Color Changing Carnations

Age Range: 4-17

Skills/Subjects:
• Earth Science
• Observation
• Pollution Prevention

Materials:
• White Carnations
• Flower Vase(s)
• Food Coloring
• Water
• 24 Hours

Directions
1. Fill vase ¼ - ½ full of water
2. Add about 20 – 30 drops of food coloring to the water
3. Before placing any of the flowers in the cups of water, have an adult trim the stem of each flower at an angle to create a fresh cut.
4. Place one freshly cut white carnation into each vase of water.
5. Check back every few hours to see how it's working. At the end of the experiment, examine the whole plant carefully and discuss what happened.

Alternative Experiment
Have an adult use a sharp knife to slit the stem of your carnation straight down the middle. Put each half of the stem into a different cup of colored water (for instance, a vase filled with red and one filled with blue). Make a few predictions: Which color will be soaked up? Will the colors mix to make a new color or will the color of the flower be divided down the middle? Just remember to keep the ends of the stems wet at all times and to make fresh cuts on the ends.

Things to Think About
Most plants "drink" water from the ground through their roots. The water travels up the stem of the plant into the leaves and flowers where it makes food. When a flower is cut, it no longer has its roots, but the stem of the flower still "drinks" up the water and provides it to the leaves and flowers. Coloring the water with food coloring does not harm the plant in any way, but it allows you to see the movement of water through the roots to the shoots. Splitting the stem simply proves that the tiny tubes in the stem run all the way from the stem to the petals of the flowers.

Like colored dyes in this experiment, some chemicals that pollute our waters can get into the soil and ground water and contaminate our vegetables and plants growing in the soil. Some chemicals and pollutants, just like the color dyes, may travel up into the plant and affect its health or growth.