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▶ Lessons at a Glance

**Lessons**

[All About Me](#)

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[Buy Low/Sell High](#)

[Buying a Dream Car](#)

[Campaign Hot Buttons](#)

[Candy is Dandy](#)

[Celebrate the U.S.A.](#)

[Code Crackers Math Game](#)

[Creating Your Own Web Site](#)

[Don't Trash the Earth](#)

[Endangered Species](#)

[For the Record](#)

[It's All in the \(Chocolate\) Chips](#)

[Just Desserts](#)

[Making Ends Meet](#)

[Newsworthy Journey](#)

[Nutrition Track](#)

[Planning a School Event](#)


[Solving Polynomial Equations](#)

[Space Case](#)

[Three Squirrels and a Pile of Nuts](#)

[Traits R Us!](#)

[Understanding Poetry](#)



## Don't Trash the Earth

**Subjects:** Science, Language Arts

**Required Software:** Microsoft® Excel, Microsoft® PowerPoint®

**Optional Software:** Microsoft® Greetings Workshop or Microsoft® Publisher

▶ [Teaching Guide](#)

▶ [Student Activity](#)

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### [Teaching Guide](#)

**[Summary](#)**

[In a hands-on environmental science project, students learn about recycling as they collect data on their own family's trash production, analyze the data with worksheets, chart the data, and present their findings.](#)

**[Objectives](#)**

[To have students learn how to calculate simple worksheet formulas, collect and chart data from real-world settings, and shape data into meaningful statements within a broader social context.](#)

**[Prerequisite Skills](#)**

[Knows how to create a Microsoft Excel worksheet and use functions, can create a slide presentation using Microsoft PowerPoint.](#)

**[Time Alloted](#)**

[Approximately six weeks to three months](#)

**[How to Begin](#)**

[Ask students how much they know about protecting the Earth's environment. We all know, for example, that pollution threatens resources. But do they know which resources? \(The ocean, fresh water, air, etc.\) How can over-use also threaten resources? \(For example, extensive land development or over-timbering can threaten trees, soil, wildlife, and plant life.\) In what way does household trash contribute to the problem? \(In two ways: Overuse of resources, such as trees/paper; pollution from too much trash, which creates too much landfill; too many "non-biodegradable" products.\)](#)

[Next, discuss recycling with your class. Why is recycling important and helpful for the future? Ask students to take a guess on how many pounds of trash they personally produce every year and have them share their guesses with the class. Tell students that in this activity they will find out how much trash they and their families actually produce during a year, how much is recycled, and how much more might be recycled. Explain that in the "Don't Trash the Earth" project, students will weigh and, if possible, separate family trash into waste and recyclables, chart the results for three weeks, and analyze the data.](#)

[Send each student home with a copy of the reproducible at the end of this](#)

lesson, which explains the "Don't Trash the Earth" project to parents. Sign the bottom of the handouts, and ask each student to write his/her name in the blanks.

#### **Recommended Web Sites:**

- [Music Central Online](#)
- [The Ultimate Band List](#)



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### **Student Activity**

#### **Description**

In this activity, you will have the "honor" of taking out the household trash every night for a week. You will record the weight of the trash in a worksheet, chart the results for three weeks, and analyze the data. Finally, you will create a presentation about your findings.

#### **STEP 1 Collecting the Trash**

##### **SOFTWARE: None**

**WHAT TO DO:** Begin by telling every family member to "leave the trash! You will take it out." If possible, set up a temporary Recycling Station at home for (1) glass; (2) metal cans; (3) no-deposit, non-returnable plastic bottles; (4) newspapers and magazines; and (5) returnable bottles. Be sure to have a separate garbage bag or container for each kind of recyclable.

#### **STEP 2 Creating a Worksheet**

##### **SOFTWARE: Microsoft Excel**

**WHAT TO DO:** Open Microsoft Excel and set up a "Don't Trash the Earth!" worksheet. You will use this worksheet to record the weight of each category of trash each night. Print this chart out and post it close to where you keep the trash.

The screenshot shows a Microsoft Excel spreadsheet with the following structure:

DON'T TRASH THE EARTH!									
WEEK 1	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	TOTAL	
Garbage									
Metal Cans									
Plastic Bottles									
Glass									
Newspapers									
Returnables									
WEEK 2	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	TOTAL	
Garbage									
Metal Cans									
Plastic Bottles									
Glass									
Newspapers									
Returnables									
WEEK 3	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	TOTAL	
Garbage									
Metal Cans									
Plastic Bottles									
Glass									
Newspapers									

**Example 1: "Don't Trash the Earth" worksheet created in Microsoft Excel**

Every time you take out the family trash, you should weigh it and record its weight on the chart. A simple method would be to weigh yourself first, then weigh yourself again while holding a bag of garbage. NOTE: Even if you do not have a bathroom scale, you can figure out the average weight of a garbage bag used at home. For example, a large (39 gallon capacity) garbage bag full of trash weighs about 7 pounds. Keep count of how many bags you dispose of each day and enter their total approximate weights on the chart. At the end of three weeks, after all of your data has been collected, reopen your "Don't Trash the Earth" worksheet in Microsoft Excel and type in the data you collected.

**STEP 3 Charting Your Data**

**SOFTWARE: Microsoft Excel**

**WHAT TO DO:** Once your worksheet is complete, decide what data to graph. For example, you might compare your own individual trash production per year to the class average production or to the average U.S. citizen's trash production. You might also show the U.S. trend in trash production using the data in the chart on the previous page.

**STEP 4 Presenting Your Research**

**SOFTWARE: Microsoft PowerPoint**

**WHAT TO DO:** After you have created your charts, work in teams of four to create a presentation in PowerPoint. Consider the following areas for inclusion in your presentation:

Research trash disposal and recycling locally and in the U.S. in general. Is recycling mandatory or optional? Is garbage disposed of in landfill? How

much does recycling help the environment? What kind of trash is not biodegradable? What happens to non-biodegradable materials in landfills? Can landfills or "dumping" pollute?

Think of all the things that produce household trash. Is there anything we could change in society and in our families to produce less trash?

### **STEP 5 Start a Recycling Campaign**

**SOFTWARE: Greeting Workshop or Publisher 97**

**WHAT TO DO:** Begin a recycling campaign in your school or neighborhood with the title "Reduce, Reuse, Recycle" or come up with a title of your own. Events surrounding the campaign can include a recycling awareness night or school rally. Use Greetings Workshop to create invitations for the event and flyers to generate awareness of recycling issues as well as upcoming recycling events Plan ways to effectively distribute these flyers so that they help people learn more about the issues.



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Last Updated: January 1, 1998