

# Rate of Dissolving

Reminder – Goggles must be worn at all times in the lab!

## PRE-LAB DISCUSSION:

Any substance that can **dissolve** in another is said to be **soluble**. When one substance dissolves in another a **solution** is formed. A **solution** is a homogenous mixture of a **solute** and **solvent**. A **solute** is the substance that is dissolved. The **solvent** is the substance that does the dissolving. Therefore, **a solute dissolves in a solvent to create a solution**.

## PART I: Observe the Phenomenon

Materials- beaker, sugar cube, stopwatch

1. Fill a beaker with 200 mL of room temperature water.
2. Prepare your stopwatch.
3. Carefully submerge a sugar cube in the water and start the timer.
4. Gently swirl the beaker in a circular motion.
5. Watch closely as the sugar cube begins to dissolve in the water.
6. Don't stop the timer yet.
7. What are you thinking right about now?

## The Question:

*How could we speed up the dissolving process?*

8. Begin discussing PART II of this experiment with your teammates, but have someone continue to observe this original sugar cube and record the time it took to completely dissolve
  - a. *(you will want to include this number in your Lab Report).*

## PART II: Make a Claim and Design your Experiment

1. You and your team are to discuss the many ways you could answer the question.
2. Choose *at least two* of those claims to test.
3. Write a detailed, step by step, procedure describing the experiment that you and your team will run to test your claims.
  - a. Each experiment should include **two trials** to ensure the validity of your results.
  - b. Make sure your experiment is "**controlled.**"
    - i. Only test one claim at a time.
    - ii. Use your dissolving time from PART I as the control, or baseline, value to compare your data to.
  - c. Get approval from your instructor before conducting your experiments.

## PART III: Experiment

1. Run your experiments.
2. Analyze the data.
3. Complete a Lab Report.