

# It's a Natural

There are lots of colorful substances in nature that can change their color with the help of a little chemistry. Try the ones in the activity below!

## Materials:

- Grape juice
- Red carnation
- Red cabbage leaves
- Radish
- Vinegar
- Baking soda
- Measuring spoons
- Water
- White unlined paper
- Cotton swabs
- Clear plastic cups
- Masking tape
- Pencil

## Procedures:

1. Add 1 teaspoon of baking soda to 3 tablespoons of water in a cup. Label this cup baking soda.
2. Pour a little vinegar into a cup and label this cup "vinegar".
3. Use the cotton swab to paint a picture with the grape juice. Add more color to your picture by rubbing the flower petals and other plant parts onto the paper.



4. Paint over your picture with the baking soda solution. What happens to the colors in your picture? Now paint over your picture with the vinegar. What do you see happening?



## Think about this ...

You could do some secret writing with your chemical color changers! Rub a red cabbage leaf, a radish, and a red carnation petal on a piece of paper. Use a small white candle to write a message on the colors. Dip a cotton swab into a baking soda solution and wipe it over the colored area. Your secrets are revealed!

## Where's the Chemistry?

Red cabbage leaves, radish skin, and red carnation petals all contain chemicals that give them their reddish color. These chemicals are called pigments. When you rub these plant parts on paper, some of the pigment chemicals end up on the paper. When certain other chemicals are added (such as baking soda solution or vinegar), a chemical reaction occurs and the original pigment on the paper changes color.



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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".**

