

SOLUTIONS

Investigate: Keeping It Short and Sweet

Problem:

Bill Miller BBQ has recently begun using new sugar cubes (sweeter but lower in calories) to sweeten their iced tea, but have been having issues getting the cubes to dissolve. What would be the best method of increasing the speed at which they could dissolve sugar cubes into their iced tea?

REVIEW:

Solutions are mixtures containing a solute (substance being dissolved) and a solvent (material that dissolves another substance). Solutes and solvents can be solids, liquids, or gases. One of the most common types of solutions involves a solid dissolved in a liquid.

There are several factors that affect the rate of dissolution, or how quickly a solute dissolves. In this experiment, you will choose one (and only one!) to speed up the rate of dissolution of sugar. Be careful to keep all other factors constant except for the independent variable you are testing. Remember, repeated trials are a good idea for reliability!

EXPERIMENTAL DESIGN:

MATERIALS:

SAFETY PRECAUTIONS:

PROCEDURE:**DATA / OBSERVATIONS:**

*Please also prepare a properly labeled, data table or graph to share with the class on your dry erase graph sheet.

CONCLUSIONS:

1. Based on your data, was your hypothesis correct or incorrect? Explain.

2. Based on the class data and observations, what methods were effective in increasing the rate of dissolution of the solute? Explain.

3. Using the Kinetic Molecular Theory of Matter, explain why each of the following affects rate of dissolution:
 - a. Stirring

 - b. Heating

 - c. Decreasing particle size