



## Disappearing Candy Canes

If you're not sure what to do with all of those extra candy canes you have lying around, use them for this fun experiment which explores factors affecting solubility.

### You will need:

2 Styrofoam cups  
2 Candy canes  
Hot water  
Cold water  
2 Ice cubes  
Marker  
Thermometer

### What to do:

1. Label one Styrofoam cup "WARM" and the other "COLD".
2. Fill the "WARM" cup three-quarters full with the warmest water available. For safety reasons, the temperature should be below 70°C.
3. Fill the "COLD" cup with the coldest water available and then add 2 ice cubes.
4. Measure the temperature in each cup.
5. Place a small candy cane in both cups. If you are using pieces of a larger candy cane, ensure the pieces are approximately the same size.
6. Observe the candy canes after 1 minute, 5 minutes, 10 minutes and 15 minutes.

### What is happening?

The candy cane is primarily made up of sugar. Sugar dissolves in water because water molecules have the ability to surround the sugar and separate individual sugar molecules from the rest of the solid. Students should observe that the candy canes will dissolve in both cups of water, but much more rapidly in the warm water. This is a result of the increased molecular motion in the hot water. The water molecules are moving faster, resulting in more energetic collisions with the candy cane, which increases the likelihood of the sugar molecules breaking away from the rest of the candy.

### Extensions:

1. Try this experiment using other types of candy. Does it hold true for all types of candy?
2. Try using different liquids, such as pop, oil, or vinegar. Does this have any effect on the rate of dissolution or the amount that dissolves?
3. Have students time the rate of dissolution for the hot and the cold water and compare their data.