COLOR CHANGING FLOWERS

Where does the water go when a plant is watered? As the colored water is absorbed, students will be able to see how the water is absorbed into the plant and will be amazed when the petals of the carnation change color.

You need:
- 2 cups
- food coloring (red, blue or green)
- 2 carnations

1. Fill two plastic cups with water.
2. One cup should contain plain water.
3. Add about 20-30 drops of food coloring to the second cup of water.
4. TIP: 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. Cut stems under water so no air bubbles can get in to break the tube of water and make the flower wilt.
5. Place one freshly cut white carnation in the cup containing the uncolored water.
6. Then place a freshly cut white carnation in each of the cup of colored water.
7. Check every few hours to see how the petals are changing color. The only way the petals can change color is if the food coloring travels up the stem and goes to the petals. After about 24 hours, the petals of the flower will turn from white to the color of the food coloring.

How does it work?
You can discover how roots and stems of plants function. The leaves and petals of plants have lots of small holes called stomates. They're too small to see. Water evaporates through these holes. This is called transpiration. After the water evaporates, the plant needs more water to grow. If the flower is planted in soil, the roots of the plant get the water from the soil and then the water travels up through its stem. But, if the flower is in a container of water, it doesn't have any roots so it just sucks up the water through its stem.

TURN THIS EXPERIMENT INTO SCIENCE FAIR PROJECT FOR UPPER ELEMENTARY:

This is a good science fair experiment because you start with a control, or something that doesn't change in the experiment (in this case, the control is the carnation in the plain water). Then you add a variable, or change something in the experiment (in this case, you change the color of the liquid) and you make some comparisons between the control flower and the flower that has been exposed to the variable.

You think of another idea to test, like splitting the stem in half and testing two colors at once, and you make some more comparisons. For example:
- What if you put one side of the flower in water and one side in salt water? Would the flower thrive or would one side thrive and the other side shrivel up and die?
- What would happen if you put the carnation stem into soda instead of water? Could you create a root beer-colored carnation? What if you used clear-colored soda like 7up for one side of the flower and dark colored soda for the other side? Would the flower be divided in color, all one color, or not colored at all?
- What would happen if you split the carnation and put one side of it in water and the other side in colored water? Would the flower be all one color or would only half of it absorb the color?