

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ CLASS: \_\_\_\_\_



# Personal Waste Eco-Audit Worksheet

## Introduction:

How much waste do you think you produce? According to a World Bank report from 2012, a typical person in a developed country produces about 1.2 kg (2.6 lb.) of garbage per day. According to the United States Environmental Protection Agency, the average American produced nearly 2.0 kg (4.4 lb.) of trash each day in 2013. That waste adds up! For example, according to the *Handy Science Answer Book*, Americans throw away

- enough aluminum every three months to rebuild all the commercial airplanes in America
- enough tires each year to circle Earth almost three times
- about 18 billion disposable diapers each year, enough to reach to the moon and back seven times if connected end-to-end

A waste issue particularly relevant to young people is the growing amount of highly toxic e-waste (electronic waste). Many teens spend more than a few hours per day using electronics. The United Nations Telecom Agency reported that by the end of 2011, there were about six billion cell phones in the world—enough phones for approximately 86 out of every 100 people to have one. Computers, laptops, tablets, cell phones, and game and music players are regularly upgraded, rendering older versions obsolete and making e-waste one of the fastest growing waste streams globally. Much of that e-waste contains toxic heavy metals that are not being disposed of correctly.

Most of us have no idea how much waste we produce each day. With this activity, you'll get a glimpse!

## Your Challenge:

### Part 1:

Collect all your trash for a 24-hour period in a garbage bag. Then review and organize that bag to learn something about your personal waste habits. Record your findings on the Personal Waste Eco-Audit Datasheet.

### Part 2:

Think about all of the electronic products you've ever owned and what happened to them. Document these items on the Personal E-Waste Eco-Audit Datasheet.



## Part 1: Personal Waste Eco-Audit

### Materials Needed:

- Bathroom scale
- 2 large trash bags
- Protective gloves (rubber or latex)
- 2 containers for sorting food wastes

### Instructions:

1. Carry a trash bag with you at all times for a 24-hour period.
2. Throw every bit of trash you generate into the bag, except for “dirty” trash. Rather than adding toilet paper, tissues, etc., put the same amount of clean and unused materials in your bag. For example, if you use four squares of toilet paper, add four clean squares of toilet paper to your bag. (Yes, this is wasting materials in the short term, but it is in the name of science and may help you waste much less later!)
3. After 24 hours, weigh your trash bag and record the weight on your datasheet.
4. Find two containers that will be large enough to sort your food wastes into: one for plant-based products that can be composted and one for meat and dairy products that cannot be composted.
5. Weigh each empty container, and record its weight on your datasheet.
6. Put on your protective gloves, and then separate your garbage into the categories listed in the chart. To minimize mess, put food wastes in the containers you weighed.
7. Use the Personal Waste Eco-Audit Datasheet to record the weight of the items in each waste category. Be sure to first weigh each food waste container while it is empty and to then subtract that amount from the total weight of the container and the food waste in it. Be precise when taking measurements!
8. After sorting all the trash, weigh the items in each category and record the number. Be sure to use either kilograms or pounds, as instructed by your teacher. When you’ve weighed the items in all categories, add up the amounts, and record the total in the final column. This number should be very close to your original, presorting weight.
9. Calculate the percentage of the total each category represents by dividing each category's weight by the total weight and then multiplying that by 100. Record each percentage. Check that all the percentages add up to 100.
10. Transfer to the second chart the weight you recorded for each category on the first chart. Multiply each Daily Total by 7 to get a Weekly Total. Then multiply each Weekly Total by 52 to get an Annual Total.

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# Personal Waste Eco-Audit Datasheet

## Directions:

Record the weight of your trash (in kilograms or pounds).

Original, pre-sorting, weight of trash bag with trash: \_\_\_\_\_

Weight of containers: Compostables container: \_\_\_\_\_ Noncompostables container: \_\_\_\_\_

Step 1: Data Collection									
	Paper	Card-board	Plastics	Metal	Glass	Food Waste: Compostable	Food Waste: Non-compostable	Other	TOTAL
Weight									
% of Total									

(To calculate the percentages, divide the category amount by the total weight; then multiply that number by 100.)

Step 2: Personal Eco-Audit Analysis Sheet				
Material	Daily Total (kg or lb.)	Weekly Total (7 days)	Annual Total (52 weeks)	%
Paper				
Cardboard				
Plastics				
Metal				
Glass				
Food Waste (compostable)				
Food Waste (non-compostable)				
Other				
<b>TOTAL</b>				

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## Part 1: Personal Waste Eco-Audit Questions

1. How does your daily waste total compare to the global average of a typical person in a developed country: 1.2 kg (2.6 lb.) and to the daily average of an American: 2.0 kg (4.4 lb.)? Explain factors that might influence why your daily total is similar to or different from those numbers.
  
  
  
  
  
  
  
  
  
  
2. Do you think the numbers you tallied for one days' worth of trash are reflective of your typical waste habits, or do you think you usually throw away more or less trash in a day? Explain.
  
  
  
  
  
  
  
  
  
  
3. What steps could you take to reduce your household waste?
  
  
  
  
  
  
  
  
  
  
4. Which was the largest category of waste you produced? Why do you think this was the largest?

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# Personal Electronic Waste Eco-Audit Datasheet

## Part 2: Personal E-Waste Eco-Audit

Use this worksheet to tally the electronics you have personally owned. For the purposes of this eco-audit, focus on electronics that are yours personally rather than on those that belong to other members of your household.

### Directions:

List every electronic item you can remember that you have ever owned. Be sure to list and record every version you have ever owned of each type of electronic device. For example, list every cell phone you have ever had (one per row) and then move on to the next category. Examples of common electronic products you may have owned include the following: cell phone, computer (desktop, tablet, notebook); mp3 player; speakers; digital camera; television; video game console; headphones; Bluetooth headset; hair dryer; flat iron; curling iron; electric toothbrush; electric razor; etc.

Electronic Waste Personal Eco-Audit Analysis Sheet				
Electronic	Make & Model	How long have you had it/did you have it?	If you no longer have it, why did you replace it (e.g., broken, out of date, etc.)	If you no longer have it, what did you do with it? (e.g., put in trash; recycled; sold it; gave it to someone else)
Cell phone	LG Quantum	2 years	Broken	Still have it in my drawer



