LEARN ABOUT

FORESTS

We all depend on trees and forests! Use this fun, hands-on activity to engage youth in learning about sustainable forest management. It's perfect for educational events, career days, or field visits.

MAKE YOUR OWN PAPER

PLAN

KEY CONCEPT: Forests are the source of products that people use every day (from paper and tissue, to furniture, food, clothing, their house structure, and many more). [PLT Forest Literacy Framework, Concept 2.B.3]

OBJECTIVES: Provide opportunities and materials for learners to

- Describe the steps of the papermaking process.
- Identify the importance of trees as a renewable resource.

SESSION TIME: 50 minutes

SETTING: Indoors or outdoors

For more *Learn About Forests* activities and supporting resources, visit www.plt.org/learnaboutforests

BACKGROUND

Many products that we use are derived from trees. Cellulose is the major component of wood and is used to make paper and paper products, including books, wrappers, cereal boxes, and newspapers.

The process for making paper was invented in China in the second century A.D. Until the Industrial Revolution, paper was made one sheet at a time. Today's modern machines can make a sheet of paper 26 feet (8.8 m) wide and nearly 40 miles (64 km) long in just one hour!

During the papermaking process, mill machines debark and shred logs into millions of chips the size of breakfast cereal. These are broken down with chemicals, steam, and pressure to make a pulp that is sprayed onto a wide, moving wire screen. The water in the pulp drains through the screen holes, forming a damp mat of wood fibers, which is the paper. Steam-heated rollers dry the paper.

Recycled paper is made by breaking down waste paper into pulp, which is then formed into paper products. In this activity, learners recycle waste paper to make new paper.

BENEFITS OF FORESTS

About one-third of the paper used in the United States is made from trees that are thinned (harvested from a forest) to give other trees room to grow. Some trees are planted and grown specifically for making paper and wood products that we use every day. In well-managed forests, trees are planted to replace harvested trees. SFI-certified organizations plant an average of 2.5 million trees every day across the U.S. and Canada.

PREPARE

MATERIALS: Scrap paper (paper towels, construction paper, and toilet paper work well); a large bowl; a wooden frame 5" x 7" (13 cm x 18 cm) or 8" x 10" (20 cm x 25 cm); nylon or wire screen; a stapler; a plastic basin at least 2.5 gallons (9.5 liters) in capacity and larger than the frame; blender; sheets of newspaper; sponge; strainer. Optional: Colored paper; liquid starch; rubber gloves; small dried leaves, seeds, or flowers; plastic bags for transporting wet paper.

GET READY:

- Plan to have another adult lead an alternate activity (like a site tour) while you supervise the papermaking with small groups of learners. Set up a papermaking station outside or in a space that won't be damaged by water.
- Remove any plastic or staples from the scrap paper and tear it into small pieces (1-inch or 2.5-cm squares). Soak the paper in hot water in the large bowl for at least 30 minutes.
- Tightly staple or tack nylon or wire screening to the wooden frame, making a "deckle," which is the surface on which you will layer the fibers.
- Plan to collect the leftover pulp in a strainer at the end of the activity and recycle it or freeze it in a plastic bag for future use—do not pour it down the drain because it may clog.

PROJECT LEARNING TREE
An initiative of SFI

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LEAD

INTRODUCE:

Ask learners to name things they've used today that come from trees. Ask what they think paper is made of and how it is made. Point out that wood, food, and paper are three of the main kinds of products people get from trees. Explain that today they will try making paper themselves.

EXPERIENCE:

1. Fill a blender halfway with warm water, adding a handful of soaked paper scraps. Blend at medium speed until the pulp has a soupy consistency.
2. Pour the mixture into the large basin and fill it with warm water, mixing thoroughly. Adding a few ounces of liquid starch will help make the paper firm. They may add dried leaves, seeds, or flowers for interest.
3. Slide the deckle into the basin, put some pulp onto the screen, and hold the deckle underwater as you move it gently back and forth to get an even layer of fibers on the screen.
4. Lift the deckle out of the mixture, keeping it flat.
5. Allow the deckle to drip until most of the water has drained off, leaving a uniform layer of pulp mixture on the deckle. Press the pulp gently with your hand to squeeze out excess moisture (wearing rubber gloves helps). Soak up any excess water from the bottom of the screen with a sponge.
6. Place sheets of newspaper onto a flat surface and turn the deckle paper-side-down. Lift the deckle gently, tapping the screen to release the paper onto newspaper.
7. Instruct learners to let the paper dry naturally overnight and then gently peel the paper off the surface. (If they must transport the wet paper, have them lay a piece of newspaper on the wet paper, carefully roll up both layers together, and place them in a plastic bag.)

CONNECT:
Ask learners what other products come from trees. Talk about the idea of trees as a renewable resource.

CLOSE

Ask: What can people do to care for trees? How can we make sure we always have trees for the products we need?

TAKE ACTION

Invite learners to research innovative ways that people use forest fiber—in cleaning, construction, packaging, or clothing—as a renewable resource. Using such resources in a mindful way ensures that they will always be available to future generations (whereas using throwaway items like single-use plastics is not sustainable).