

Today's Tape – Terrific but Tacky!

The sticky stuff used to make tape is different from glue because it doesn't need to dry up and harden in order to work. Tape sticks well even though it stays kind of gummy or tacky. In fact, after a very long time, when it does dry out, it doesn't stick well at all. In the following activity, you can try a terrific tape tester to determine the tackiness of tape!

Materials:

- 2 chairs of the same height
- Wooden ruler
- Cellophane tape (about 1 cm wide)
- Masking tape (about 1 cm wide)
- Adhesive tape (about 1 cm wide)

Procedures:

1. Place 2 chairs back-to-back and lay a ruler across them as shown.



2. Cut a piece of cellophane tape about 15 cm long. Tape one end to the bottom of the ruler, across the entire width. Tape the other end to a plastic sandwich bag as shown.
3. Place pennies, one-at-a-time, into the bag until the tape pulls completely off the ruler.



4. Repeat steps 2 and 3 with the two other types of tape.

Think about this ...

Different types of tape are made to stick well to different surfaces. You can change the surface of the ruler by covering it with paper, plastic wrap, or aluminum foil. Repeat the experiment to see which tape sticks best to which surfaces.

Where's the Chemistry?

Tape is made from material such as cellophane, cloth, or plastic that is covered on one side with a very thin coating of adhesive. The other side of the tape is made so that the adhesive doesn't stick to it too well or it would be too difficult to unroll a piece of tape to use it. The adhesive on tape is not a liquid like glue, but is more rubbery – kind of between a solid and a liquid. Unlike glue, the adhesive on tape doesn't need to harden in order to stick. But like glue, the adhesive gets into the tiny spaces in a material and fills up the space and gets tangled and caught and sticks.



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".

