Cost of Recycling

Each pair of students will trace 1 single recyclable product, from manufacturer to recycling center, examining costs of making the product and recycling it, answering the question: Is recycling worth it?

Grade Level: 9 - 11th
Subject: Environmental, Science
Length of Time: 3-4 Class Periods

Common Core Alignment
CCSS.ELA-Literacy.10.RST.2 -
CCSS.ELA-Literacy.10.RST.8 -
CCSS.ELA-Literacy.10.RST.7 -
CCSS.ELA-Literacy.10.RST.9 -
- (See note; not applicable as a separate requirement)

Objectives & Outcomes
The students will be able to trace a single recyclable product from manufacturer to the recycling center, identifying each step, its real cost, environmental cost, and other aspects of the product.

Materials Needed
Internet access or other resources, one recyclable product for each pair of students, display board and materials for class presentation (graphs, charts, etc.)

Prepare ahead of time: If possible, enough recyclable products to give one to each pair of students in the class (not absolutely necessary, but having the item makes it more real)(Aluminum can, plastic bottle, cardboard, newspaper, other paper, old cell phone, other metals, rubber, Styrofoam, etc.); rubrics to follow for presentations

Procedure
Opening to Lesson
- Display each recyclable product for students to see
• Ask students: How many of you use these products each day or week?
• Allow responses and discussion.
• Ask them how often they recycle the product, separating it from other trash, etc.

**Body of Lesson**

**Modeling**

• Ask students: Do you think it makes a difference to recycle?
• Allow for responses and discussion
• Ask students how they can find out the value of recycling
• Encourage students to also think about the value of recycling for the environment
• Allow for responses and a short discussion

**Guided Practice**

• Pair students
• Distribute one product to each pair of students
• Explain the assignment: The students will trace the item from manufacturer to the recycling center, identifying the cost involved along its path.
• Remind students to not only look at financial cost, but also the effect on the environment and other variables
• Have students use the Internet or other resources for researching the product
• Encourage students to use different terms for Googling or for using other search engines (For example, simply typing in “aluminum can” may not be sufficient, instead use “What is the cost of making (or recycling) an aluminum can?”.)
• Once research is completed, students are to create charts, graphs, or displays for use in a presentation to the class.
• Remind students they are to refer to the rubrics or assignment sheet making sure they answered all of the questions
• Plan times for presentations
• Following each presentation, discussion may follow

**Independent Practice**

• For homework, ask students to do a home search to discover how many items in their home are recyclable and to make a list of them. If unsure, if it is recyclable, they will do an Internet search by simply asking: “Are old “pillows” recyclable? Or other items.

**Closing**

Have students come up with alternative uses for recyclable products. For example, taking old soda cans and creating a wall or other structure by joining them together, old boxes turned into furniture or shelving. Use a class period building things out of recyclables.

**Assessment & Evaluation**

Assess the presentations based on pre-determined rubrics

**Modification & Differentiation**

Students may work alone/larger group. Same product for entire class. Half the class gets
one product, other half a second product. Do not give the product. Have students choose which product to use. Reports instead of class presentations or Power Point displays. Fieldtrip to a recycling center and/or a manufacturer of products. Assign one-half of the class to identify costs of manufacturing, other half researches the cost of recycling.

Related Lesson Plans

Six Degrees of Science Separation

Using a list of terms from all fields of science, the students will connect them in six or less steps to a non-science term, explaining scientific relationships during the process.

Eco-Friendly Homes

The student will work in groups of three or four to design an eco-friendly home.

Earth Window Art

This lesson will allow students to create a replica of the Earth that can also be used as decoration.

Words of the Environment

On day one, the students will list as many words as possible related to environmental science and on day two connect the meanings of each to real life situations based on research.