

## **Lesson 1 Recycling**

### **Grade Level**

3-5

### **Duration**

60 minutes

### **Learning Goals:**

1. To help students identify garbage that can be recycled
2. To acquaint students with the cost of handling garbage
3. To illustrate the relationship between recycling and conservation of natural resources
4. To teach students how to recycle

### **Materials:**

#### 1) Posters:

-Percent of different materials in household trash

-Recycling symbol

-Show cost to build a new landfill (this information can be obtained from local officials or from state EPD)

2) Bag of miscellaneous trash for sorting--gloves and aprons should also be provided for the students to ensure their safety while handling the garbage.

3) Fact sheets (one per student)

4) Recycling containers (various styles)

5) Magnet

6) Markers

7)Poster board

### **Preparation:**

Define the three R's: Recycle, Reduce, and Reuse and write it on a poster, or white board.

Prepare copies of fact sheet. Have or make a sample recycle bin to show the students. Have a bag of trash with a variety of materials.

### **What to Do:**

#### **Step 1**

#### **Discussion: 20 minutes**

- 1) Start the activity by defining RECYCLING. *Recycling is the collection of recyclable waste materials and the re-manufacture of the collected materials into new products.* Hold an

open discussion and encourage students to participate giving their understanding of recycling.

2) Pass out fact sheets and discuss some of the information. Use examples to make numbers more dramatic. Write down some of the facts that have a major impact on the environment.

3) Ask students to name some of the benefits of recycling:

- Saves resources
- Saves energy
- Reduces pollution
- Saves money

## **Step 2**

### **Sorting trash: 15 minutes**

1) Use a bag of trash to show students some of the items we typically throw away. Dump this out on the (covered) floor.

2) Use a chart to illustrate the percentage of materials in household trash (the figures below are average, make sure these items are included in your trash bag):

- 40% paper
- 10% metal
- 8% glass
- 8% plastic
- 7% food scraps
- 9% other

3) Ask students where their trash goes. Use this opportunity to give facts about the current landfill. Provide information as to when the current landfill will close, and the cost of constructing a new landfill (total cost divided by total population). Tell students that recycling will reduce the amount of solid waste going to the landfill and thereby save everyone money. (Current figures can be obtained from local officials or the state EPD.)

4) Ask students to sort trash into appropriate piles; for example, paper, plastic, glass, metal, etc.

5) Present information about the different types of items in each pile; for example (paper)- newspaper, office paper, cardboard, etc.

6) Allow students to use a magnet to demonstrate how to separate aluminum cans from steel cans.

## **Step 3**

### **Discussion: 10 minutes**

1) Select one or two examples of recyclables and give examples of new products that can be

made from each. Use this opportunity to teach students the symbol that indicates a recycled product. Encourage them to buy recycled products when possible; show some examples.

2) Select one example (newspaper) and discuss how much raw material is needed to produce the Sunday newspaper (500,000 trees).

3) Show students that if recycled paper were used, these trees could be saved.

#### **Step 4**

#### **Closing: 15 minutes**

1) Inform the students that starting a recycling program at home is easy: place containers in a convenient location and you're ready to go. Show several examples of recycling containers.

2) Give students a list of locations that will accept recyclables.

3) At the end of the program, provide poster board and markers and ask students to design labels to place on their recycling containers at home. Students can continue to work on this throughout the week when given extra time.

#### **Outcomes to Look For:**

Design a pre/post multiple-choice test to give students. Base the questions on the facts provided in the presentation. Example: By weight, which accounts for the largest percentage of your trash? a) glass b) paper c) plastic Comparing pre-test and post-test scores will help assess how much students have learned.

## **Recycling Instructor's Toolkit**

**Description:** Landfills receive 40 tons of waste per day. Over 35% of this material could be recycled. The purpose of this class is to teach students the economic and ecological importance of recycling.

### Concepts:

1. How materials break down in the environment
2. Materials suitable for recycling
3. Gathering and sorting of recyclable materials
4. Environmental impact of recycling

### **Reduce**

Reducing the amount of waste you produce is the best way to help the environment. There are lots of ways to do this. For example:

- Buy products that don't have a lot of packaging. Some products are wrapped in many layers of plastic and paperboard even though they don't need to be. You can also look for things that are packed in materials that don't require a lot of energy or resources to produce. Some products will put that information right on their labels.
- Instead of buying something you're not going to use very often, see if you can borrow it from someone you know.
- Cars use up energy and cause pollution. Some ways to reduce the environmental damage caused by cars include carpooling with friends, walking, taking the bus, or riding your bike instead of driving.
- Start a compost bin. Some people set aside a place in their yard where they can dispose of certain food and plant materials. Over time, the materials will break down through a natural process called decomposition. The compost is good for the soil in your yard and means that less garbage will go to the landfill.
- You can reduce waste by using a computer! Many newspapers and magazines are online now. Instead of buying the paper versions, you can find them on the Internet. Also remember that you should print out only what you need. Everything you print that you don't really need is a waste of paper.
- Save energy by turning off lights that you are not using.
- Save water by turning off the faucet while you brush your teeth.
- Lots of families receive a large amount of advertisements and other junk mail that they do not want. You can stop the mailings and reduce waste by writing to the following address and requesting that they take your name off of their distribution list:

### **Reuse**

Instead of throwing things away, try to find ways to use them again! For example:

- Bring cloth sacks to the store with you instead of taking home new paper or plastic bags. You can use these sacks again and again. You'll be saving some trees!
- Plastic containers and reusable lunch bags are great ways to take your lunch to school without creating waste.
- Coffee cans, shoe boxes, margarine containers, and other types of containers people throw away can be used to store things or can become fun arts and crafts projects. Use your imagination!
- Don't throw out clothes, toys, furniture, and other things that you don't want anymore. Somebody else can probably use them. You can bring them to a center that collects donations, give them to friends, or even have a yard sale.
- Use all writing paper on both sides.
- Use paper grocery bags to make book covers rather than buying new ones.
- Use silverware and dishes instead of disposable plastic utensils and plates.
- Store food in reusable plastic containers.

## **Recycle**

Many of the things we use every day, like paper bags, soda cans, and milk cartons, are made out of materials that can be recycled. Recycled items are put through a process that makes it possible to create new products out of the materials from the old ones.

In addition to recycling the things you buy, you can help the environment by buying products that contain recycled materials. Many brands of paper towels, garbage bags, greeting cards, and toilet paper, to name a few examples, will tell you on their labels if they are made from recycled materials.

In some towns you can leave your recyclables in bins outside your home, and a truck will come and collect them regularly. Other towns have recycling centers where you can drop off the materials you've collected. Things like paper and plastic grocery bags, and plastic and aluminum cans and bottles can often be brought to the grocery store for recycling. Whatever your system is, it's important to remember to rinse out and sort your recyclables!

### **Recycling Centers:**

#### **Urban Recycling**

(510) 444-5237

77 8th St, #119, Oakland, CA

#### **National Recycling Group**

Merchant verified

(510) 268-1022

1312 Kirkham St, Oakland, CA

#### **California Waste Solutions, Incorporated**

Merchant verified

(510) 832-8111

1820 10th St, Oakland, CA

## **Recycling Fact Sheet**

- According to the Environmental Protection Agency, the average American produces about 4.4 pounds (2 kg) of garbage a day, or a total of 29 pounds (13 kg) per week and 1,600 pounds (726 kg) a year.

-Every year, Americans throw away 50 billion food and drink cans, 27 billion glass bottles and jars, and 65 million plastic and metal jar and can covers. More than 30% of our waste is packaging materials.

- Only about one-tenth of all solid garbage in the United States gets recycled.

- Every year we fill enough garbage trucks to form a line that would stretch from the earth, halfway to the moon.

- Each day the United States throws away enough trash to fill 63,000 garbage trucks.

- Almost 1/3 of the waste generated the U.S. is packaging.

- The amount of glass bottles Americans throw away every two weeks would have filled both World Trade Center towers.

- Americans throw away enough aluminum cans to rebuild our commercial air fleet every three months, and enough iron and steel to supply all our nation's automakers every day.

- Americans make nearly 400 billion photocopies a year - about 750,000 copies every minute of every day.

- 35% of waste in landfills is paper.

-27 billion glass containers are thrown away each year

-1 quart of motor oil can contaminate 1 million gallons of water

-Making new paper from recycled paper uses 45% less energy than making paper from trees (Numerous examples of recycling facts can be found in recycling publications.)