



Making a collage involves combining many items and placing them on the same piece of paper to make one picture. Collages can be made by pasting different pictures on a piece of paper. For example, a collage could be made from pictures of animals in the zoo. Other collages may be put together from materials made from different kinds or colors of fabrics.

In this activity, you will create a collage by using vinegar to transfer color pictures from a newspaper onto a piece of white paper. The type of inks that are used for color pictures in the newspaper make it possible to transfer the pictures from the newspaper to other papers. The inks, the vinegar, and the paper are all made of chemicals.

Materials

Color pictures from a newspaper
White vinegar in a small cup
Cotton swabs
Metal teaspoon
Paper towels
Scissors
White paper

To read
Milli's Safety Tips
click here!



SAFETY: Be sure to follow Milli's Safety Tips and do this

activity only with adult supervision! Do not drink any of the liquids used in this activity. Eye protection must be worn by everyone performing this activity.

Procedure

1. Carefully use the scissors to cut out a small (5 cm by 5 cm or smaller) color picture or comic from the newspaper.

2. Dip a cotton swab in the vinegar. Lightly moisten the picture you want to copy by wiping the picture with the vinegar-soaked swab. Make sure to cover every part of the picture with vinegar.
 3. Place the picture between two paper towels and press hard for 5 to 10 seconds to dry off any excess vinegar.
 4. Place the picture with the side to be copied face down on a piece of white paper.
 5. Place another piece of white paper on top and rub hard with the bottom of a teaspoon. Make sure to rub over the entire picture.
 6. Remove both the upper paper and the piece of newspaper. There should be a transfer of the picture on the bottom white paper. (If the transfer is too faint, repeat the process with a different picture but rub with the edge of the spoon instead of the bottom.)
 7. Choose a different picture and repeat steps 1–6, placing the second picture at a different location on the same piece of white paper when the transfer is made.
 8. Repeat Step 7 until the collage has several different pictures transferred onto it.
 9. Thoroughly clean up the work area and wash your hands.
3. To make the words easier to read, turn the paper over and use a cotton swab to rub a little baby oil on the back of the paper.
4. Observe what happens.

Where's the Chemistry?

The ink used on the newspaper does not mix well with water. In other words, the ink does not dissolve easily in water. This is good because the ink is less likely to smudge when the newspaper gets water on it, even from the moisture on fingers. The ink does dissolve a bit better if certain kinds of chemicals are added to the water. Vinegar is a solution of water and a weak acid called acetic acid. (Check the label of the vinegar bottle.) When the vinegar is wiped over the color picture, some of the ink dissolves and the picture can be transferred more easily to another piece of paper.

Look at the two transfers. When words were transferred, it was easy to notice that they were reversed, just as the pictures were. When you apply baby oil to the back of the paper, the oil makes the paper "translucent" so that light can shine more easily through the paper, and because of it, the image or words can be seen as well.

Going a Step Beyond

1. Repeat the above activity except this time, transfer something with words on it.
2. Observe how the appearance of this transfer compares to the transfer of the picture.



The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at www.acs.org/kids.

Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

Never eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

Never experiment on your own!

For more detailed information on safety go to www.acs.org/education and click on "Safety Guidelines".

