



Extension Lesson: Making Recycled Paper

Grade: 1-5

Subject: Writing, Art, Science, Math

Objectives:

Students will:

- explain the process of making used paper into new, usable paper
- explain the advantages to recycling paper and other materials

Teaching Time: two 40-minute class periods

Materials:

- old paper (anything but newspaper)
- blender and a wide container (pan-shaped)
- larger mixing spoons
- cups to scoop pulp onto screens
- blotters
- dishwashing detergent
- sponges or towels for soaking up water
- warm water
- a place to dry the paper
- iron (to help dry paper)
- scale
- (Optional:) spices, dried flowers, herbs, vanilla, etc.; a bathroom scale

REDUCE
REUSE
RECYCLE

Procedures:

- Use the written procedure and diagrams on to make recycled paper.

Reflection/Response:

- Ask students to describe how papermaking is done.
- Ask students to make a poster that encourages people to recycle paper.
- **What are the benefits of recycling paper rather than throwing it away?** Write the students responses on the board and add the following: (We don't have to cut down trees if we recycle, and there is less pollution created when we recycle paper. It leaves the forest so that wild animals have a place to live. We are conserving space in the landfill so that there will be a safe place to put our trash for as long as possible!)
- Have older students draw a step-by-step diagram of how the paper is made.

Extensions:

- Use the recycled paper to write and illustrate a poem.
- Use the recycled paper to make a sign that reads, "I saved a tree today."
- Collect all of the paper that would normally be thrown away for a day or a week. Weigh the amount of paper by standing on a scale. Estimate how much paper is generated weekly, monthly and annually by your class and have older students graph the results.
- Start a school recycling program, if you do not already have one, by calling your city or county officials for more information. Visit www.oregongreenschools.org for support in starting a school recycling program.
- Have a contest with another class to see who can recycle the most paper.

Oregon Common Curriculum Goal:

Arts: Create, Present, and Perform

- Apply artistic elements and technical skills to create, present, and/or perform works of art for a variety of audiences and purposes

English: Writing

- Structure information in clear sequence, making connections and transitions among ideas, sentences, and paragraphs.

Grade 5 Benchmark:

- Create, present and/or perform a work of art, using experiences, imagination, observations, artistic elements and technical skills to achieve desired effect.
- Structure writing by developing a beginning, middle, and end with clear sequencing of ideas and transitions.



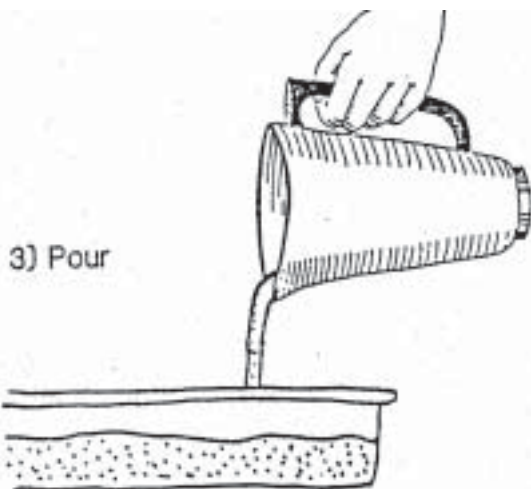
Extension Activity: Making Recycled Paper

Make recycled paper by using the following procedure:

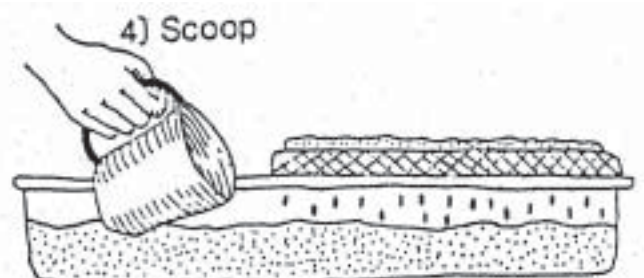
1 Tear sheets of used paper into small strips, about one-inch square. Loosely pack into blender until 1/3 to 1/2 full. Add warm water until blender is 2/3 full. It is also helpful to add a pinch or two of dryer lint, to improve the texture of the paper.

2 Blend (with lid on) until the paper looks like oatmeal mush (5-10 seconds). If you are coloring the paper by using scraps of construction paper, add them now. (If you desire white paper, add a small amount of dish washing detergent to de-ink the paper.)

3 Pour into a pan. When pulp is mush consistency, add about 1/2 inch of water for every blender-full of pulp, adding more or less, depending on the thickness of paper desired.

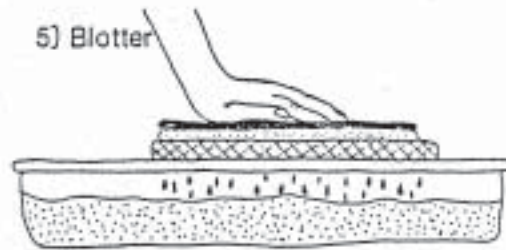


4 Scoop the pulp mixture evenly onto the screen with a cup (hold the frame over 1/2 of the pan). If students want to add things individually to their pulp (colors, paper bits, glitter, spices) they add it to their cupful. Let the pulp drain.

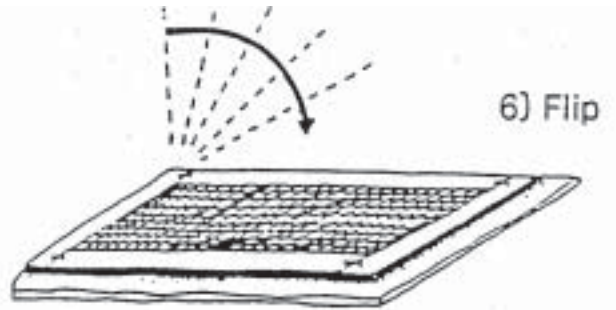




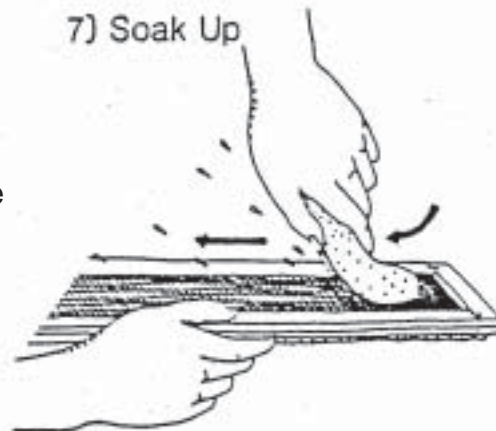
5 Place a piece of blotter over the wet sheet of paper on the screen, then flip the screen over so the paper is between the blotter and the screen, with the screen on top.



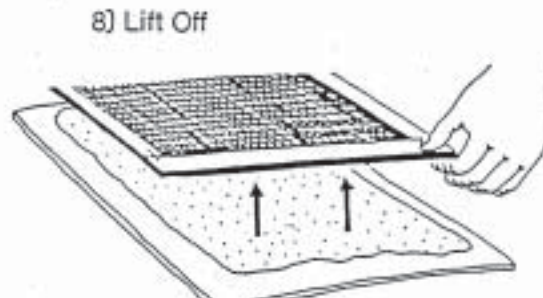
6 Soak up extra water with a sponge. This water can be squeezed out of the sponge back into the pulp mixture.



7 Lift off the screen and place the new paper in a safe place to dry. Drying takes one or two days. Exchange blotter and dry paper towels every few hours, if you want the paper to dry more quickly. The paper should not be touched or unnecessarily disturbed while drying. You may iron the paper to speed up the drying process; place a sheet of paper between the new paper and the iron.



8 For special effects, you may use cookie cutters to create unusual shapes for your paper, or you may add glitter or food coloring to the mixture.



As a recycling experiment, you can weigh the paper before placing it in the blender, then weigh the recycled paper after it dries.

- What conclusions can you make about yield from the original paper? What are the benefits of recycling paper? What are the drawbacks? Can paper be recycle indefinitely? (No, eventually the fibers break down.)