



SWENext Engineering Challenge #9

Recycling Paper

Hope you all had a great time building your Robo Arm last month. This month we're going to change gears and work on making your own recycled paper! You can use your recycled paper for all sorts of things ... how about using it for creating your Halloween Cards ☺ .

While you are making your Recycled Paper, think about these questions:

- What are some reasons we might want to recycle paper?
- What other material can we use to make recycled paper?

As noted in the [directions](#) changing newspaper into pulp takes several hours and the drying process can take a day or two!

How did you use your recycled paper?

Send us pictures of your creation. We would love to see your Robo Arm!! Good luck and have fun!

Source: <http://www-tc.pbskids.org/zoom/printables/activities/pdfs/recyclingpaper.pdf>

#SocialMedia

Share your pictures and videos from this activity on Facebook, Instagram or other social media with us and other SWENexters. Show us your creative games and see what kind of games other SWENexters created!

Use the hashtags:

#SWEtheFuture #SWENext #BeThatEngineer #ZoomSci #RecyclingPaper

To have your design featured by SWE please keep a lookout for an email on how to do this!

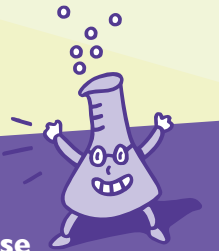


Recycling Paper

Breaking news!
Newspaper turned into paper!

What You Need

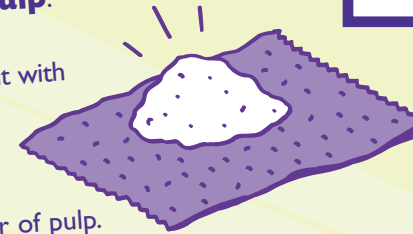
- newspaper (4–5 sheets to tear up and some extra sheets for the pressing process)
- large bowl
- hot water
- cornstarch
- measuring spoons
- aluminum foil
- wooden spoon
- scissors
- sharp pencil
- decorations like tissue paper, confetti, or glitter



Science Scoop

Newspaper is made of **cellulose** fibers, which come from plants. Paper is made of millions of these fibers tangled together in a thin layer. The fibers naturally **bond** to one another. **Water** breaks down this bond. When you covered the newspaper with water, the fibers in the paper **loosened** their hold on each other. Then you're able to **rearrange** the fibers into new paper. The cornstarch you added helped **bind** the cellulose fibers to each other again. When you left your recycled paper out to dry, the water **evaporated** from the pulp and the fibers **stuck** together again to form a piece of **recycled paper**.

- 1 Start** by cutting the newspaper into small pieces and put them in a bowl.
- 2 Pour** in enough hot tap water to cover the paper and mix it until all of the paper is wet.
- 3** Let the paper **sit** for a few hours. When it looks and feels like cooked oatmeal, you're ready to make paper.
- 4 Add** a few tablespoons of cornstarch and a little more hot water. **Mix** it all up again. This is the **pulp**.
- 5** Make a **strainer** out of a piece of aluminum foil. **Punch** lots of small holes in it with a sharp pencil.
- 6 Put** the aluminum foil on top of a pile of newspaper.
- 7 Cover** the aluminum foil with a thin layer of pulp. **Place** another sheet of aluminum foil on top and press down to drain the extra water.
- 8 Lift** the top sheet of foil and **decorate** the pulp with things like colored tissue paper, glitter, or confetti.
- 9 Fix** any holes in the pulp and replace the top sheet of foil.
- 10 Place** books on top of the pulp to **press** it flat. **Remove** the books and the top layer of foil. **Leave** the pulp out overnight (or longer) to dry.
- 11** Once the pulp is dry, carefully **peel it** from the foil. You just created paper!



Try making paper from other materials like cardboard or tissue paper. Write to ZOOM at pbskids.org/zoom and tell us how you made your recycled paper.



Changing newspaper into pulp takes several hours and the drying process can take a day or two.

Sent in by Tiffany and Boalong of Lincoln, NE



The Weezie Foundation



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