

RAFT IDEAS

Topics: Resources,
Recycling, Waste
Reduction, Properties

Materials List

- ✓ Open frames
- ✓ Window screen material
- ✓ Craft sticks and hot glue or staples
- ✓ Scrap paper
- ✓ Newspapers
- ✓ Dishpan (water-proof bin)
- ✓ Sponge
- ✓ Water
- ✓ Blender
- ✓ Optional: additives (e.g. -flower petals, grass) & Glue

This activity can be used to teach:

Next Generation Science Standards:

- Evaluating & Reducing Human Impacts on Environment (Grade K, Earth and Space Science 3-3; Grade 5, Earth and Space Science 3-1; Middle School, Earth and Space Science 3-3)
- Property of materials (Grade 2, Physical Science 1-1; Grade 5, Physical Science 1-3)



Written by Coral Clark (RAFT)

Paper Recycling

From Trash to Treasure



Students enjoy turning throwaway papers, like junk mail, into beautiful, fancy paper!

Assembly

1. Stretch a piece of window screen over one side of a prepared frame.
2. Secure the screen in place with craft sticks and hot glue or staples.

To Do and Notice

1. Rip the scrap paper into pieces about 2.5 cm (1") square as needed.
2. To make the pulp, fill a blender about halfway with water and add about 2 handfuls of paper pieces and blend on "high" until a pulp is produced. Optional: add flower petals, grass, fine glitter, and other items to the blender as desired.
3. Pour the contents into the dishpan.
4. Repeat steps 2 and 3 until the dishpan is about ½ full.
5. Optional: Add about 120 ml (½ cup) white glue to the dishpan as sizing. This step will help bind fibers and reduce ink running in the completed product.
6. Stir the contents of the dishpan, and then submerge the frame into the pan screen side up. Keeping the frame flat, lift it out of the pulp and water mixture.
7. Invert the frame onto a sheet of scrap paper that has been placed on a towel or section of newspaper and use the sponge to soak up some of the excess water.
8. Lift the frame to reveal the newly made paper sheet. Allow the recycled sheet to dry thoroughly before removing it from the scrap sheet.
9. Use paper as desired for writing, craft, or book-making purposes. Suggestion: Bind 10-15 sheets of paper into a small, note-sized book. The rough-hewn nature of the sheets bound together creates a desirable, hand-made, art/craft look that lists for a high price in stationary stores.

The Content Behind the Activity

The word *paper* is derived from the Egyptian *papyrus*, where the first documented thin sheets for writing, art, and record keeping were pounded from reeds over 5,000 years ago. About 105 a.d., T'sai Lun (China) was the first to create paper as we know it today from scrap rags. Over the next few centuries, papermaking techniques spread throughout the world, and paper became the popular medium of choice for written and artistic works. As paper became an industry, soft woods, like spruce, became popular cellulose sources. Although wood is considered a renewable resource, the process requires harsh chemicals that are harmful to the environment. Once the cellulose is removed from wood, however, it can be used over and over again, making recycled paper the best environmental choice. Although computers allow the hope of eventually having a near paperless society, we are certainly not there yet. Demand for paper is actually greater now than ever. 40% of America's trash is paper!

Web Resources (Visit www.raft.net/raft-idea?isid=261 for more resources!)

Find information on cellulose and other carbohydrates at: <http://hyperphysics.phy-astr.gsu.edu/hbase/organic/carb.html>

For more on the history of paper, go to: <http://www.hqpapermaker.com/paper-history/>

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