

Inquiry Sample on Resource Development

CURRICULUM CONNECTIONS:

(note: this is just to provide an example of how this particular topic can be used in any of these curricular areas. The inquiry would need to reflect the appropriate grade level in terms of content, however, the general topic can apply to any of these subject areas)

Gr 4,5,6 Social Studies, Science & Technology

Gr 7 Science & Technology

Gr 7-12 Geography

Gr 11 Environmental Science

GR 4 SOCIAL STUDIES:

People and Environments: Political and Physical Regions of Canada

B1. Application: assess some key ways in which industrial development and the natural environment affect each other in two or more political and/or physical regions of Canada

B2. Inquiry: use the social studies inquiry process to investigate some issues and challenges associated with balancing human needs/wants and activities with environmental stewardship in one or more of the political and/or physical regions of Canada

GR 5 SOCIAL STUDIES:

People and Environments: The Role of Government and Responsible Citizenship

B1. Application: assess responses of governments in Canada to some significant issues, and develop plans of action for governments and citizens to address social and environmental issues

B2. Inquiry: use the social studies inquiry process to investigate Canadian social and/or environmental issues from various perspectives, including the perspective of the level (or levels) of government responsible for addressing the issues

GR 6 SOCIAL STUDIES:

People and Environments: Canada's Interactions with the Global Community

B2. Inquiry: use the social studies inquiry process to investigate some global issues of political, social, economic, and/or environmental importance, their impact on the global community, and responses to the issues

GR 7 GEOGRAPHY:

Physical Patterns in a Changing World

A1. Application: analyse some challenges and opportunities presented by the physical environment and ways in which people have responded to them

A2. Inquiry: 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

A3. Understanding Geographic Context: 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

Natural Resources Around the World: Use and Sustainability

- B1. Application: analyse aspects of the extraction/harvesting and use of natural resources in different regions of the world, and assess ways of preserving these resources
- B2. Inquiry: use the geographic inquiry process to investigate issues related to the impact of the extraction/harvesting and/or use of natural resources around the world from a geographic perspective
- B3. Understanding Geographic Context: demonstrate an understanding of the sources and use of different types of natural resources and of some of the effects of the extraction/harvesting and use of these resources

GR 8 GEOGRAPHY:

Global Settlement: Patterns and Sustainability

A1. Application: analyse some significant interrelationships between Earth's physical features and processes and human settlement patterns, and some ways in which the physical environment and issues of sustainability may affect settlement in the future

A2. Inquiry: use the geographic inquiry process to investigate issues related to the interrelationship between human settlement and sustainability from a geographic perspective

A3. Understanding Geographic Context: demonstrate an understanding of significant patterns and trends related to human settlement and of ways in which human settlement affects the environment

Global Inequalities: Economic Development and Quality of Life

B1. Application: analyse some interrelationships among factors that contribute to global inequalities, with a focus on inequalities in quality of life, and assess various responses to these inequalities

B2. Inquiry: use the geographic inquiry process to investigate issues related to global development and quality of life from a geographic perspective

B3. Understanding Geographic Context: demonstrate an understanding of significant patterns in and factors affecting economic development and quality of life in different regions of the world

GR 4 SCIENCE & TECHNOLOGY:

Understanding Life Systems: Habitats and Communities

1. analyse the effects of human activities on habitats and communities;
2. investigate the interdependence of plants and animals within specific habitats and communities;
3. demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them.

Understanding Earth and Space Systems: Rocks and Minerals

1. assess the social and environmental impacts of human uses of rocks and minerals;

GR 5 SCIENCE & TECHNOLOGY:

Understanding Matter and Energy: Properties of and Changes in Matter

1. evaluate the social and environmental impacts of processes used to make everyday products;

Understanding Earth and Space Systems: Conservation of Energy and Resources

1. analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources;

GR 6 SCIENCE & TECHNOLOGY:

Understanding Life Systems: Biodiversity

1. assess human impacts on biodiversity, and identify ways of preserving biodiversity;
3. demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.

GR 7 SCIENCE & TECHNOLOGY:

Understanding Life Systems Interactions in the Environment

1. Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
2. Investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem;

GR 9 ACADEMIC GEOGRAPHY

Strand B: Interactions in the Physical Environment

B1. The Physical Environment and Human Activities: analyse various interactions between physical processes, phenomena, and events and human activities in Canada

Big Ideas: People have different beliefs about the impact of human actions on the natural environment and global systems

Framing Question: How do the natural characteristics of Canada influence human activity, and how might human activity influence Canada's natural characteristics?

Strand C: Managing Canada's Resources and Industries

C1. The Sustainability of Resources: analyse impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada

Big Idea: The way Canada's resources are used has a direct impact on the availability of resources for the future.

Framing Question: How do we balance our needs and wants with sustainable resource development?

C2. The Development of Resources: analyse issues related to the distribution, availability, and development of natural resources in Canada from a geographic perspective

Big Idea: People have different points of view about how Canada's natural resources should be developed

Framing Question: What criteria should we set for the extraction and development of Canada's natural resources?

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 analyse factors that influence the location of industries in these sectors

Big Idea: Canada's economic well-being relies on the development of both natural and human resources

Framing Question: Which resources and industries would you consider to be most valuable to Canada?

GR 9 APPLIED GEOGRAPHY

Strand C: Managing Canada's Resources and Industries

C1. Managing Resources: assess the influence of personal choices and community actions on the use of natural resources in Canada

Big Idea: Individuals can influence how natural resources are used

Framing Question: How can you change your way of living to reduce your consumption of resources?

C2. Canadian Industries: describe the economic, environmental, social, and political significance of selected aspects of Canada's resources and industries

Big Idea: People have different points of view about the value of different industries and their use of resources

Framing Question: What roles do various industries play in your community?

C3. The Use of Natural Resources: describe the distribution and use of selected natural resources in Canada

Big Idea: Canada has a wide variety of natural resources, and they are used in many different ways

Framing Question: Which of Canada's natural resources do you think has the most important uses?

GR 11 FORCES OF NATURE: PHYSICAL PROCESSES AND DISASTERS

Strand C. The Physical Environment: Sustainability and Stewardship

C1. Renewing the Physical Environment: analyse the role of physical processes and human practices in maintaining a sustainable natural environment

Big Idea: The choices and actions of individuals, companies, and governments play a role in sustainability

Framing Question: Why do humans modify the natural environment?

C2. Human Impact on the Physical Environment: analyse the impacts of human activities on the earth's physical processes and the natural environment

Big Idea: Human activity has an impact on the natural environment

Framing Question: Do we have a responsibility to protect the earth?

C3. Human Use of the Physical Environment: analyse the influence of physical processes and features on human activity

Big Idea: The natural environment has an impact on human activity

Framing Question: How do personal beliefs and values affect the choices that an individual or a government makes about resource use and sustainability?

GR 12 WORLD ISSUES: A GEOGRAPHIC ANALYSIS

Strand C. Sustainability and Stewardship

C1. Strategies and Initiatives: analyse 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

Big Idea: Government policies and company practices that protect the environment play an important role in promoting sustainability

Framing Question: Why do individuals, companies, and governments continue to make unsustainable choices?

C2. Population Growth: assess the impact of population growth on the sustainability of natural systems

Big Idea: Population growth is increasing the human impact on the environment .

Framing Question: How might the environmental choices we make today have an impact on the world tomorrow?

C3. Caring for the Commons: analyse issues relating to the use and management of common-pool resources

Big Idea: Resources that are essential for life are key components of the global commons .

Framing Question: What is the global commons? What can we do to protect the global commons?

GR 12 THE ENVIRONMENT AND RESOURCE MANAGEMENT

Strand C. Sustainability and Stewardship of Natural Resources

C1. Policies and Strategies: analyse the roles and contributions of individuals, governments, and organizations with respect to the sustainable management of the world's natural resources

Big Ideas: Countries and companies must work together in order to manage natural resources sustainably

Framing Question: How do stakeholders work together to develop international policies or strategies that will help manage shared resources effectively?

C2. Development of Natural Resources: analyse impacts of resource development on the natural and human environment, and assess ways of managing resource development sustainably

Big Idea: Natural resource development can have social, economic, political, and environmental consequences

Framing Question: How might competing interests and ideas affect the ability to develop a resource sustainably?

C3. Availability and Use of Natural Resources: assess the availability of various natural resources, and analyse factors affecting their exploitation and use

Big Idea: The spatial distribution of natural resources often determines how they are developed and used

Framing Question: Why does the method of resource development depend on where the resource is located? What risks are associated with that method of extraction or harvesting, and what risks are specific to that location?

GR 11 ENVIRONMENTAL SCIENCE (SVN 3M)

Strand B Scientific Solutions to Contemporary Environmental Challenges

B1. analyse social and economic issues related to an environmental challenge, and how societal needs influence scientific endeavours related to the environment;

B2. investigate a range of perspectives that have contributed to scientific knowledge about the environment, and how scientific knowledge and procedures are applied to address contemporary environmental problems;

B3. demonstrate an understanding of major contemporary environmental challenges and how we acquire knowledge about them.

Strand C Human Health and the Environment

C1. analyse initiatives, both governmental and non-governmental, that are intended to reduce the impact of environmental factors on human health;

C2. investigate environmental factors that can affect human health, and analyse related data;

C3. demonstrate an understanding of various environmental factors that can affect human health, and explain how the impact of these factors can be reduced.

GR 11 ENVIRONMENTAL SCIENCE (SVN 3E)

Strand B Human Impact on the Environment

B1. analyse 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;

B2. investigate air, soil, and water quality in natural and disturbed environments, using appropriate technology;

B3. demonstrate an understanding of some of the ways in which human activities affect the environment and how the impact of those activities is measured and monitored.

Strand C Human Health and the Environment

C1. analyse the effects on human health of environmental contaminants and a significant environmental phenomenon;

C2. investigate how different environmental factors can affect people's health and their lifestyle choices;

C3. demonstrate an understanding of the ways in which environmental factors can affect human health and how their impact can be reduced.

Strand E Natural Resource Science and Management

- E1. assess the environmental impact of the harvesting and/or extraction of resources, including ways of reducing this impact, and analyse threats to the sustainability of natural resources;
- E2. investigate methods scientists use to classify and monitor natural resources, and conduct investigations using those methods;
- E3. demonstrate an understanding of the sustainable use of resources and its relationship to the biodiversity and sustainability of ecosystems.

Provocation for Inquiry: Is there such a thing as responsible resource extraction?

Over a series of lessons expose students to Indigenous perspectives on relationship to the land. At the same time, students can be investigating environmental issues relating to resource extraction in Canada (ie. mining, fracking, drilling for oil etc.).

Throughout their investigations, students should be encouraged to explore concepts around rights vs responsibilities. For example:

- Do we have the right to extract resources as we see fit?
- Should the environment have rights that are protected?
- Should animals, plants, water have rights?
- How can we ensure those are protected?

Throughout their investigation of an environmental issue associated with resource extraction, provide students with guiding questions that could include:

- What is the direct and potential impact on the environment?
- What is the company's justification for the need of the resource?
- What is the company's counter argument regarding environmental impact?
- What is the mitigation plan? How do they propose to clean up after they are done?
- What is the company's corporate social responsibility policy?
- If a company violates environmental laws or causes damage, how are they held accountable?
- How are First Nations communities consulted prior to beginning work?
- What are the federal and provincial governments involvement?
- Does this conflict with Indigenous views on land use?
- How does the resource project impact local First Nation communities?

Students can demonstrate their learning and present their findings using a variety of forms such as:

- Multi-media presentation (poster board, brochure, power point, interactive essay etc.)
- Awareness campaign (school level, community level, or beyond)
- Debating both sides of the issue
- Blog

Examples of environmental issues associated with resource development:

Grassy Narrows logging and mercury poisoning

Elsipogtog First Nation and fracking

Fort Nelson First Nation and fracking

Tr'ondek Hwech'in, Vuntut Gwitchin First Nation and the First Nation of Nacho Nyak Dun and fracking

Attawapiskat First Nation and diamond mining

Serpent River First Nation and uranium mining
Nishnawbe Aski Nation and mining
Athabasca Chipewyan First Nation and tar sands
Poundmaker First Nation and Onion Lake Cree Nation and oil and gas
Cree Nation of Waswanipi and logging
Aamjinaang First Nation and chemical valley

Examples of Indigenous Knowledge on the environment:

Inaaknigewin: An Agreement With Mother Earth:

<http://www.helpingourmotherearth.com/chapter-1-inaaknigewin.html>

How We Conduct Ourselves:

<http://www.helpingourmotherearth.com/inaaknigewin.html>

Knowing Our Responsibilities: <http://www.helpingourmotherearth.com/inaaknigewin-responsibilities.html>

The Great Law - Responsibilities vs Rights:

<http://www.helpingourmotherearth.com/the-great-law.html>

Managing the Earth: Taking a Look at Our Actions:

<http://www.helpingourmotherearth.com/chapter-9-final-thoughts1.html>

Our True Purpose on Earth:

<http://www.helpingourmotherearth.com/our-true-purpose-on-earth.html>

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