Homemade Botanical Paper

Make your own cards, bookmarks, or ornaments using homemade paper. You can add accents from your garden like dried flowers and leaves, or to make it truly magical, add seeds so that your paper can be planted in the garden.

Materials

- scrap paper
- 1 or 2 wooden frames (build your own or use old picture frames that are 5"x7", 8"x10", or 9"x12")
- window screening for 1 frame (a bit larger than the frame)
- staples (for tacking screen to frame)
- rubber or plastic tub (large enough to immerse frame)
- blender (for making pulp)
- felt or wool fabric (a bit larger than your frame)
- sponge
- optional: bits of fresh or dried flowers, aromatic herbs, seeds, even dryer lint (which helps make stronger paper); rolling pin

Approximate Time to Complete: preparation: at least 2 hours to overnight; activity: 1 to 2 hours

Location: Indoor

Ages: all ages

Season: all seasons

Instructions

1. Make a heap of paper scraps. See list below for suggestions. Keep in mind how you hope to use the final product when selecting your source. If you want to be able to write on the paper, use more light colored papers than bright or dark colors.

- Newspaper - Doesn't make great homemade paper and the ink can turn your product gray. But if that's your main source of scraps, try it out and compare the end product with paper made from other sources.

- Envelopes - A good choice. High quality envelopes have long fibers that help strengthen homemade paper.

- Junk Mail - A good—and abundant—choice that comes in a variety of paper qualities and colors.

- Colored paper - Can add spark to your creation. Some dyes are very strong and can impart bright hues, but can add soft tints if used in small quantities. Mixing too many colors could make your paper look muddy. Consider using tiny pieces of colored paper to add interesting flecks to your product.

- Copy paper - A good choice. Look for it in office recycling bins, flyers, and junk mail.

- Magazines - Most papermakers limit their use of glossy paper because the inks make the pulp gummy. Students may want to use some and compare their product with paper made from other sources. Small amounts can add interesting flecks.

- Uncoated gift wrap - Makes a great base for homemade paper.

2. Next, let 'em rip. Have youth tear the paper into pieces about one inch square. Consider separating different types and colors of paper at this stage so you can have more control when it's time to blend them.

3. Soak it. Put the torn paper in a tub or bucket of warm water and let it soak for at least two hours; overnight is better. This begins to break down the fibers so the mixture is easier to mash in your blender.

4. Blend it. Add soaked paper and water to your blender in a ratio of one cup of paper to two or three cups of water. It's good to start with your base color (usually light) and add other colors bit by bit, so you can see the emerging hue. Blend the mixture on medium high until it has the consistency of thin oatmeal.

5. If you want to use your paper to write or paint on, you can blend in a tablespoon or so of white glue, corn starch, or gelatin (dissolved in hot water), or 2 teaspoons of liquid starch. These additives, called "sizing," will make the paper less porous to ink and paint.

6. Perk it up with other additions. At this point, youth might want to add food coloring, glitter, herbs, or bits of colored paper or dried wildflowers and blend them for just 10 seconds, or simply mix them in by hand. (You can also wait and add accents in Step 11 to the top of your sheets once they've been made.) Papermakers sometimes add dryer lint to the pulp at this stage. The cloth fibers add texture and strength to the final product.

7. Make a mold. A mold, in papermaking parlance, is simply a screen-covered frame. A homemade frame or old picture frame works great. Cut your window screen an inch or two larger than the frame in all directions, hold it taut, and staple it to the back side of the frame. If you want your paper to have straight edges and be a specific size, you can use a second frame (with no screening) called a "deckle." (This rests on the mold and defines the shape of the finished paper.) If you'd rather have interesting, uneven edges, don't bother with the second frame.

8. Take a dip. Fill the rubber tub with two to six inches of water. The goal is to put the pulp in a watery suspension so it can be evenly distributed on the screen. Add about one blender full of pulp for every two inches of water. The amount of the pulp in the water will determine the thickness of the paper, so you may have to experiment with different ratios once you see how the sheets turn out.

9. After stirring the mixture, gently lower the mold at an angle, screen side up, into the tub starting with one edge and slide it to a horizontal position near the bottom. If you're using a second frame (deckle), place it on top of the screened frame. Gently shake the frame(s) back and forth, and then quickly lift the screen straight up, allowing fibers to cover it and the water to drain through. Drain excess water back into the tub, resting the screen on the corner of the tub. (Instead of dipping the screen, some people simply pour blended pulp directly through the screen and tip it side to side so the pulp spreads out evenly.)

10. Flip and dry it. Use a sponge, cloth, or paper towels to gently pat off excess water from the back side of the screen. Next, lay a piece of felt on top of the paper on the screen and turn it over onto a hard surface (e.g., a cookie sheet). (Water will run right through the felt.) If your newly made paper doesn't come off the screen, dry the back of the screen some more, tap the frame gently, or carefully peel the wet paper off.

11. This is a good time to add dried flowers or herbs, spices, thread, seeds, and other items. Paper with embedded seeds makes a great gift that can actually be

planted! You can also make imprints by pressing in plants or heavy lace and leaving them on until the paper has dried.

12. To help your paper dry faster and lie flatter, cover it with another sheet (or more) of felt, newspaper, or towels, and press down with your hands, a cookie sheet, or a rolling pin. (This also helps bind the fibers.) You can continue to pile up layers as new sheets are made. Try weighing down your paper sandwiches for a half day or so with books or boards and then carefully peeling off your final creation. Lay the paper in a dry spot, turning it every now and then to keep if from sticking, or hang it on a line to dry.

Enjoy your new paper and share with others!

Fun Facts About Paper

Over millennia, people tried all kinds of portable writing surfaces ranging from wood to cloth. About 5,000 years ago, ancient Egyptians hit on the idea of layering strips of a wetland plant (papyrus, from which the word paper is derived) and pounding them together to make flat sheets. Although experiments in using fibers to produce writing material likely continued, it wasn't until 105 AD that a Chinese man perfected the process. It seems that the Empress was a book lover, but wanted to find a cheaper material than silk scrolls to print on. The man mixed fibers from the shoots of bamboo, bark of the mulberry tree, and other sources with water to form a pulp that he poured through woven screens. As the water drained through the screen, fibers adhered to the surface and fused into paper.

The Chinese remained the prime papermakers for 500 years, but the craft eventually spread to Japan and across central Asia via caravan routes. Meanwhile, animal skins had been the medium of choice throughout much of Europe, but by the mid-15th century, paper was king. Old rags and clothing (made from plant fibers such as flax, nettle, and hemp) were the main ingredients. But Gutenberg's invention of the first printing press catapulted the demand for paper and the knowledge it could deliver. As literacy and the output of books increased, the supply of good rags plummeted, so the industry turned to using the seemingly endless supply of wood pulp.

Shortly after the Pilgrims came to America, the first printing press was set up, but paper had to be shipped here from Europe. In 1690, the first paper mill was built in Pennsylvania and within 120 years, there were nearly 200 paper mills in the U.S. Here, rags had become the main ingredient for papermaking, but as they grew scarce, companies experimented with materials such as oat straw, sugar cane waste, and cornstalks. Today, newspapers, boxes, and other low and medium grade papers are made from wood pulp. The finest papers still have a high proportion of linen and cotton rag pulp.