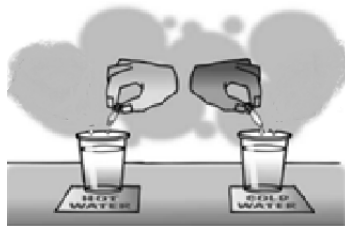


# Atoms and Molecules in Motion Lab

## Question to Investigate:

Is the speed of water molecules different in hot and cold water?



## Procedure:

### Hot Temperature Water

1. Fill a plastic cup about thirds of the way full of hot water.
2. Get your phone ready to act as a timer.
3. Hold the green food coloring bottle over the cup.
4. Carefully squeeze three drop of food coloring into the hot water.
5. Start the timer on your phone.
6. Observe what happens with the food coloring and time how long it takes for the green food coloring to fully dissolve in the water.
7. Record the time: \_\_\_\_\_ seconds
8. Pour the water down the sink and rinse out the cup.

### Cold Water

1. Fill the second plastic cup about two thirds of the way full with cold water
2. Get your phone ready to act as a timer.
3. Hold the green food coloring bottle over the cup.
4. Carefully squeeze three drop of food coloring into the cold water.
5. Start the timer on your phone.
6. Observe what happens with the food coloring and time how long it takes for the green food coloring to fully dissolve in the water.
7. Record the time: \_\_\_\_\_ seconds
8. Pour the water down the sink and rinse out the cup.

## Analyze your Observations:

1. Describe how the green food coloring looked as it moved around and dissolved in the hot water:
  
2. Describe how the green food coloring looked as it moved around and dissolved in the cold water:
  
3. What does the speed of the moving food coloring tell you about the speed of the molecules in hot and cold water?