

# MAKE IT SMALLER

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## Contact Information

Athens-Clarke County Recycling Division  
Program Education Specialist  
706.613.3512  
[www.acc-recycle.org](http://www.acc-recycle.org)

## Grades

2

## Objectives

Students will be able to: 1) comprehend that some materials that we use can be made smaller using less space and eventually less solid waste; and 2) understand what a concentrated substance means.

## Method

Students inflate and deflate balloons to demonstrate the concept of reduction. Students make lemonade from a concentrated mix to understand that small packets of concentrated products create less waste.

## Materials

Balloons, beverage containers, balance scale by grams, 2 quart powdered drink mix, pitcher, spoon, 2 quart drink

## Vocabulary

Reduce, sanitary landfill

## Procedure

1. Introduce the term REDUCE. Reduce is to make something smaller or to make less of something. Demonstrate the concept of reduce. Blow up a balloon and release the air. Ask the students: "Did the balloon become smaller? Was it reduced? What happened to the balloon to make it smaller?" Explain that the air escaped and the balloon deflated. Items are reduced if something is taken away, like the air in the balloon.
2. Discuss the reduce concept as it relates to waste. Like the air in the balloon, waste needs to be deflated, reduced by making less waste. Explain that reducing waste produced and thrown away is a priority for government, industry, and individuals alike. The huge volume of waste produced each day needs to be reduced to save space in SANITARY LANDFILLS. A sanitary landfill is a special space designed for the burial of waste in the ground. Sanitary landfills are rapidly filling up and soon we will have no where to put our waste if we do not start now to reduce the waste we generate. Waste can be reduced by saving valuable items before they are disposed (e.g., recycling, composting, and energy recovery) and by buying and consuming products that create less waste.

3. List on the board ways to reduce waste:
    - Purchase larger container sizes (e.g., a single 16-ounce can vs. two 8-ounce cans).
    - Purchase small packets of concentrated products and dilute them (e.g. powdered).
    - Purchase only refillable containers or those which can be recycled.
    - Purchase products with longer useful life (e.g., batteries, cloth napkins, tires, household appliances). Brainstorm with students for examples of each category.
  
  4. Experiment with products to show waste reduction. Demonstrate that purchasing larger containers reduces waste.
    - Show students how to use a balance scale and record weight in grams.
    - Weigh two 8-ounce cans.
    - Weigh one 16-ounce can.
    - Compare the weight of the two 8-ounce cans to with the one 16-ounce can. The one 16-ounce can uses 68 grams of metal, or 40% less than the 95.4 grams used in two 8-ounce cans.

Ask the students if purchasing a 16-ounce container reduces waste? Explain when purchasing a 16-ounce container would not reduce waste (e.g., if it increases food waste due to spoilage). Ask students to bring in other containers to weigh and compare. Repeat this experiment with containers brought in by students. List products, weights, and comparisons on a chart. Display the chart on a bulletin board.
  
  5. Show that purchasing packets of concentrated products and diluting them reduces waste.
    - Compare the 2 quart package of powdered drink mix (pre-sweetened) with a drink in a 2 quart container (non-recyclable).
    - Mix the powdered drink mix in a reusable pitcher.
    - Consume the drink from the pitcher and the drink in the 2 quart container.
    - Compare the waste from the 2 quart powdered drink to the waste from the 2 quart container. (Note: the pitcher is reusable).
    - Ask the students which drink packaging would you purchase to reduce waste? If the 2 quart container is recyclable then the drink in the 2 quart container reduces more waste than the 2 quart powdered mix package.
  
  6. Have students prepare a waste reduction shopping list to each take home. List common items purchased each week by a family and waste reduction tips for each item.

Tell students to encourage their family to use the waste reduction shopping list and report back to class on items purchased. Ask each student if their family was willing to buy waste reduction items. If not, why? What do you need to do to convince your family to purchase items which produce less waste?
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Source: Waste In Place, 1990 Keep America Beautiful, Inc.