

Recycled Paper

5th Grade

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References:

<http://ofcn.org/cyber.serv/academy/ace/sci/cecsci/cecsci167.html>
<http://www.iit.edu/~smile/pl9608.html>

Benchmarks & Objectives:

ES-5: Explain how the supply of many non-renewable resources is limited and can be extended through reducing, reusing and recycling but cannot be extended indefinitely.

ES-6: Investigate ways Earth's renewable resources (e.g., fresh water, air, wildlife and trees) can be maintained.

ST-1: Investigate positive and negative impacts of human activity and technology on the environment.

ST-3: Explain how the solution to one problem may create other problems.

Materials:

- Blender
- Office paper
- Tons of newspaper
- Water
- Screens
- Canned food (rolling pins)
- Corn starch
- Measuring cups
- Wax paper
- Mixing bowls
- Large flat pat (pie pan, lasagna pan)
- Fan

Initial Introduction:

Review the concept of recycling. What does it mean to recycle? How exactly is it done? What can be recycled? What cannot be recycled? What are the benefits of recycling?

Fifty percent of the solid waste produced in North America is paper. Producing enough paper uses vast numbers of trees and immense amounts of energy. Waste products from the production of energy and from manufacturing often produce pollution, and live trees help preserve the global ecology. It makes sense to cut down on our high use of packaging in products. In addition, it makes sense to recycle.

Procedure:

1. Cover table with newspaper (this can get messy).

2. Fill mixing bowl half full with water.
3. Tear paper you wish to recycle up into small pieces and let soak in water for 10 minutes. (1 full newspaper sheet or three white office sheets)
4. In a separate smaller mixing bowl, mix a quarter cup of water with an eighth cup of cornstarch.
5. Stir until cornstarch is dissolved
6. Put mixture and soaked paper (drained) into blender and run on high for two minutes. I found that I had to add a little more water, especially for the newspaper.
7. Place the screen over the flat pan. Slowly pour the paper pulp on the screen evenly in the form of a square.
8. With hands slowly mold the pulp into an evenly thin layer of paper and press on it to drain as much water as possible.
9. Place a piece of wax paper over the recycled paper and use the canned food rollers to roll out as much water as possible.
10. Gently peel off the paper/wax paper from the screen. This can be tricky!
11. Dry the paper more by gently laying a new sheet of newspaper on top of it and pressing down. The new piece of newspaper will absorb some of the moisture. Repeat. Repeat.
12. Once sufficiently dry, peel paper from wax paper and sandwich between two pieces of newspaper. Press down to extract as much moisture as possible. Repeat. Repeat.
13. Set the paper to dry by a window or in front of a fan for the next 24 hours.
14. Clean up

Discussion and Extension:

What was the texture, color, odor, and so on of the paper?

Was the paper easy to write on? If so, in what ways, if any, does it need to be improved?

Do you feel that the effort to recycle paper is worth the trouble? Why or why not?

How many times can paper be recycled?

Can all types of paper be recycled in this same way?

Are other process utilized to recycle paper?

Assignment: (Optional)

Write a letter on your recycled paper to a parent, principal, or senator the expresses how you feel about recycling and the environment.