

ACTIVITY: Secret Message

Adapted from www.pbskids.org

Explore acids and bases as you create your own invisible ink!

VIDEO

Watch the video [COSI Workshop: Phenolphthalein](#).

MATERIALS

- baking soda
- water
- 2 bowls or cups
- grape juice concentrate
- Q-tips
- cotton balls
- white paper

INSTRUCTIONS

1. If still frozen, follow instructions on the back of the grape juice concentrate to create a liquid. Pour a little bit of that liquid into a bowl for your activity.
2. In a separate bowl or cup, combine 1 tsp baking soda with 1 tsp water. This is your ink.
3. Use a Q-tip to write a secret message on your sheet of white paper using the ink you just made.
4. Allow the paper to dry completely (10 – 15 minutes)
5. Once your paper is dry, dip a cotton ball into the bowl of juice. Squeeze out the liquid and gently pat it onto the paper. Can you see the secret message?

Which liquids revealed the hidden message? Did one work better than the rest?

What's going on?

Baking soda, or sodium bicarbonate, is a base. Grape juice is an acid. When you combine your acid with your base, a chemical reaction will occur. Chemical reactions cause changes to the substances that go into the reactions. Sometimes, one of the changes that can occur is a change in color. That's what is happening here. The chemical reaction turned the "ink" into a color you can see!



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