



TECHNIQUE:

Make Paper



Time Required:

2 hours - preparing plant materials
30-45 minutes – making paper

Materials:

- Blender (dedicated to papermaking)
- Water and a container
- Mold & deckle
- Plastic tub to hold mold and deckle
- Spoon
- Sponges
- Plastic tablecloth
- Tray, board, or smooth surface for drying
- Cotton linter or abaca sheets
- Recycled paper (colored and white)
- Plant materials
- Large enamel or stainless steel pot

Optional: glitter, flower petals, spices, tea leaves, seeds, confetti, lavender, perfumes, threads, etc.

Paper Supply Sources:

- <<http://www.papermaking.net>>
- <<http://www.handmade-paper.us>>

Tips:

- RECYCLE – Save fruit and vegetable peels; old paper, etc.
- Ask students to work in pairs — the mold and deckle can be tricky.
- Supply one blender per six students.
- Cover tables with plastic tablecloths to help contain the paper scraps.

Instructions: Use Recycled Paper

Make the Pulp:

1. Gather and sort white and colored paper. Rip paper into 1-inch pieces (or shred in paper shredder) and soak in water for 15 minutes.
2. Add 2 cups of shredded paper (**choose your colors!**) and add water one cup at a time (approx. 3-4 cups) and blend until a thick pulp is formed. Pulp should resemble applesauce or lumpy oatmeal.

Make the Paper:

1. Fill a plastic tub about one-third full of water.
(More water = thinner paper; less water = thicker paper. Experiment with water-to-pulp ratio!)
2. Pour the pulp into the water. Add whole items such as thread, leaves, or glitter. Stir vigorously.
3. Lower the mold and deckle into the water at a 45-degree angle and pull toward yourself, shifting it smoothly to allow the pulp to rise and settle into a layer, like panning for gold.
4. Slowly lift the mold and deckle out of the water while holding it flat and lifting straight up, allowing the excess water to drain into the tub.
5. Remove the deckle after much of the water has drained and place a second mold, screen side down, on top of the first so you have a screen/paper/ screen "sandwich".
6. With the help of your partner, place your hands flat inside of the frame that is on the back side of the mold, turn the mold so your hands are in a vertical (prayer) position and squeeze out the excess water over the tub..If the mold is too small to place your whole hand inside, use two sponges and press with your fingertips. Now separate the molds and place the one the paper sticks to with the paper side down on the surface you are using for drying.
7. Sponge from the back side to release the paper. Sponge as directed directly onto a flat drying surface. Old cookie sheets work great, but the best method for a group in a school or room they can return to the next day is to sponge the sheets onto a sunny window or glass door. Slowly lift the mold, making certain that the paper is not stuck to the screen. If the paper sticks to the mold, press along the edge of the screen to loosen.
8. Allow paper to dry (24 hours is best). To prevent the edges from curling, weight with a book or other flat, heavy object.
9. Pour the pulp through one of the molds, screen-side down to collect it. Use leftover pulp as papier mache to make small containers by molding it over a plastic yogurt container.



CAUTION!

Paper Uses:

Use your paper to make:

- Book Cover
- Bookmark
- Box
- Envelope
- Mounting Materials
- Greeting card
- Stationery



Paper "Clips"

A Paper Boat?

Did you know that paper boats were once made in Troy, NY, and that Cornell University rowed one to victory at the Centennial Regatta in 1876?

Paper Giants

The US and Canada are the world's largest producers of paper and paper products.

Therapeutic Paper?

In 1857, New Yorker Joseph C. Gayetty produced the first US- packaged bathroom tissue, called therapeutic paper. Fifty sheets sold for 50¢. In 1890, the Scott Paper Company sold the first tissue on a roll, specifically for use as toilet paper.

A Bad Wrap!

About 50 percent of the world's paper is used in packaging.

Paper Money

In 1690, the Massachusetts Bay Colony issued the first paper money in the colonies that would become the USA.

Save a Tree!

Each ton of recycled paper can save approximately 17 trees.

Paper Inventors

Were wasps and hornets the first papermakers? Check out their nests!

Instructions: Use Plant Materials You Collect

Collect fibrous plants:

- Willow, okra, berry, hollyhock, and milweed stems.
- Cornhusks, sedges, straw, rushes, and bamboo.
- Pineapple, gladiolus, artichoke, leek, and iris leaves.
- Citrus or banana peels, melon rinds, pumpkin shells, broccoli stalks, onion skins, beets, carrots,
- Anything fibrous from your yard or garden.

Watch your step!

Please limit plant gathering to common plants in abundance. Be careful to NOT disturb sensitive ecosystems, and of course, do NOT trespass. If you are unsure where to look, or don't have land readily available, collect materials from your kitchen, such as banana and orange peels, and corn husks. If you harvest outdoors, doing so at the end of the growing season yields the most papermaking fiber.

Prepare fiber:

1. Cut plant parts into small pieces and place in a large enamel or stainless steel cooking pot. Fill the pot $\frac{1}{3}$ full if using dried fiber; $\frac{1}{2}$ full if using fresh materials.
2. Add water to cover the plant materials.
3. Dissolve $\frac{1}{2}$ cup of washing soda into 1 cup hot water. Stir into pot.
4. Cover pot and bring fibers to a simmer. Simmer, stirring occasionally, until material resembles cooked celery, soft but still in tact (usually 2-5 hours). Remove from heat and cool.
5. Place fibers in a cheesecloth, mesh bag, or strainer. **OUTDOORS**, with a garden hose, rinse the fibers and squeeze out the water. Repeat until the water is clear. This removes the noncellulose material.

Make the Pulp:

1. Rip recycled paper, cotton linter, or abaca sheets into 1-inch pieces and soak in water for 15 minutes.
2. Place 1 cup of the soaked items into the blender with a teaspoon of cornstarch and about 2 cups water. Blend for 30 seconds.
3. Add 1 cup of the prepared plant fiber and blend for 10-20 seconds. Make certain not to leave clumps but too much agitation can weaken the fiber.

Make Paper:

1. Follow steps 1-9 from previous page.

