Introduction and Objectives

Whether it's green beans or an iPod—everything we purchase comes with a hidden costs—the resources used in its creation, packaging and transport to the store. Many items are packages within packages within packages leading to a lot of needless material waste. Other items may be imported from far regions of the globe, which means that a lot of energy was expended and a lot of carbon dioxide was emitted before the goods even reached the store shelves. Costs are also involved in product disposal—think about garbage dumps and landfills overflowing with mountains of stuff we no longer want.

The following exercise takes students through a set of stations that contain everyday products. Students are challenged to consider the hidden costs to the planet when selecting a product. At the conclusion, students can discuss their choices, tally up which items have the lowest cost to the planet and hear from the teacher as to costs they may have overlooked. Students can then visit the Strange Days on Planet Earth Interactive Market online and test their skills either during class or on their own time. Finally, the class is asked to work together and as a team to write its own “Green Sheet” that the students can share with their parents and friends to make their next shopping trip a green one.

Age Level: Ages 12 and up  
Required Time: 40 to 60 minutes  
Supplies: Chalkboard or whiteboard and pen. Worksheets and pencils for each student, kitchen timer or stopwatch, eight pieces of paper numbered one through eight. Access to a computer station--this can be during the activity or after. Copy machine. Products as described in activity stations below.  
Location: Any classroom, home or meeting place at informal learning center  
Set-up: Place the eight numbered pieces of paper at eight product stations around the room. Make enough Green Shopping Worksheets for each student.

Directions

Pre-activity Preparations
1. Ask students to call out what affect their decisions to buy a piece of clothing, a toy, food or whatever they might purchase. Give an example: Today you'd like to buy a new jacket. What kinds of things are you going to think about before actually spending the money? Write each suggestion up on the board or paper where so everyone can follow along.

Typical responses include:
- Price
- Style or color
- Quality and durability
- Brand
- Convenience or location of store
Pass out the worksheet and pencils. Tell the students that today's exercise is to go shopping with the goal of making choices that will have the smallest number of hidden costs to the planet. To guide them, briefly review the following concepts. (You can go into more depth after the students make their choices.)

- Reduce, reuse and recycle;
- Length of time it takes for plastic or other materials that make up common products to degrade;
- Renewable vs. non-renewable resources;
- Far-reaching planetary impacts of fossil fuel emissions;
- The amount of energy involved in making a product, and how this increases with the number of ingredients used to make that product.

To prepare for this discussion, the teacher may want to read through the Strange Days Interactive Market material online and draw from the many facts and figures associated with each product.

**The Activity**

Tell the students that eight stations have been placed around the room where they have to make a purchase. The goal is to purchase those items that have the lowest score in terms of hidden costs to the planet. Students must rank each product keeping the following four categories in mind: packaging, transport costs, pollutants or chemicals used and disposability.

Count the students off one to eight and have them start at the station that has their same number; this will be their group number of the whole exercise. Using their worksheets, have them fill in the products name and rank them at the stations with regard to either high or low. If a product has much impact on the environment, it gets a high rating of 3. If it has a low impact it gets a 1. Each station should have between two or four products to choose. Give the students a minimum of 2 minutes at each station.

Encourage the students not to get too hung up on getting the so-called right answers. Every purchase has grey areas (for example see accompanying note about organic produce in the Interactive Market) and some answers may vary from region to region and state to state. While every purchase comes with multiple issues, each station is designed to highlight one particular issue and offer a take-home message.

When the students are finished with all stations, have them go back to their original station and total their worksheets. Starting with the students at Station One (Group One) ask them, "Which items did you rank as being the most green?," and "The least green?" Ask for suggestions as to what other options may be even greener choices. Enhance the discussions with additional thoughts as suggested in the discussion points following every station below.
GO GREEN SHOPPING ACTIVITY

Compiled by Sea Studios Foundation www.seastudios.org
Sources: Activity inspired by naturalists Tammy Turner & Darrin Siefken, Bremer County Recycling & Bremer County Conservation Board

Station 1- Beverage Containers
- Plastic 20 oz (.6L) container
- Glass bottle
- Aluminum can
Discuss local bottle deposit regulations, recycling rates, and recyclable materials.

Station 2- Lightbulbs
- Incandescent lightbulbs
- Compact fluorescent bulbs
Discuss benefits of switching from incandescent to compact fluorescent light bulbs. Introduce students to energy-conscious brands such as the Energy Star Label. Discuss where local energy comes from: Does it come from burning coal or from nuclear energy? A majority of students may not understand the connection between leaving the lights on in a room and carbon dioxide emissions. (You might also consider showing the short YouTube film--This Bulb at http://www.youtube.com/watch?v=FvOBHMb6Cqc)

Station 3- Juice
- Single serving juice container made of plastic #4
- Large plastic container made of HDPE
- Juice in #1 clear plastic
Discuss materials used in single serving packaging, recyclability of containers and time required to decompose. Handout the Strange Days Smart Plastics Guide as reference sheet. Students can download their own copies directly from the Strange Days on Planet Earth website.

Station 4- Yogurt
- Plastic single serving yogurt containers labeled with #6
- Large yogurt container
- Inorganic yogurt with numerous ingredients
- Organic yogurt in a glass container
Discuss organic vs. non-organic, different types of plastic used in packaging and buying in bulk as opposed to single servings. Organic may not always be the best choice. Reference a “Note about Organics” in the Strange Days on Planet Earth Interactive Market for more details. Also you may want to suggest making your own yogurt using milk from a local dairy. It’s easy. Check out the easy tutorial at www.makeyourownyogurt.com.

Station 5- Chips
- Bag of organic chips
- Bag of inorganic chips
- Single-serving packages of any chips boxed in more packaging
Discuss bulk vs. single serving size, packaging costs and wastes, and organic vs. inorganic.
GO GREEN SHOPPING ACTIVITY

Station 6- School Notebooks
- Virgin recycled paper notebook
- Recycled-content notebook (various percentages)
- Chlorine-free recycled paper
Discuss the idea of buying recycled and “closing the loop” in manufacturing i.e. making sure the waste generated in the process finds other ways of being useful.

Station 7- Fruit or Vegetables
- Select fruit or vegetables with local, imported and organic labels
Discuss transportation, energy, and water costs and health implications of pesticides. You may want to bring up the connection of fertilizers to dead zones. See Strange Days on Planet Earth From the Episode section as well as the Interactive Market on the web.

Station 8– Bags
- Brown paper grocery bag
- Plastic grocery bag
- Organic cotton bag, hemp bag, reusable grocery sack made from recycled plastic
Discuss the hierarchy of reduce, reuse, then recycle as well as the kinds of resources used to make all three bags and how long they will last.

Consult the Strange Days on Planet Earth Interactive Market for facts and added discussion points.

Conclusion
After discussing the choices of each station, ask each group to write on the board one helpful hint to keep in mind when shopping. Have one student (with legible handwriting or a word processor handy) combine all the hints onto one document labeled Our Green Sheet and then copy or print that paper for each class member--preferably on recycled paper! Encourage the students to share the guide with their parents and friends and to consult it to make their next shopping trip a green one!
GO GREEN SHOPPING WORKSHEET

Name: ___________________________ Date: ____________

Instructions: Write each product description in the product column. Rate each one according to its impact on the environment. Use the scale of High impact (3), Medium impact (2) or Low impact (1). Lowest score wins!

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<th>Station Number</th>
<th>Products</th>
<th>Transportation costs</th>
<th>Pollutant Potential</th>
<th>Recyclability</th>
<th>TOTALS (Lowest score wins)</th>
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