

CAN THAT SKANKY LANDFILL SMELL REALLY KILL YOU?

By: Michael Fox, July, 2007
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Estimated Sessions: 85 minutes

Grade Levels: 9-12

Purpose: To teach students about the *facts* behind offensive odors associated with landfills.

National Geography Standards addressed:

14-B Explain the global impacts of human changes in the physical environment.

Indiana Social Studies Academic Indicators addressed:

Geography and History of the World

9.2 - Identify regional resource issues that may impair sustainability*, economic expansion, and/or diversification*.

Assess the impact of these issues on the physical and human environments of specific regions. Propose strategies for dealing with regional resources issues.

9.3 - Identify ways in which humans have used technology to modify the physical environment in order to settle areas in different world regions. Evaluate the impact of these technologies on the physical and human environments affected.

Objectives: The students will be able to

1. successfully answer the questions on the Guided Reading Sheet and
2. demonstrate understanding by participating in class discussions on the topic.

Background: A good introductory statement may be found on the first page of the Guided Reading Sheet.

Materials Required:

- copies of the *Landfill Gas Primer* [or post the document on an Internet site for computer lab work] (Source of information: <http://www.atsdr.cdc.gov/HAC/landfill/html/ch3.html#1>)
- copies of the Guided Reading Sheet for each student

Procedures:

1. Begin by reading with the class the introductory paragraph on the top of the Guided Reading Sheet.
2. Next, have students work in groups to answer the Guided Reading Sheet.

Assessment:

- Collect the Guided Reading Sheets and award a grade for work.

Adaptations/Extensions/Call-Out:

- Have the students research landfills and create a classroom bulletin board depicting health and quality of life issues surrounding landfills. Relate to Science (Earth Science and Chemistry) academic standards.
- Have students research to discover what the nearest landfill to their school is. Use maps to calculate the distance “as the crow flies”. Collect data, using a GIS, to determine the number of households that the landfill serves (everyone’s trash must go somewhere). Also using a GIS, determine the number of households near the landfill. Also, Earth Science connections.
- Have students write a paper on their thoughts (must include both facts and feelings) about plans for a landfill being built near their home. The paper must incorporate Language Arts academic standards.

Resources:

- *Landfill Gas Primer* via the Internet (<http://www.atsdr.cdc.gov/HAC/landfill/html/ch3.html>)
- *Waste Disposal* by Luke Bassis, a brief article about waste disposal, percentages, landfill designs, and problems: <http://www.umich.edu/~gs265/society/wastedisposal.htm>
- EPA (Environmental Protection Agency) information about solid waste, municipal waste, combustion and incineration of waste: <http://www.epa.gov/msw/disposal.htm>