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## DIY ACTIVITY

### SECRET MESSAGE GRADES 3-5

#### OBJECTIVES

- Use a chemical change to create a fun secret message to trick their friends and family.

#### PROCEDURE

 **WATCH THE GENERATION GENIUS CHEMICAL VS. PHYSICAL CHANGES VIDEO AS A GROUP.**

1. Start by mixing 2 tablespoons of baking soda into one cup of water. It's okay if the baking soda doesn't all dissolve.
2. Dip one end of a cotton swab into baking soda mixture and tap off any drips. Use the moistened cotton swab to write a message on the center of the paper. This works best if you keep the message short.
3. Let the paper dry for about 10 minutes. The writing should disappear.
4. Share the paper with a friend. Tell them they can reveal the secret message using a blackberry.
5. Instruct your friend to rub the blackberry back and forth across paper without pressing too hard. The smeared purple juice should reveal the secret message!

#### MATERIALS NEEDED

- Cotton swabs
- Baking soda
- Water
- Measuring cup
- Measuring spoon
- Paper
- Blackberries
- Latex-free gloves

**Activity Duration:** 30 minutes, including drying time

#### WHAT IS GOING ON HERE?

After you write on the paper with the baking soda and water mixture, the water evaporates leaving baking soda crystals that form your letters. The purple pigment from the blackberry reacts with the baking soda forming a new, blue substance where your letters appear! Since a new substance is formed, this is a chemical reaction.

#### FURTHER EXPLORATION

Experiment with other fruit—do only blackberries work for this chemical reaction? Then explore making ink with substances other than baking soda—try sugar, salt and cornstarch. You could also try exchanging water for another liquid—maybe milk or juice.