Eco 360 Curriculum Connections

Activity 1: What is a Circular Economy?

Alberta

- Chemistry 30: Unit C Chemical Changes of Organic Compounds - 30-C2.3 sts explain how science and technology have both intended and unintended consequences for humans and the environment
- Social 10-1: 3.2 - recognize and appreciate the impacts of globalization on the interdependent relationships among people, the economy and the environment
- Grade 9 Unit C: Environmental Chemistry - 3. Analyze and evaluate mechanisms affecting the distribution of potentially harmful substances within an environment

Ontario

- Grade 9 Chem (C1.2)
- Grade 9 Bio (B1.2)
- Grade 9 Geography
  - B1.The Physical Environment and Human Activities: analyze various interactions between physical processes, phenomena, and events and human activities in Canada
  - C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada (FOCUS ON: Interrelationships; Geographic Perspective)

Activity 2: What are Plastics?

Alberta

- Grade 7: Unit A Interactions and Ecosystems - 1. Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
- Grade 9: Social Studies 9.2.5 - How does individual consumer behaviour impact quality of life (e.g., environmental issues)?

Ontario

- Grade 9 Geography
  - E1.The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada (FOCUS ON: Interrelationships; Geographic Perspective)

Activity 3: Different Types of Plastics

Alberta

- Science 20 Unit A: Chemical Changes
  - 20-A3.1k identify materials used in daily life that are based upon Alberta's petrochemical industry and that involve changes in energy
- Grade 9 Unit C: Environmental Chemistry
  - 3 - Analyze and evaluate mechanisms affecting the distribution of potentially harmful substances within an environment

Ontario

- Grade 9 Geography
  - E1.The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada (FOCUS ON: Interrelationships; Geographic Perspective)

Activity 4: Properties of Plastics

Alberta

- Science 20 Unit A: Chemical Changes
  - 20-A3.1k identify materials used in daily life that are based upon Alberta's petrochemical industry and that involve changes in energy
- Grade 9 Unit C: Environmental Chemistry
  - 3 - Analyze and evaluate mechanisms affecting the distribution of potentially harmful substances within an environment

Ontario

- Grade 9 Chem (C1.1, C1.2, C2.2, C2.3, C3.4)

Activity 5: Sources of Plastic Waste in the Environment

Alberta

- Grade 9 Unit C Environmental Chemistry
  - 1. Investigate and describe, in general terms, the role of different substances in the environment in supporting or harming humans and other living things
- Bio 20 and 30

- All units in Bio 20 and 30 have an STS outcome (science, technology and society) - explain how science and technology have both intended and unintended consequences for humans and the environment

Ontario

- Grade 9 Geography
  - C3. Industries and Economic Development: assess the relative importance of different industrial sectors to the Canadian economy and Canada's place in the global economy, and analyze factors that influence the location of industries in these sectors (FOCUS ON: Spatial Significance; Patterns and Trends)
  - E1.The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada (FOCUS ON: Interrelationships; Geographic Perspective)

Activity 6: Plastics in the Environment

Alberta

- Grade 9 Unit C Environmental Chemistry
  - 1. Investigate and describe, in general terms, the role of different substances in the environment in supporting or harming humans and other living things
- Grade 8 Unit E- Freshwater and Saltwater Systems
  - 4. Analyze human impacts on aquatic systems; and identify the roles of science and technology in addressing related questions, problems and issues
- Bio 20 and 30
  - All units in Bio 20/30 have an STS outcome (science, technology and society) - explain how science and technology have both intended and unintended consequences for humans and the environment

Ontario

- Grade 9 Bio
  - B2.3/B2.4 Expectations - how human activity affects water quality & soil composition/soil fertility

Activity 7: Plastics in Our Oceans

Alberta

- Grade 8 Unit E- Freshwater and Saltwater Systems
  - 4. Analyze human impacts on aquatic systems; and identify the roles of science and technology in addressing related questions, problems and issues
- Bio 20 and 30
  - All units in Bio 20/30 have an STS outcome (science, technology and society) - explain how science and technology have both intended and unintended consequences for humans and the environment

Ontario

- Grade 9 Geography
  - B1.The Physical Environment and Human Activities: analyze various interactions between physical processes, phenomena, and events and human activities in Canada.
  - C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
- Grade 9 Bio
  - Unit B1.1/B2.4/B3.5

Activity 8: What Is Your Plastic Consumption Footprint?

Alberta

- Chem 20, 30 and Bio 20, 30
  - All units in Chem 20/30 and Bio 20/30 have an STS outcome (science, technology and society) - explain how science and technology have both intended and unintended consequences for humans and the environment

Ontario

- Grade 9 Geography
  - C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
- Grade 9 Bio B1.2
- Grade 10 Chem C1.2
- Grade 10 Bio B1.3

Activity 9: Policy Action: Circular Economy for Plastics

Alberta

- Social 10-1
  - 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)

Ontario

- Grade 9 Geography

- C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
- Grade 9 Chem (C1.2)
- Grade 9 Bio (B1.2)
- Grade 10 Bio (B1.3)

Activity 10: Plastic Waste to Energy

Alberta

- Science 30 Unit D Waste and the Environment
  - 30-D1.3k apply the concept of sustainable development to increase the efficient use of energy

Ontario

- Grade 9 Geography
  - E1.The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada
  - E2. Impacts of Urban Growth: analyze impacts of urban growth in Canada (FOCUS ON: Spatial Significance; Geographic Perspective)
- Grade 9 Bio (B1.2)
- Grade 10 Bio (B1.3)

Activity 11: Plastic Waste to Consumer Goods

Alberta

- Biology 30 Unit D: Population & Community Dynamics
  - 30-D2.1sts explain why Canadian society supports scientific research and technological development to facilitate a sustainable society, economy and environment
- Social 10-1
  - 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)

Ontario

- Grade 9 Geography
  - C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
  - E1.The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada

Activity 12: Plastic Waste Management in Canada

Alberta

- Biology 30 Unit D: Population & Community Dynamics
  - 30-D2.1sts explain why Canadian society supports scientific research and technological development to facilitate a sustainable society, economy and environment
- Social 10-1

- 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)

- Chemistry 30: Unit C Chemical Changes of Organic Compounds
  - 30-C2.3 STS outcome - explain how science and technology have both intended and unintended consequences for humans and the environment

Ontario

- Grade 9 Geography
  - C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
  - E1.The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada
- Grade 9 Bio (B1.2)
- Grade 10 Bio (B1.3)
- Grade 9 Bio (B3.5)

Activity 13: Circular Economy, Sustainability and Climate Action

Alberta

- Biology 30 Unit D: Population & Community Dynamics
  - 30-D2.1sts explain why Canadian society supports scientific research and technological development to facilitate a sustainable society, economy and environment
- Social 10-1

- 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)

Ontario

- Grade 9 Geography
  - C1.The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
- Grade 9 Bio (B1.2, B2.3, B2.4, B3.5)
- Grade 10 Bio (B1.3)

Activity 14: Reimagining Economy Using Biomimicry

Alberta

- Biology 30 Unit D: Population & Community Dynamics
  - 30-D2.1sts explain why Canadian society supports scientific research and technological development to facilitate a sustainable society, economy and environment
- Social 10-1
  - 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)

Ontario

- Grade 9 - Academic Science
  - B1. 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;

- Grade 10 Bio (B1.3)