

## Post-Visit Activity #3: What a Load of Garbage!

This activity is adapted from *Mission 3R: A Challenge for Change*.

For more activities like this one or a copy of the Mission 3R interactive CD, contact Arizona Department of Environmental Quality at (602) 771-4865 or visit [www.recyclearizona.net](http://www.recyclearizona.net)

### Overview:

Students focus on waste generated in the classroom and elsewhere in the school, and use mathematical calculations to estimate the amount produced by their school and by all schools in Arizona.

### Arizona Department of Education Academic Standards:

Please refer to the Arizona Department of Education Academic Standards section for the ADE standards addressed by this lesson.

### Objectives:

Students will be able to:

- ☛ realize the total amount of trash generated by their class.
- ☛ apply math skills to estimate trash totals for their school and beyond.
- ☛ identify ways to reduce waste in the classroom and elsewhere.

### You will need:

- plastic bag(s) large enough to hold the trash generated by the class in one school day
- scale (hanging scale or simple bathroom scale)
- a transparency of the "Trash Pile" master (or copy it on the chalkboard)
- the number of student attendance days in your school calendar

### Directions: (estimated time 60 minutes)

#### 1. Collect and save all trash in a typical school day.

You may choose to focus on classroom trash or to include additional rooms such as the art and lunch rooms. (Store food waste in a separate container, if possible in a refrigerator overnight or until you are ready to conduct the activity.)

#### 2. A world of waste

As discussed in the Teacher Background Information, point out that the U.S. leads the world in the production of municipal solid waste. Because the U.S. accounts for only a small percentage of the world's population, this means we produce several times as much waste per person as do people in other countries. Even compared to other wealthy, developed nations, we typically produce twice as much waste per person. The average U.S. citizen produces over four pounds of trash every day! Expand these points as you wish.

#### 3. We are what we throw away!

Remind students that the waste they throw away every day includes trash they generate at school. Weigh the bag(s) of trash collected on the previous day. If using a bathroom scale, show students how a person's weight can be subtracted from the weight of that person holding the trash to arrive at the weight of trash. Write the total pounds of trash on the board.

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## What a Load of Garbage!

### Directions (continued)

#### 4. “Trash Pile” Math

Ask students to find out how much trash the average student produces by dividing the total by the number of students in the class. Use the “Trash Pile” chart to guide students in projecting the amount of trash produced by their classroom, their school, and all schools in Arizona in the course of one school year. Students should discover that there might be more than one way to arrive at certain answers. Note that a Teacher Version of the “Trash Pile” chart is also provided.

#### 5. Discussion

##### Ask students:

- Do you think our class generates a lot of trash?
- What might we do to reduce the amount of trash generated?
- As students brainstorm, write their ideas on the board.
- After a list of several items has been created, lead the class into agreement on which strategies would make the most difference and prioritize the list.
- Then take concrete steps to set these strategies in motion. For example, if “use back of old homework for scratch paper” is listed, set up a basket or box for the class to collect and access homework that is clean on one side. If “create a classroom recycling program” is listed, set up an appropriate container and collection schedule.

### Extension Ideas:

1. Extend your classroom waste reduction efforts to the school. Students may wish to write letters or make presentations to enlist the support of the school administration and parent-teacher organization.
2. Have students analyze their family’s household trash and develop strategies for reducing waste in the home as well.

## “Trash Pile” Overhead/Chalkboard Master

The Classroom	The School	Schools in Arizona
<p><b>A</b> Amount of trash per day =  _____ Pounds. <small>(This answer is the weight measured by the class. Use it to calculate other answers.)</small></p>	<p><b>E</b> Amount of trash per day =  _____ Pounds.</p>	<p><b>I</b> Amount of trash per day =  _____ Pounds.</p>
<p><b>B</b> Amount of trash per 5 day week =  _____ Pounds.</p>	<p><b>F</b> Amount of trash per 5 day week =  _____ Pounds.</p>	<p><b>J</b> Amount of trash per 5 day week =  _____ Pounds.</p>
<p><b>C</b> Amount of trash per month =  _____ Pounds.</p>	<p><b>G</b> Amount of trash per month =  _____ Pounds.</p>	<p><b>K</b> Amount of trash per month =  _____ Pounds.</p>
<p><b>D</b> Amount of trash per year =  _____ Pounds.</p>	<p><b>H</b> Amount of trash per year =  _____ Pounds.</p>	<p><b>L</b> Amount of trash per year =  _____ Pounds.</p>

## “Trash Pile” Teacher Version

The Classroom	The School	Schools in Arizona
<p><b>A</b> Amount of trash per day = _____ Pounds.</p> <p><b>This answer is the weight measured by the class.</b></p>	<p><b>E</b> Amount of trash per day = _____ Pounds.</p> <p><b>A x (number of classes in your school)</b></p>	<p><b>I</b> Amount of trash per day = _____ Pounds.</p> <p><b>E x (1100 schools in Arizona)</b></p>
<p><b>B</b> Amount of trash per 5 day week = _____ Pounds.</p> <p><b>A x 5</b></p>	<p><b>F</b> Amount of trash per 5 day week = _____ Pounds.</p> <p><b>E x 5</b></p>	<p><b>J</b> Amount of trash per 5 day week = _____ Pounds.</p> <p><b>I x 5</b></p>
<p><b>C</b> Amount of trash per month = _____ Pounds.</p> <p><b>B x 4</b></p>	<p><b>G</b> Amount of trash per month = _____ Pounds.</p> <p><b>F x 4</b></p>	<p><b>K</b> Amount of trash per month = _____ Pounds.</p> <p><b>J x 4</b></p>
<p><b>D</b> Amount of trash per year = _____ Pounds.</p> <p><b>A x (number of days in school year)</b></p>	<p><b>H</b> Amount of trash per year = _____ Pounds.</p> <p><b>E x (number of days in school year)</b></p>	<p><b>L</b> Amount of trash per year = _____ Pounds.</p> <p><b>K x (number of days in school year)</b></p>