

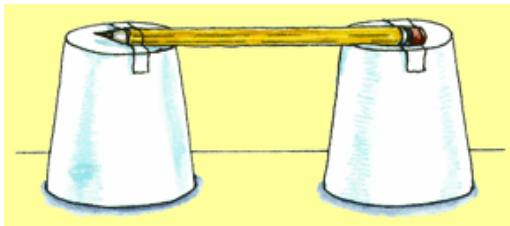
A liquid can change its state to a gas by evaporation. When a liquid evaporates, some of the liquid goes up into the air and becomes a gas. Some liquids evaporate faster than others. In this activity, see which liquid leaves its state the fastest!

### Materials:

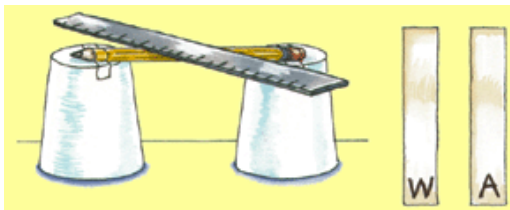
- Water
- Alcohol
- Paper towel
- Scissors
- Pencil (round)
- Ruler
- 2 paper or plastic cups (16 oz)
- 2 small paper or plastic cups
- Tape

### Procedures:

1. Place the two large cups upside down on a flat surface. Place the pencil across the cups and tape the pencil down as shown.



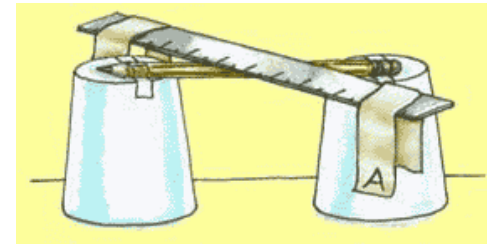
2. Place a ruler on the pencil so that the ruler is as balanced as you can make it. Cut two strips of paper towel, each 20 centimeters (cm) long and 4 cm wide. Write "W" on one strip and "A" on the other.



3. Pour 1 tablespoon of water into one small cup and 1 tablespoon of alcohol into another.
4. Dip the "W" paper towel strip into the water until it is completely wet. Your partner should dip the "A" strip into the alcohol until it is completely wet.



5. Work together to place the wet strips at the very ends of the ruler. Balance the ruler on the pencil.



Observe the ruler as the alcohol and water evaporate. Which do you think will evaporate first? How does the experiment show you which liquid changes from a liquid to a gas the fastest?

### Think about this ...

Here's another easy way to tell that alcohol changes from a liquid to a gas more quickly than water. Dip one cotton swab in alcohol and another in water. Make a quick swipe of each liquid on a separate area of brown paper from a paper bag.

Blow on the lines and see which one disappears first. What did you notice?

## Where's the Chemistry?

Different substances have different characteristics. One of the characteristics of different liquids is how fast they change from a liquid to a gas or evaporate. When you did the activity, you probably saw the alcohol side of the ruler go up and the water side of the ruler go down. That is because alcohol evaporates faster than water. As the alcohol changed its state from a liquid to a gas, the alcohol side of the ruler got lighter causing it to rise up.



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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](http://www.acs.org/kids).

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## 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](http://www.acs.org/education) and click on "Safety Guidelines".**

