



Lesson Plan: Rethink, Grade 7 Geography

Activity

Analyze the production process of a popular household item.

Introduction

Many of the products available to consumers today are made up of natural resources. These products are often designed for one-time use, illustrating the traditional linear product development system. In this system we take a natural resource, make it into something, and then dispose of the item when it is no longer needed or wanted. This linear system is unsustainable, generates mass amounts of waste, and places additional pressure on the already stressed natural environment. To alleviate this pressure, Durham Region is moving towards a circular economy to manage our household waste. This includes rethinking how we view and use natural resources with the understanding that natural resources are limited.

In this lesson, students will analyze a popular household item by considering the entire lifespan of the product including its production process, whether it is sustainable, and the potential environmental costs of the product.

Curriculum Connections

Geography, 2018 (revised)

Grade 7

- Strand A: Physical Patterns in a Changing World
- Strand B: Natural Resources Around the World: Use and Sustainability

Learning Objectives

1. Assess why Rethink is the most preferable option in the Region's Waste Management Hierarchy.
2. Describe different Rethink practices.
3. Demonstrate an understanding of linear and circular economic systems.
4. Create a plan to Rethink waste.

Resources Provided (located in the resource folder)

- Infographics:
 - 5Rs in the Waste Hierarchy
 - What is a circular economy?
- Videos:
 - Durham Region's 5Rs Video
 - The Circular Economy
 - Rethink

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Materials Required

- One common object from home

Activity Instructions

Prior to Activity

1. Ask students to bring in an object from home. Examples of an acceptable item include an article of clothing, a pen, a toy, a plastic bottle, a metal can, etc.
2. Introduce the term natural resources.

Natural resources are resources that are found in nature and can be used by people. This includes resources like water, animals, plants, soil, the sun, wind, and minerals.

Natural resources help humans meet many of their needs, providing food, energy, transportation, and shelter. Most natural resources need to be processed and manufactured to become the items we use. Other resources, like some plants, can be picked and used right away.

3. As a class, create a list of natural resources.
4. Ask students to define **renewable** and **non-renewable** resources.

Renewable resources are resources that can be replaced in our lifetime. Some examples of renewable resources include plants, trees, animals, soil, water, wind, and the sun.

Non-renewable resources are resources with a limited supply that cannot be replaced in our lifetime after we have used them up. Some examples of non-renewable resources include oil, rocks, minerals, and coal.

5. As a class, categorize each natural resources they listed above as a renewable or a non-renewable resource.
6. Lead a class discussion focusing on how various natural resources are extracted. How might these activities change the physical environment? What impacts might this have on the local community?
7. The Region is one local organization attempting to manage resources carefully. Watch Durham Region's 5Rs Video to learn more.
8. As a class, discuss the linear product development system.

The **linear product development system** is a straight line in which we take a natural resource, make it into something, and then dispose of the item when it is no longer needed or wanted.

9. Introduce students to a circular economy.

A **circular economy** is a closed loop economic system aimed at minimizing waste and making the most of our resources. In this type of system, all waste is recovered and reused to make

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new products. This approach replaces the current linear product development system where products are made, used, and then disposed.

10. As a class, watch the Circular Economy video provided in the resource file.
11. As a class, discuss how a circular economy differs from a linear economy. How can we, as consumers, rethink waste to support a circular economy? What are some questions we can ask ourselves before buying something new?

Day of Activity

1. Split the class up into groups of four (4) students.
2. Students will share what item they've brought with their group.
3. Once everyone in the group is done sharing, they will collectively select one item to use for the rest of the activity.
4. Give each group 30 minutes to research the following topics about their chosen item:
 - a. What are the steps of the production process? Students should consider steps ranging from the extraction of raw materials to distribution.
 - b. What materials are needed to produce the item and where do each of these materials come from?
 - c. What natural resources were needed to create the product? Are they renewable or non-renewable resources?
 - d. Does the production process pose any environmental concerns and how are these concerns addressed? Explain.
 - e. What happens to the item post-consumption? Does the company have any plans in place to manage their waste?
5. Have an open discussion for students to share their findings with the class.

Extension Activity

Independently, have students imagine they are environmental consultants hired by the company of their researched item. Design a plan to suggest three (3) changes anywhere along the **commodity chain** (gathering resources, transforming them into goods or commodities, and distributing them to consumers) that the company can make to rethink waste and transition to more sustainable natural resource extraction and use.

Summary

Rethink focuses on how we view and use natural resources with the understanding that natural resources are limited. Rethink means challenging our current policies, processes, and actions, and focusing on innovative ways to redesign and improve systems to better the environment and the economy. Rethinking waste allows us to move towards a healthier planet, conserve raw materials and prevent waste before it is created.

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Expanded Curriculum Connections

Grade 7, Geography, 2018 (revised)

A. Physical Patterns in a Changing World

A2. Inquiry: Investigating Physical Features and Processes

- A2.1 formulate questions to guide investigations into the impact of natural events and/or human activities that change the physical environment, ensuring that their questions reflect a geographic perspective
- A2.5 evaluate evidence and draw conclusions about the impact of natural events and/or human activities that change the physical environment
- A2.6 communicate the results of their inquiries, using appropriate vocabulary

B. Natural Resources Around the World: Use and Sustainability

B1. Application: Natural Resources and Sustainability

- B1.2 analyse natural resource extraction/harvesting and use in some specific regions of the world, including the sustainability of these practices
- B1.3 assess the efforts of some groups, agencies, and/or organizations in helping to preserve natural resources
- B1.4 create a personal plan of action outlining how they can contribute to more sustainable natural resource extraction/harvesting and/or use

B2. Inquiry: Investigating Issues Related to Natural Resources

- B2.1 formulate questions to guide investigations into issues related to the impact of extraction/harvesting and/or use of natural resources around the world from a geographic perspective
- B2.2 gather and organize data and information from a variety of sources on the impact of resource extraction/harvesting and/or use, ensuring that their sources reflect more than one perspective
- B2.5 evaluate evidence and draw conclusions about issues related to the impact of natural resource extraction/harvesting and/or use around the world
- B2.6 communicate the results of their inquiries using appropriate vocabulary (*e.g., non-renewable, renewable, flow resources; extraction; sustainability; deforestation; fossil fuels; aquifer*) and formats appropriate for specific audiences

B3. Understanding Geographic Context: Using Natural Resources

- B3.1 identify Earth's renewable, non-renewable, and flow resources (*e.g., renewable: trees, natural fish stocks, soil, plants; non-renewable fossil fuels, metallic minerals; flow: solar, running water, ocean currents, tides, wind*) and explain their relationship to Earth's physical features
- B3.3 identify short-and long-term effects of natural resource extraction/harvesting and on people and the environment
- B3.5 describe some responses to social and/or environmental challenges arising from the use of natural resources

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