of community governance, Yukon Government, Yukon First Nations, and Yukon University with respect to climate change issues
- Manage their concerns, and anxiety through help from others and developing personal and collective resilience, knowing that they will be able to take action to address climate change

their carbon footprint

- Yukon First Nations traditions and relations to the land provide insights into the increasing rate of climate change and ways of addressing these changes
- Mitigation addresses the reduction of greenhouse gases while adaptation addresses changes that can be made to reduce impacts of climate change

Big Ideas – Elaborations

Indigenous peoples are among the first to face the direct consequences of climate change, due to their dependence upon, and close relationship, with the environment, and its resources. **Climate change** exacerbates the difficulties already faced by Indigenous communities, including political, and economic marginalization, loss of land and resources, human rights violations, discrimination, and unemployment

Curricular Competencies – Elaborations

Content – Elaborations

Addition of greenhouse gases to the atmosphere increases the rate and extent of climate change

- Fossil fuels were hydrocarbons formed through photosynthesis (CO₂ and water combined) of ancient plants and phytoplankton during the Carboniferous Period, approximately 286 – 360 million years ago
- When these died and were covered by sediment, they became trapped hydrocarbons storing the carbon dioxide they took from the air for millions of years ago
- Coal, oil and natural gases recovered from earth deposits are fossil fuels
- Burning fossil fuels put this ancient carbon dioxide back into the atmosphere
- Gases such as CO₂, water vapour and methane act as greenhouse gases that trap the sun's energy, causing the atmosphere to warm
- Increased greenhouse gases in the atmosphere changes the movement and cycles and processes which result in changes to climate, landscapes, ecosystems and communities
- Human activities have dramatically changed climate, weather, and environments
- Simulations and positive feedback systems show a devastating degradation of global environments unless dramatic action is taken now

Climate change brings changes to global, regional and local weather, environments, and biosphere

- Climate change results in melting of glaciers and icecaps adding water to the oceans
- Recognize risk associated with a rise in ocean levels and acidification, flooding, fire and extreme weather events
- Melting of permafrost releases methane to the atmosphere adding to greenhouse concentrations
- Identify a range of Yukon environmental changes related to changing climatic conditions and recognize the mechanisms associated with these changes
- Yukon First Nations land-based experiences provide insights into the changing rate of changing climates, hazards associated with these changes, and ways to cope with change

Content – Elaborations

- Climate changes bring a wide variety of environmental changes that pose corresponding stresses to populations and natural environments
- Attribution science predicts how climate changes may result in extreme weather events

Governments, economic institutions, society and individuals need to urgently responses to climate change

- Governments, economic institutions, society and individuals contributing to greenhouse gas emissions are slow to change.
- Overcoming such resistance is an essential and urgent element in mitigating climate change
- Fossil fuels provide a relatively inexpensive, transportable, and available energy source much of society depends upon
- Reduction in the consumption of fossil fuels is essential in mitigating climate change
- Social and psychological stresses are created by prospects associated with climate change
- Yukon First Nation are developing a variety of strategies addressing climate change
- The health and wellbeing of individuals and communities is affected by climate change and there are uneven impacts on Indigenous peoples and vulnerable demographic groups

Individual actions are an essential part of limiting climate change

- Calculating your family carbon footprint and examining ways to reduce your carbon footprint are important steps in addressing climate change
- Making and implementing plans to accommodate local extreme weather events, warming environments, seasonal changes is a complex long-term project
- Developing such plans require changes in behavior that require individual and community resilience developed through problem solving, monitoring effectiveness, recognizing and learning from failures, learning from failures and persisting to addressing problems
- Mitigation addresses the reduction of greenhouse gases while adaptation addresses changes that can be made to reduce impacts of climate change.
- Recognize the essential relationship between mitigation and adaptation
- Understand and practice behaviors associated with listening and learning from elders
- Global, national, regional, local and individual climate change actions require collaboration
- Climate change mitigation and adaptation actions require collectively, individual/family actions
- Collectively develop climate change action plans for family and community

Recommended Instructional Components:

Recommended Assessment Components: Ensure alignment with the [Communicating Student Learning E-book](#) and the [Principles of Quality Assessment](#)

Learning Resources:

- https://www.cakex.org/sites/default/files/2018EcoAdapt%20CCAC%20Tool%20FINAL_SPREADS.pdf
- Overview of problem: <https://www.youtube.com/watch?v=cJ-J91SwP8w>
- IPCC Climate Model evaluations: https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter09_FINAL.pdf
- Indigenous Climate Hub: <https://indigenousclimatehub.ca/> - helpful resources and information on climate change, and a space where resources, information, and impactful climate change stories from Indigenous perspectives are shared

Additional Information: