



Lesson Plan: Energy from Waste, Grade 11 Regional Geography (CGD3M)

Introduction

Durham Region is comprised of eight area municipalities: Ajax, Brock, Clarington, Oshawa, Pickering, Scugog, Uxbridge, and Whitby, with a mix of both urban and rural communities. The Region has a population of approximately 700,000 residents and is set to grow to approximately 1.2 million residents by 2041. As the Region continues to grow and change, we want to ensure our waste services evolve to meet these needs and challenges.

Learning Objectives

1. Demonstrate an understanding of Energy from Waste and how garbage is processed to recover energy
2. Assess the effectiveness of Energy from Waste at reducing the amount of waste being sent to landfill
3. Analyse how population growth might affect waste generation within your community
4. Discuss waste management challenges associated with growing populations
5. Describe ways to increase public awareness and promote participation in diversion programs

Resources Provided

- [Durham York Energy Centre Website](#)
- [Energy from Waste Process Overview](#)
- [Durham York Energy Centre Virtual Tour](#)

Questions

1. How effective is the DYEC at reducing the amount of waste being sent to landfill?
2. What additional materials does the DYEC recover for recycling and how is this achieved?
3. As the population grows, how might this growth affect waste generation within your community?
4. What waste management challenges might the Region face with this growing population?
5. How might the growth in rural municipalities versus urban municipalities impact waste management services differently?
6. How could the Region and its residents prolong the need to expand the Durham York Energy Centre?
7. Describe 5 methods to increase public awareness and promote participation in diversion programs to remove items from the garbage. Rate these methods from most effective to least effective and explain your reasoning.
8. What factors do you think need to be considered planning additional waste diversion programs? Examples may include cost, accessibility, environmental impacts, logistics, and infrastructure.

The Regional Municipality of Durham - Waste Management Services

If this document is required in an accessible format, please contact schoolprograms@durham.ca

9. Why do you think it is important to manage waste produced by Durham Region residents within the Region's own boundaries?

Summary

As the Region continues to grow and change, we want to ensure our waste services evolve to meet these needs and challenges. Together, with our residents, we will reduce the amount of waste we create and manage the generated waste as a resource. We will build an innovative system, balancing financial needs and environmental sustainability.

Curriculum Connections Expanded

The Ontario Curriculum, Grades 11 and 12: Canadian and World Studies, 2018 (revised)

Regional Geography, Grade 11, University/College Preparation (CGD3M)

A. Geographic Inquiry and Skill Development

- A1. Geographic Inquiry: use the geographic inquiry process and the concepts of geographic thinking when investigating geographic issues in a selected region

B. Natural and Human Systems

- B2. Patterns of Natural and Human Systems: describe patterns in natural features and population distribution in the selected region, and analyse the relationship between them

C. Sustainability and Stewardship

- C1. Sustainability and Stewardship of Natural Resources: analyse issues associated with sustainability and stewardship of natural resources in the selected region