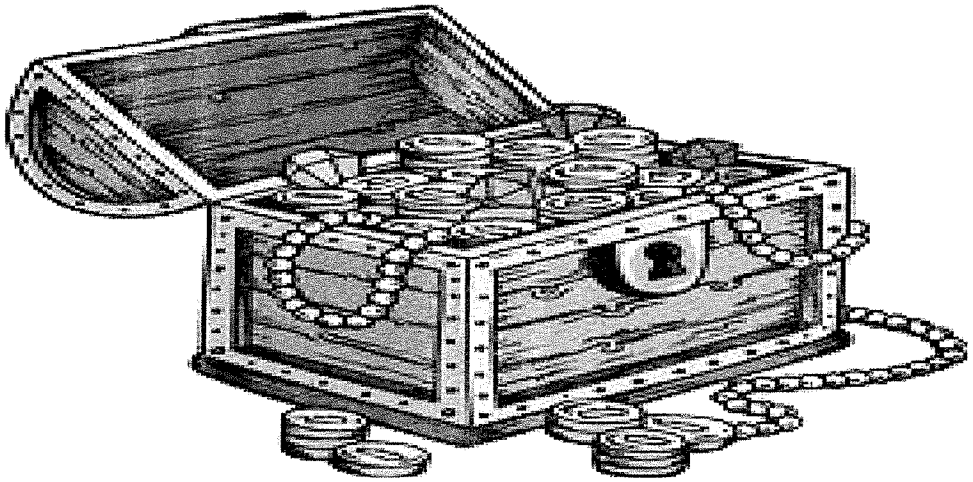
Trash Treasures



Many materials in addition to food are involved in the packaging and delivery of food! These materials are made from a variety of natural resources. In this activity, you will determine what types of resources you use in a 24 hour period.

You will be given a bag. For the next 24 hours place any food or drink packaging you use in your bag. This includes wrappers, bottles, cans, straws, silverware, napkins, etc.. No cheating! We want honest and accurate results! Bring your plastic bag with content to class tomorrow.

Questions: What percentage of materials collected come from each of the following categories: paper and wood, plastic, metal and glass?

Hypothesis (which category do you predict will have the greatest amount?):

Experiment Design:

Materials:

Bags
Triple beam balance or electric scale
Calculator

Gloves
Paper towels
Lab worksheet
Pencil

Protocol:

1. At your tables group all your trash together by categories (paper, plastic, glass, etc...)
2. Put all of your wood and paper products into a box and place the box on the scale.
3. Record the mass in your data table
4. Repeat steps two and three with all categories
5. All groups will add their weights together as a class and we will find the average use of each resource per student.
6. Next, create a bar graph to show the percent of total waste for each category (column 4 in your data table). Which resource is used the most? The least? Your graph should include a title, axis labels, number lines and a legend.

To find the average mass per student:

$$\frac{total\ mass\ in\ category}{number\ of\ students\ in\ class} = Average\ mass\ in\ category\ per\ student$$

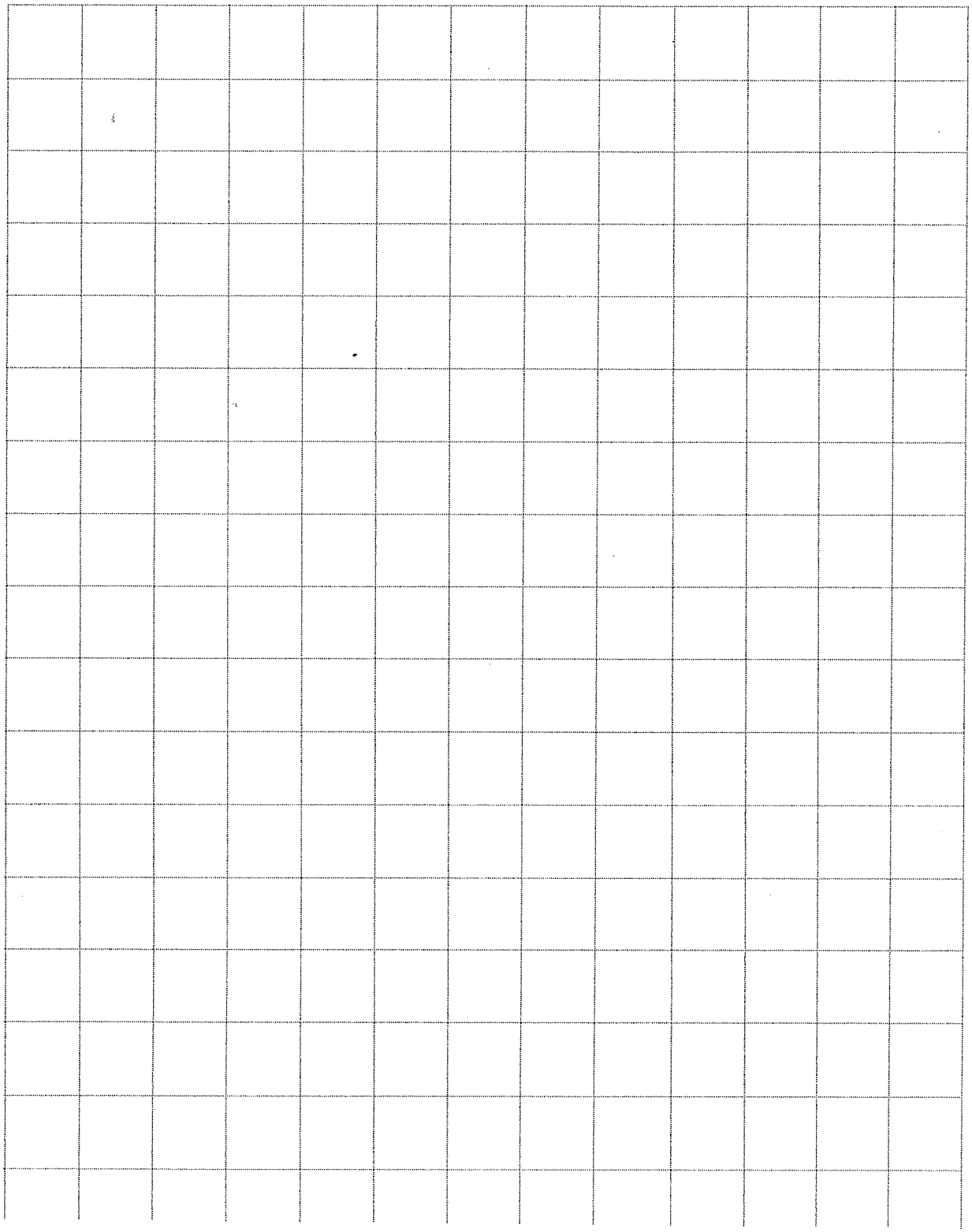
To find the percent of total waste

$$\frac{total\ mass\ in\ category}{Total\ mass\ of\ all\ categories} \times 100 = Percentage\ of\ total\ waste$$

Data collection:

Category	Total class Mass	Average Mass per student	Percentage of total waste	Notes
Paper and Wood				
Plastic				
Metal				
Glass				
Total			100%	

Your graph should go on the graph paper on the following page!



Conclusions:

1. What percentage of these materials came from renewable resources? What percentage came from nonrenewable resources?

2. There are about 700 students at our school. Find the mass of materials or the entire school for each category. Use the average per student.

$$Average\ mass\ per\ student\ \times\ 700\ students = Average\ mass\ for\ school$$

3. You have been asked to recommend some steps for students at this school to conserve material resources. Describe at least two things you would recommend. Base your recommendations on the data you have collected during this lab and what you have learned about material resources so far.