



Growing Carnations in Colored Water

— Observing Dye Uptake —



QUESTION

How does colored water move through a carnation plant?



HYPOTHESIS

If a carnation is placed in colored water, then the colored water will travel up the stem and the dye will appear in the petals.



MATERIALS

- 4 white carnations
- 4 clear cups or jars
- Water
- Food coloring (red, blue, green, purple)
- Scissors
- (Optional) Paper towels



VARIABLES

- **Independent Variable:** Color of the water (dye)
- **Dependent Variable:** Amount and location of dye seen in the carnation
- **Controlled Variables:** Type of flower (white carnation), amount of water, type of container, light conditions, time



WHAT'S HAPPENING?

Plants take in water through tiny tubes in the stem called xylem. The colored water (with dye) moves up these tubes to reach the flower. The dye shows us the path the water takes and appears in the petals as the flower soaks it up.



CONCLUSION

What did you learn from this experiment? _____



PROCEDURE

1. Fill each cup with about 1 cup of water.
2. Add 10–20 drops of a different food coloring to each cup. Stir to mix.
3. Cut the stems of the carnations at an angle using scissors. Remove any leaves that will be below the water line.
4. Place one carnation in each cup of colored water.
5. Line up the cups in a location with good light but not direct, hot sunlight.
6. Observe your carnations over the next several hours and days.
7. Record your observations.



OBSERVATIONS

Record your observations each day.

Day	What do you notice about the stem?	What do you notice about the petals?
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		