

Name: \_\_\_\_\_

## Tasty Solutions



Piece of Candy	Time to Dissolve (min:sec)	What Factor Made It Dissolve?
1 – let it sit		
2 – move it around		
3 – move & chew		

1. What was the solute? \_\_\_\_\_ Solvent? \_\_\_\_\_
2. Based on your results what 3 things speed up the time it takes a substance to dissolve?
  1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
3. Based on your results, why do you think we chew our food?
4. Circle the **solutes** and underline the **solvents** in the following solutions.
  - a. Ocean water – salt & water
  - b. Kool-Aid – powder, sugar, water
  - c. Antifreeze – water & ethylene glycol
  - d. Pop – syrup, water, CO<sub>2</sub>
  - e. Gold jewelry – gold, silver, copper
  - f. Sterling silver – copper, silver
5. Which would have the most solute?
  - a. A glass of very strong Kool-Aid
  - b. a glass of very weak Kool-Aid

Why? \_\_\_\_\_

## Solubility of Solids in Water Lab

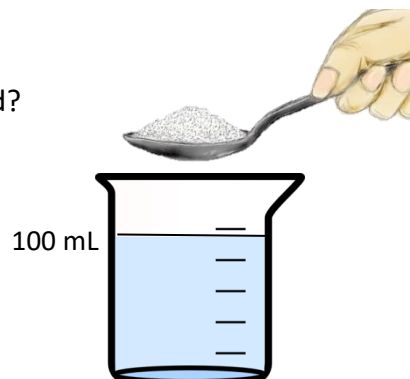
### Background Information:

A solvent can dissolve only a certain amount of solute. When there is no more room in the solvent for the solute, then dissolving stops. For example, when no more sugar can be added to the water, any more sugar that is added will begin to collect at the bottom of the glass. When this happens, a solution is considered to be saturated. Solubility is the amount of solute a solvent can hold.

**Purpose:** How much salt and sugar can water hold before becoming saturated?

### Procedure:

1. Fill a beaker with **100 mL water**.
2. Add one full  $\frac{1}{4}$  **teaspoon of salt** to the beaker.



3. **Stir** the contents of the beaker until **no salt is visible**.
4. **Repeat** steps 2-4 until **no more salt will dissolve** in the water.
5. Record the **number of scoopfuls** of salt that your water held in your data table.
6. Rinse out the beaker and **repeat** steps 1 – 5 **two more times**.
7. Repeat entire procedure using **sugar** instead of salt



**Observations:**

Solute	# of scoopfuls of solute			
	Trial 1	Trial 2	Trial 3	Average
Salt				
Sugar				

**Questions:**

1. What was the solvent used in this lab? \_\_\_\_\_
2. What was the average amount of **salt** the water could dissolve? \_\_\_\_\_
3. What was the average amount of **sugar** the water could dissolve? \_\_\_\_\_
4. Do salt and sugar have the same solubility in water (does the same amount of each substance dissolve)? \_\_\_\_\_  
Use data (numbers) from your lab to explain.

**Supersaturated Solutions – Rock Candy Lab**

1. When was the candy solution unsaturated? \_\_\_\_\_ How do you know?

2. What is a saturated solution?

3. What is a supersaturated solution?

3. What was the solute in the lab? \_\_\_\_\_ solvent? \_\_\_\_\_

4. Other than increasing the temperature of the water, describe another way you could get sugar to dissolve in water faster.

