# Reduce, Reuse, Recycle

**Topics**
Reduce, Reuse, Recycle

**Grades**
PreK-2

**Site**
Indoors

**Duration**
20 minutes

**Materials**
See page 2

**Vocabulary**
recycle, reduce, reuse, resource

**National Science Education Standards**
*Physical Science* (K-4)
Properties of objects and materials

*Science in Personal and Social Perspectives* (K-4)
Types of resources
Changes in environments

## Overview

*Where do things end up after we use them? What do reduce, reuse and recycle really mean? Students explore these ideas by examining and sorting various objects into trash, yard waste and "recycling." They brainstorm actions to "reduce" the amount of trash they produce from their lunch and then "reuse" by making musical instruments from recycled materials.*

## Objectives

Students will be able to:

- Understand that everyday objects come from natural resources.
- Differentiate recycling from yard waste and trash.
- Take action to reduce, reuse and recycle items at home and school.

## Background

Americans generate up to 4.5 pounds of waste per day according to the Environmental Protection Agency (2008). **Reducing** the amount of waste we generate is the best way to prevent the accumulation of trash and save **resources**.

A place to start is not buying something in the first place. If people do need something new, they should consider how many resources it took to get the item onto the shelf and whether it can be **reused** or **recycled**. Many items can be reused which reduces the need for more new items. For example, carry your own cloth bag or reusable water bottle instead of getting a new plastic one each time.

Most forms of glass, metal, paper and plastic can be recycled. They are melted, broken down or processed into parts that can be used to make new things. It's also possible to "close the loop" by purchasing items made from recycled materials.

Landfills are becoming increasingly full of waste. What really is 'away' when we throw trash away? Much of this waste takes many years to break down and some contains toxins. Humans and animals need a healthy and clean habitat in which to live. Actions taken at home or school, even many miles from the ocean, can affect life in the sea.

## VOCABULARY

**Recycle:** to treat or process used materials so as to make suitable for reuse

**Reduce:** decrease the amount of materials used and trash generated

**Resource:** a material source of wealth that exists in a natural state; like timber, minerals, fresh water, petroleum

**Reuse:** using an item again

## ELL TIPS

Family support is essential for all learners' success. Family Science events are a great way to engage families in their child's learning. They introduce potentially new concepts and methods to families that can be applied to many of the students' academic studies. See pages 5, 6, and 7 for table labels to use with families.

## Materials

**For sorting trash, recycling and yard waste:**

- One large container (like a box or bag)
- Three smaller containers (one labeled "yard" waste, one labeled "recycling," one labeled "trash")
- "Yard" waste: natural items like rocks, feathers, twigs, leaves or acorns
- "Recycling": rinsed-out soda cans, plastic water bottles, plastic food containers, paper
- "Trash": rinsed-out 6-pack soda can rings, candy wrappers, plastic bag, Styrofoam cup, etc.

**For a "Less Trash" lunch:**

- Various food items or photographs of food items with a lot of packaging and without a lot of packaging
- Red and green cards for sorting (optional)

**To make musical instruments:**

- Enough clean plastic bottles and food containers with lids to reuse as musical instruments
- Dry rice or beans/metal bottle caps or paper clips
- Stickers, colored paper, ribbon and other decoration for the "instrument"
- Tape

## Teacher Preparation

1. Gather the materials. Make sure everything is clean and has smooth edges. (Be sure to return all natural items to where they came from.) Label the three small containers: "yard," "trash" and "recycle."
2. Mix all of the yard waste, trash and recycling items together in the large container.
3. Bring various lunch foods from home or find photographs of foods in magazines for students to sort into "more trash" and "less trash" categories. Examples include an apple versus an applesauce container, a juice box versus a reusable bottle for juice bought in bulk, crackers in a reusable container versus those in small disposable packages, a homemade cookie versus cookies in plastic packaging and so on.
4. Wash the plastic bottles, food containers and lids that students will use for their instruments. Gather the other materials for making musical instruments.

## Procedure

**1. As a class, discuss types of waste.**

Ask students what we do with items that we no longer need. "Throw them away" is a popular answer. Ask students what else we could do with waste besides throw it away. *(reduce, reuse or recycle)*

**2. Introduce the concept of a "resource."**

Ask students why it's important to reduce the amount of trash. *Animals, including people, need healthy, trash-free homes and there is a limited amount of space for landfills. Plus, everything comes from somewhere.* Discuss natural **resources**. You may choose to go into renewable (soil, air, water, wood, sunlight) and nonrenewable resources (oil, coal, uranium, gas) depending on students' prior knowledge. *We use natural resources to make things. Some of these items can be reprocessed to make new things. Other items will get dumped into the trash and eventually go into a landfill.*

## Part One: Practice "Recycling" by Investigating and Sorting Waste

1. **STUDENTS EXAMINE AND SORT THE WASTE.**
   Have students look at the examples of trash in the box or bag you prepared. Do they all go into the trash can or is there anything that can be recycled or reused? *(Glass, metal and most plastics can be recycled. Paper can be recycled or reused. Yard waste can be composted which is a form of recycling. Some items like food-stained paper napkins and plates, can only be composted or thrown away.)* Have students sort the trash into the different receptacles: Trash, Recycling, Yard Waste. Ask for creative ideas on reusing any of the items.

## Part Two: Practice "Reducing" by Creating a Less-Trash Lunch

1. **STUDENTS SORT LUNCH FOOD EXAMPLES INTO CATEGORIES BASED ON THE AMOUNT OF TRASH EACH PRODUCES.**
   Share examples of lunch foods with the class. (You may choose to use actual food items or pictures from magazines.) Challenge the students to sort the foods into two groups; one group for the items that generate more trash and the other group for the items that generate less trash. (For example, an apple generates less trash than a package of apple sauce.) Brainstorm ways to reduce the amount of trash in their lunches. Challenge the students to bring a less-trash lunch to school as one way to reduce their waste.

## Part Three: Practice "Reusing" and Make Musical Instruments

1. **STUDENTS REUSE PLASTIC CONTAINERS AND MAKE AN INSTRUMENT.**
   Have students choose one of the clean plastic containers to make a musical instrument. Put dry rice or beans into the plastic containers. Put the lids back on and tape if necessary. Decorate the musical instruments with ribbon, paper patterns or whatever recycled materials you have available.

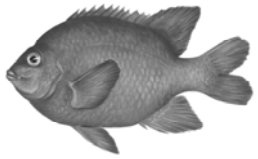
2. **STUDENTS PLAY THEIR MUSICAL INSTRUMENTS.**
   Play a CD of music and have students play along with their new music shakers!

3. **DISCUSS THE IMPORTANCE OF THE THREE "RS": REDUCING, REUSING AND RECYCLING.**
   Ask students for ideas how to reduce the amount of resources used in class. *(using the front and back of paper, drinking water in a reusable bottle, eating bulk food rather than lots of little containers, turning off the lights, and so on)* What about at their homes? Encourage students to choose one action to start taking at home. Ask students why it's more effective to "reduce" and "reuse" before "recycling." (*More resources are saved by "reducing" the amount bought and "reusing" what one already owns. "Recycling" is better than throwing something in the garbage but it takes energy to make an object suitable for reuse.*)

### CONSERVATION TIPS

Eco-phobia is a term used to describe the anxiety children can feel when faced with too many environmental concerns.

Remember to keep your conservation messages developmentally appropriate and focus on the positive things people can do to make a difference such as recycling and reusing items.



## Extensions

- Invite students' families to visit the classroom. Use the attached **What Can You Recycle?, Make Musical Instruments** and **Less-Trash Lunch** as table labels so the families can do the activity together.
- Introduce composting. Most yard waste recycling programs don't take wet fruit and vegetable waste. Compost bins or worm composting can break down that waste and make soil.

## Resources

### Websites

*US Environmental Protection Agency*
http://www.epa.gov/epawaste/conserve/rrr/index.htm
Find information on municipal solid waste.

*Yes Magazine*. www.yesmagazine.org/article.asp?ID=803
Read the *Beyond Ecophobia* article for information about age-appropriate messages.

**THE MISSION OF THE MONTEREY BAY AQUARIUM IS TO INSPIRE CONSERVATION OF THE OCEANS.**

### Books and Music

*Earthdance.* Ryder, Joanne. Henry Holt and Co., 1996.
*Recycle!* Gibbons, Gail. Little Brown Books, 1996.
*Recycle That!* Burnie, Fay Robinson. Children's Press Chicago, 1995.
*Splash Zone* CD. Arnold, Linda. Monterey Bay Aquarium, 2000.

## Standards

### California Science Standards

Grade K: 1a; 4a, b, d
Grade 1: 4b
Grade 2: 4c

### California Visual and Performing Arts Standards

### Head Start Framework

#### Science

- Begins to uses senses and a variety of tools and simple measuring devices to gather information, investigate materials and observe processes and relationships.
- Develops increased ability to observe and discuss common properties, differences and comparisons among objects and materials.
- Expands knowledge of and respect for their body and the environment.

#### Music

Experiments with a variety of musical instruments.

#### Movement

Shows growth in moving in time to different patterns of beat and rhythm in music.

# What Can You Recycle?

1. Choose one thing from the box. Decide if the object belongs outside in the yard, in the wastebasket or can be recycled.

2. Put it into the yard tub, the wastebasket or the recycle container. How can you tell where it belongs?

3. Take turns.

4. Continue until all the items have been chosen, or everyone has had a turn.

# ¿Qué Pueden Reciclar?

1. Escoge una cosa de la caja. Decide si el objeto pertenece afuera en el jardín, en el basurero o si puede ser reciclado.

2. Pónlo dentro del recipiente para el jardín, el cesto de basura o el recipiente de reciclaje. ¿Cómo es que sabes donde pertenece?

3. Vayan turnándose.

4. Continúen hasta que todos los artículos hayan sido escogidos o todos los participantes hayan tomado su turno.

# Less-Trash Lunch

1. Look at the food examples and decide which items produce the least amount of trash.

2. Put a green card next to each item you think uses less trash and a red card next to those that will make trash.

3. Discuss your selections with others.

4. How did you do?

5. Look at the other examples. Think about ways that you could pack these foods in your lunchbox with less trash.

# Almuerzo con Menos Basura

1. Mira los ejemplos de comida y decide cuales artículos te ayudarían a empacar un almuerzo con menos basura.

2. Pon una carta verde al lado de cada articulo que piensas ocupa menos basura y una carta roja al lado de los artículos que pueden causar basura.

3. Platica con otros sobre tus selecciones.

4. ¿Adivinaste bien?

5. Mira los otros ejemplos. Piensa sobre las maneras en que puedas empacar esta comida en tu lonchera con menos basura.

# Make Musical Instruments

1. Choose a bottle or container from the recycle bin to reuse.
2. Make a musical instrument by adding a few beans or some rice. Screw on the lid or tape it closed.
3. Decorate your shaker with pictures or some scraps from the recycle tub.
4. Play along with the music.

# Haz Instrumentos Musicales

1. Escoge un envase o un frasco del recipiente de reciclaje que pueda ser reutilizado.
2. Haz un instrumento musical añadiendo unos cuantos granos de fríjol o arroz. Cierra la tapadera o pégalo bien con cinta adhesiva.
3. Decora tu maraca con dibujos o con desechos de chatarra del recipiente de reciclaje.
4. Ahora toca tu maraca al ritmo de la música.