

Lesson: Sustainable Products, Consumer Responsibility

EducationWorld is pleased to present this lesson shared by [the Get to Know Program](#), which inspires youth to discover the natural world by providing innovative programs, resources and events. The [original lesson plan](#) was developed in consultation with acclaimed artist and naturalist Robert Bateman and science consultants from the California Department of Education. The lesson appears on the Get to Know Program's Best Practices Resource Page, which provides teachers and parents with free, cutting-edge lesson plans, videos and interactive activities designed to connect children with nature through art, music, drama, writing, photography, video and nature journaling. Find more information, including a large selection of lesson plans, [here](#).

See another Get to Know lesson on EdWorld: [The Plants Around Us: A Science and Art Lesson](#).

Subjects

Science
--Populations, resources and environments
--Natural resources
--Natural and human-induced hazards

Grade

4-12

Brief Description

This lesson focuses on the concept of responsible purchasing using a sustainable economic framework. Students explore where things come from and where things go to make connections between product choices and social, economic and environmental impacts.

Objectives

Students will:

- Analyze patterns, causes and impacts from the production, consumption and disposal of everyday items;
- Appreciate the ethical dimension of reducing the social and ecological impacts of consumption;
- Appreciate the importance of changing the patterns and impacts of consumption;
- Identify principles of sustainable consumption; and
- Make connections between choices and impacts on environment, social and economic conditions.

Keywords

Science, earth day, recycling, sustainable, products, environmental, impact, green

Materials Needed

- An item of student clothing for each small group (e.g., wool sweater, nylon jacket, cotton shirt, polar fleece vest) OR for six small groups: two CDs, two cell phones, and two soccer balls
- Long strips of paper (about 10 inches wide) for timelines
- Poster paper for Venn diagrams
- Colored markers
- Two copies each of EPA's [Life Cycle of a Soccer Ball](#), [Life Cycle of a CD or DVD](#) and [Life Cycle of a Cell Phone](#)
- One copy each of World Watch product background information sheets (see below)

Lesson

Time: 60-90 minutes (plus optional field study)

The timing of this activity will depend on the length of each class period, the depth of discussions, and the extension activities undertaken. The time estimate is based on 40-50 minute class periods.

Preparation

To prepare for this activity, you will need to determine which approach best suits your students. When exploring prior knowledge, you may wish to select items that are easily accessible and allow students to generate more questions than they may have answers for. Alternatively, you may prefer to have students explore prior knowledge of items, and student-friendly background information has been provided to assist you with this. These are designed to allow them to compare their ideas with new information provided on an easy-to-read page.

Prior Knowledge

Explore what your students already know about how products are made and what happens to things when they are no longer needed.

Option A

Have students select an item of clothing they are wearing and lead a class discussion.

Option B

Form small groups. Provide an item of student clothing to each group. The items can be identical or each group could explore items made from different materials. Have students discuss what they know and think they know about the item, using questions to guide their discussion.

Option C

Form six small groups. Provide each group with either a cell phone, CD or a soccer ball. Have students discuss what they know about the item, using questions to guide their discussion.

Discussion Questions

1. Where is the item made?
2. How far did it travel to get to you?
3. What is it made from?

4. What else was needed to make this item?
5. How often and for how long do you expect to use this item?
6. How much did it cost to purchase?
7. How much does that mean each use costs?
8. When you no longer need this item, where does it go?
9. What will happen to it then?
10. How is this a problem?
11. What else could be done?

Procedure

PART A

1. Hand out the appropriate copy of the life cycle posters to each of the groups.

[The Life Cycle of a Soccer Ball](#)

[Life Cycle of a CD or DVD](#)

[The Life Cycle of a Cell Phone](#)

2. Have students review the poster to compare their ideas with the information provided.
3. Have students create a timeline that shows the story of production, consumption, and disposal by including information about how much energy, water and waste was used along the way.
4. Have each group tell their story to the class.

As a class, discuss the concept of product life cycle using questions like:

- What did you learn?
- What was most surprising?
- How does that relate to Environment? Money? People?

Extension: Display the timelines for another class to see. Visiting classes would walk to three different products while hosts talk about their product from “cradle to grave.”

PART B

1. In small groups, have students draw a [Venn diagram](#) (three large circles to fill a page of poster paper such that each circle overlaps with one another and all three overlap in the middle). Add the labels “environment,” “people” and “money” along the outside edges of the circles.
2. Hand out a different product background sheet to each group.
3. Have students read to find good news and bad news related to either environment, people or money.
4. Have students discuss the five most important points and the best place to record info bits on the diagram. For example, a sustainable practice might fit between two areas or occupy the space right in the middle.
5. Have students record the key point using one color for good news and another for bad news.
6. Ask students to highlight what surprised them.

7. In groups, discuss the connections between environment, people and money. Inform groups that when products are made with consideration of these connections, sustainable principles and practices are being used.
8. As a class, discuss a fundraising initiative in the school (past, existing or planned) and how this relates to selecting products that are sustainable.
9. Review students' ideas about the importance of 'walking the talk' by selecting products that are in keeping with the goals of the cause for which the funds are being raised.

Product Background Information Sheets

- [CDs and DVDs](#)
- [Chocolate](#)
- [Coffee](#)
- [Clothing](#)
- [Paper](#)
- [Soap](#)

Tips for Enhancing the Experience

Walking the Talk at School - Have students apply their understanding of sustainable choices to a real-life initiative in their school, either by proposing changes to an existing one or creating a new one for a cause that matters to them. Visit the [Get to Know Web site](#), request a fundraising package and review the products to identify what fits with the goals of their cause and propose their recommendations.

Build a Weee Man – Ask the class to bring in a range of e-waste related products that they throw away at home (packaging, paper, cans, mobile phones, printer cartridges, etc.) Have students demonstrate important messages about sustainable product choices to others in the school community by constructing a [WEEE Man](#).

Additional Resources

- [Sightline Institute](#)
- [Center for A New American Dream](#)
- [Let's Go Green Shopping](#)
- [Wallet Buddy - Guiding Principles for Shopping](#)
- [The Cloud Institute for Sustainable Education](#)
- [Quiz: Do You Know Your Stuff?](#)
- [Stuff: A guide with dozens of ideas on how to teach about stuff](#)
- [Values and Sustainable Development](#)
- [Video: The Story of Stuff](#)
- [Book: Good Stuff? A Behind-the-Scenes Guide to the Things We Buy](#)
- [Book: Stuff: The Secret Lives of Everyday Things](#)
- [Comparing Conventional Cotton to Sustainable Cotton](#)

- [Waste Prevention Image Gallery](#)
- [Photo Library](#)

TEACHER BACKGROUND MATERIALS

Environmental Costs

- The production of the goods and services we consume is based upon raw materials from the Earth.
- For example, according to environmental economist [Paul Hawken](#), the goods and services consumed each day by the average person in the U.S. require more than 132 pounds of raw materials to make -- over 25 tons per year.
- The World Wild Fund for Nature (WWF) has traced the impact of global resource over recent years and calculated a [Living Planet Index](#). This is an index of the 'natural wealth' of the world's ecosystems, and how the level of this natural wealth has changed over time.
- The 2000 Living Planet Index indicates that the Index declined by 30% from 1970 to 1995. This means that the world has lost 30% of its natural wealth in the space of one generation.
- Apart from the rapid use of natural resources this represents, increasing levels of global consumption are degrading the environment through the generation of pollution and waste.
- [Hawken](#) reports that the people of the USA generate over 50 trillion pounds of waste (excluding wastewater) every year. This includes:
 - Nearly 700 billion pounds of hazardous waste from the chemical industry
 - Nearly 300 billion pounds of organic and inorganic chemicals from manufacturing plants
 - Nearly 28 billion pounds of uneaten food
 - Nearly 25 billion pounds of carbon dioxide
 - 6 billion pounds of polystyrene; and
 - 3.5 billion pounds of carpet dumped in landfills.
- Hawken concludes that for every 220 pounds weight of products produced in the U.S. each year, at least 7,000 pounds of waste is generated.

National Standards

Science

Grades 5-8

[NS.5-8.6](#) Science in Personal and Social Perspectives: Populations, resources and environments

Grades 9-12

[NS.9-12.6](#) Science in Personal and Social Perspectives: Natural resources; Environmental quality; Natural and human-induced hazards

California Standards

[Science Content Standards for California Public Schools](#)

[California's Education and the Environment Initiative: Environmental Principles and Concepts](#)

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