### Materials
- Wool or cotton material to dye
- Plant material (*Onion skins or carrots for yellow. Red onions, raspberries, or beets for pink. Grass or spinach for green*)
- Knife
- Glass bowl
- Water
- Saucepan
- Sieve
- Alum

### Procedure
- With adult supervision, use the knife to cut up the plant materials. Soak the chopped up materials overnight in just enough water to cover them.
- The next day, pour the plant materials and the water into a saucepan. Have an adult bring the mixture to a boil and simmer it gently for an hour. Add water when needed.
- Strain the mixture through a sieve to remove the plant material. Pour the remaining liquid back into the saucepan. Measure the liquid - for every quart, add 1 tsp. of alum.
- Wet your fabric and wring it out, then place it in the saucepan with the liquid. Have an adult slowly simmer the fabric in the liquid. The fabric will change color - take it out when the color is just a little darker than you want. It will lighten when it dries.
- Rinse the fabric in cold water and wring it out, then let it dry.

### Results
You have created a colorful dye and used it to color fabric.

### Why?
People have used plant materials to create dyes for thousands of years. The colors used in dye come from pigments found in plants, shells, scales, and even small invertebrates. The main pigment found in most plants is the green pigment chlorophyll because it helps absorb energy from sunlight. Some plants may have other colorful pigments to attract insects in order to increase pollination. Different parts of plants contain pigments we can use as dye.

To learn more about biology, check out the Natural History galleries at the Pink Palace Museum.