



**Title:** Swap and Save

**Grades:** 5

**Subjects:** Science, Language Arts

**Time:** 45 Minutes

**Objectives:**

- Identify and describe how an individual's action in regards to waste management can affect change and improve the environment.
- Communicate their ideas in writing and inform readers about their conclusion on buying in bulk to improve the environment.

**Standards:**

Geography Standard 16: Understand the changes that occur in the meaning, use, distribution and importance of resources.

- Benchmark # 5: Know advantages and disadvantages of recycling and reusing different types of materials.

Technology Standard 3: Understand the relationship among science, technology, society and the individual.

- Benchmark # 4: Know that new inventions reflect people's needs and wants, and when these change, technology changes to reflect the new needs and wants.
- Benchmark # 5: Understand that technology may affect the environment both negatively and positively (e.g., the introduction of plastics).

Language Arts Standard 8: Use listening and speaking strategies for different purposes.

- Benchmark # 3: Respond to questions and comments (e.g., gives reasons in support of opinions).
- Benchmark # 5: Use strategies to convey a clear main point when speaking (e.g., express ideas in a logical manner, use specific vocabulary to present information).

**Materials:**

- Empty plastic drink bottle from previous lesson
- "Meet the Greens" story sheet provided below
- Paper and pencils

**Overview:** Waste is part of everyday life. As we go about our daily tasks we create waste. The average US citizen generates approximately one ton of trash annually, but seldom gives it any thought once they throw it away. This trash goes into the waste stream where it is collected and hopefully, disposed of in a manner that least impacts the environment.

Packaging materials are a major contributor to the waste stream. Packaging materials are used to protect the product from the environment, reducing the risk of damage and contamination. Packaging is also used to safely and efficiently transport the product from the manufacturer to the consumer, as well as to provide customers with product information and usage instructions, some of which are required by law.

Packaging, to a large extent, was developed in response to social and economic changes that affect consumers. The trend towards urbanization in the last century, created longer distances between food producers in rural areas and the consumers that lived in the cities, resulting in a greater demand for packaging. Other contributing factors were the increase in working families and smaller family units, resulting in greater use of microwaves, freezers and products of convenience. As these factors illustrate, to achieve a change towards more sustainable products, it is not just the packaging that needs to be addressed, but also lifestyle changes and consumption habits.



Source reduction is, by far, the most preferred method of solid waste management. It uses fewer resources, less energy and is economical. Unfortunately, it is also the most difficult concept to communicate to consumers. For manufacturers, source reduction means looking at and reducing the waste they generate during production, and the materials they use in packaging products. For individuals, it means reevaluating current practices, learning to do more with less, using what already exists responsibly, and recognizing the difference between needs, wants and what is ultimately best for the environment and the future of mankind.

**Kid's Speak:** Trash takes up space, uses valuable resources and harms the environment. People make a lot of trash. Every day they throw it away without even thinking about where it will go or what will happen to it. People need to understand the consequences of making all that trash, make better choices so the amount of trash they make is reduced, and have a plan to properly dispose of the trash they do make.

Not all trash needs to go in the garbage. There are other things that can be done. Some of it can be reused in a different way, some of it can be recycled so it can be made into something else, and some of it, like scraps of food, leaves and grass clippings, can be composted and added to the garden. But there are also things that people can do so there isn't as much trash. They can use fewer items that make trash. Instead of using plastic sandwich bags to put snacks in, they can use a reusable container. Instead of a plastic drink bottle, they can use a reusable water bottle. Instead of paper napkins and plastic utensils, they can use cloth napkins and washable forks and spoons. There are lots of things that people can do to make less trash. They just have to think about the choices they have and try to make the best ones for the environment.

**Eco-Fact:** Thirty-eight million plastic bottles used for bottled water are sent to landfills in America every year. A plastic water bottle takes approximately 700 years to begin decomposing.

#### **Procedures:**

##### **Before Conducting the Lesson:**

- Explain to students that staying hydrated is very important to human health. Drinking water is the best way to remain hydrated. Water contains no calories or unhealthy additives, such as food dyes and sugars. It is a healthy drink.
- Explain to students that drinking bottled water has become increasingly popular in the US and around the world, even in areas where tap water is safe to drink. This results in using vast amounts of energy to package and transport the bottled water, and mountains of waste that often times ends up in landfills where it is very slow to decompose. Share the Eco-Fact with students.
- Take out the plastic drink bottle and review with the class the previous conclusions they have come to about a plastic drink container. The class should have determined that a plastic drink container is not the best option for a portable drink and a more environmentally friendly solution, such as a reusable container, creates the least amount of waste. Using a reusable container supports waste management efforts to control the amount waste that goes into a landfill.

##### **Conducting the Lesson:**

- Read the following scenario to the students:

Meet the Greens: Mom, Dad, and the two kids. Mr. and Mrs. Green are very concerned about the environment, so they buy everyone in their family a reusable water bottle. As time goes on the Green's needs change. Their daughter gets bigger and doesn't need a bottle with a "sippy top" any longer. Their son doesn't like the cartoon character on his bottle and wants a new blue one.

Mom finds she's drinking more water than before and needs a larger bottle. Dad's new job has him traveling more often so he needs a taller, slimmer bottle that will fit better in the car's cup holder. The Green's all get new water bottles and their old ones are stored away.

As the Greens' interests and activities change year after year they find that their preferences for water bottles change as well. Thankfully there are many companies that make reusable water bottles. These come in assorted shapes, sizes and colors, so the family is always able to buy new, reusable water bottles to replace their old ones whenever they want.

Then one day the Greens decide to move to a new house. While cleaning out the cupboards and closets of their present house Mrs. Green finds all the old, reusable bottles. There are so many that they fill a whole box. Mrs. Green doesn't want to take them along in the move. No one ever uses any of them anymore. Some of them are covered in stickers, the plastic is scratched on several of them, and one has a missing top. There is no room for them at the new house, but Mrs. Green is not sure what to do with them. She puts the box of old used water bottles in the garage until she can think of some way to dispose of them.

- Pose the following questions to the students and discuss their responses:
  - Should the Green's old water bottles be considered waste?
  - Could these bottles be reused?
  - Would anyone have any interest in these water bottles?
  - What are some things that could be done with the water bottles?
  - What could be done with the water bottle with the broken top?
  - Does it need to be thrown away?
- Ask the students to go back to the story and find the reason why the family had collected so many water bottles. Were they still drinking water? Did they still have a need to have a water bottle? If the family members still need water bottles, but don't want or need the bottle that they have, would swapping be an option? Introduce the concept of waste exchange. Have the students define the term 'swap'.
- Use the example of the son that didn't want his cartoon character water bottle any more. He wanted a blue one. Ask students what might be the result if the boy went to a place where he could swap his cartoon character water bottle for a water bottle he did want?
  - What benefits would be gained from swapping his water bottle?
  - Would he get a bottle he needed?
  - Would his old bottle still be used in a productive way?
  - Would it cost any money?
  - Would energy or resources be used to create him a new bottle? How about transport to the place of exchange?
  - Which would be the most beneficial from an environmental standpoint?
- Talk to the students about charities and business, which have been created to help people share resources (e.g., Salvation Army, Goodwill, Outdoor Gear Exchange, Swaptree.com, Borders some which have used book sections, Toyswap.com, etc).

#### After Conducting the Lesson:

- Have the students plan a trading event for their classroom (e.g., a book swap). Have students (with their parents' approval) bring in used books. For every book the students bring in they receive one ticket. On the day of the book swap students can exchange each ticket for one new book. Have a few extra books, teacher submissions, to offer choice.



- Have the students write a trading law. Brainstorm with students a list of items that could or should be traded for, and have them compose a document containing positive and helpful suggestions for trading rather than buying something new. Share with other classes.

**Adaptation:** Coordinate with the school librarian to have a book swap for the school, rather than containing it to the classroom.

**Extensions:**

- Have the students create posters or advertisements which highlight and promote the positive aspects of trading for items or buying used items as a way of managing waste and more effectively using the resources we have.
- In cooperation with parent volunteers, begin a “trading place” where students can bring in items in good condition that they no longer want. The volunteers can prep the items and display them on specified days for trading.