Drexel-SDP GK-12 ACTIVITY

Activity: McDonald's Project

Subject Area(s) **Environments**

Associated Unit **Environments, module 4**

Associated Lesson **embedded**

Activity Title **McDonald's Project**

Grade Level 6 (3-8)

Activity Dependency **None**

Time Required **100 minute lessons**

Group Size **2-3**

Expendable Cost per Group **None**

Summary

Students are divided into groups of four. Groups are told they were to pretend they were the owner of a McDonalds in West Philadelphia. Suppose congress passed a new law stating that no new landfills could be created, how will they change their stores to accommodate the new law? How will this affect their store financially? Students have to research their ideas, and prepare a power point presentation to present to the entire class on their idea.

Engineering Connection

Engineers are deeply vested in the sustainability of our manufacturing processes. Sustainability calls for the responsible use, disposal and recycling of raw materials to ensure their availability for future generations. Engineers design ways to recycle previously used materials to extend their life span. For example, engineers are involved in the recycling of plastic soda bottles to that the petroleum-based plastic may be used multiple times, reducing waste and the amount of raw materials used in the manufacturing of new bottles.

Keywords
Environment, recycling, environmental engineers, petroleum, plastics, landfills

Educational Standards

- Environments and Ecology: Renewable and nonrenewable resources 4.2.A. Uses, 4.2.B. Availability, 4.2.C. Management, 4.2.D. Influential factors
  Environmental Health 4.3.A. Environmental health issues, 4.3.B. Human actions, 4.3.C. Biological diversity
  Humans and the Environment 4.8.A. Societal needs, 4.8.B. Sustainability, 4.8.C. Human impacts, 4.8.D. Supply and demand
- Science: Technology Education – Science, Technology and Human Endeavors – Meeting Human Needs 3.8.B, Science, Technology and Human Endeavors – Consequences and Impacts 3.8.C

Pre-Requisite Knowledge

None.

Learning Objectives
Students will practice researching, making and giving a power point presentation
Students will identify recyclable, reusable and waste materials.

Materials

Laptops/computers with networking
Projector
PowerPoint

Introduction / Motivation

Students are divided into groups of four. Groups are told they were to pretend they were the owner of a McDonalds in West Philadelphia. Suppose congress passed a new law stating that no new landfills could be created, how will they change their stores to accommodate the new law? How will this affect their store financially? Students have to research their ideas, and prepare a power point presentation to present to the entire class on their idea.

Review the background material with the students, discuss the vocabulary, then begin the activity.

Vocabulary / Definitions

Word	Definition
Environmental engineering	The application of science and engineering principles to improve the environment (air, water, and/or land resources).
landfill	A method for final disposal of solid waste on land. Garbage is placed in holes in the ground and covered over.
Petroleum	A material made from petroleum capable of being molded, extruded, or cast

plastics	into various shapes. Non-renewable resource.
Renewable resource	A material made from petroleum capable of being molded, extruded, or cast into various shapes.
Nonrenewable resource	A finite resource that cannot be replaced once it is used (for example, petroleum, minerals).

Procedure

Background
Lesson on landfills/recycling

Before the Activity
Load the PowerPoint presentation onto a computer.

With the Students

Method:

1. Project assignment: Assume that you are the owner of a McDonald's here in Philadelphia. The mayor has rules that no more waste will be allowed into the city landfills. How will you adapt your restaurant to meet these new rules? Will it cost you more or less money?
2. Groups will research and make a power point presentation on their results.
3. One day for brainstorming/research
4. Next lesson was a basic overview on how to make a power point presentation
5. Several classes for researching/ making the presentation
6. Presentations given to the entire class, then open for questions at the end.

Safety Issues
- None

Troubleshooting Tips
Help students to navigate the EPA website to the pertinent information.

Investigating Questions
See Activity Embedded Assessment

Assessment

Pre-Activity Assessment
None

Activity Embedded Assessment
Ensure students are working as a team to research their ideas.

Post-Activity Assessment

Based upon effort placed in research, creation of and giving the presentation by each member separately.

Activity Extensions
http://www.epa.gov/kids/

Owner
Drexel University GK-12 Program

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