# Extracting Colors

Dyes are often organic colorants that are soluble in water. Inks can be made from natural dyes that come from metals or the outer covering of nuts or seeds. In this activity, you will predict the color of a dye made from plant-based material, extract the color, and research the pigment responsible for the color.

## Procedure

1. Your team will work together and use one of the following ingredients—red onion skins, yellow onion skins, blueberries, or blackberries—to make dye. Before beginning, predict the dye's color and record your prediction in the chart.
2. Follow the recipe below for your berry or onion skin type to make your dye. Take the following precautions: Wear goggles. Use potholders or mitts when touching hot pots. Be careful not to spill dyes on your skin or clothing because they stain.
3. Make a chart like the one below on a separate sheet of paper, with areas large enough to record your results. After you have made the dye, record its color and intensity (i.e., blue, very light) in your chart.
4. Use a thin paint brush or sponge piece to test the color of your dye on white construction paper. Record the color results in your chart.
5. Next, research the name of the pigment that is responsible for the color of your dye. Also research the pigment's function for the plant, and the pigment's uses and/or potential benefits for humans. Record this information in your chart.

### Extracting Colors Pigment Chart

| | Dye Color Prediction | Dye Color in Jar | Color Imparted on Paper | Pigment Name | Function in Plant | Benefit for People |
|---|---|---|---|---|---|---|
| **Red Onion** | | | | | | |
| **Yellow Onion** | | | | | | |
| **Blueberry** | | | | | | |
| **Blackberry** | | | | | | |

### DYE RECIPE

- Boil about 500 ml of water.
- For onions: Add red or yellow onion skin preparations. (For each type of onion skin, place a large handful of onion skins in knee-high nylon stocking. Make a knot in the stocking at top.)
- For berries: Add 1 cup blueberries or blackberries.
- Simmer for 30 minutes.
- Cool, then carefully pour dye through sieve into the spouted measuring cup.
- For onions: Discard nylon sacks and pour dye into jar. Seal jar.
- For berries: One student should hold the cheese cloth over the jar so that the cheese cloth dips inside while another student slowly pours the dye into the jar. The cheese cloth will catch berry particles. Discard berries. Seal jar.