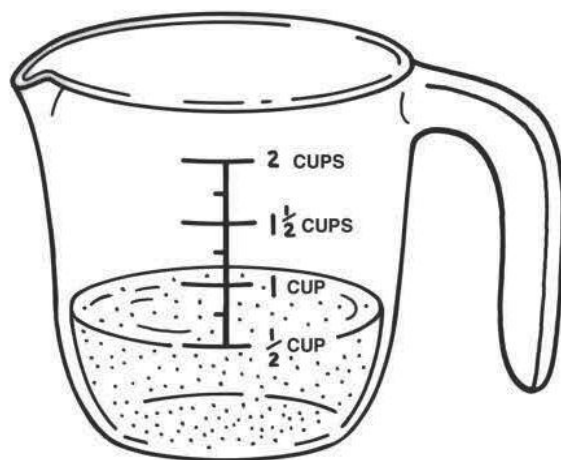


Sweet Solution

A solution is a mixture of one substance dissolved in another. Solutions have two parts. The solute is the substance that dissolves. The solvent is what the solute dissolves in. Different mixtures have different solubilities. Solubility is the amount of solute that can dissolve in a solvent. For many substances solubility increases when the temperature of the solution increases. A saturated solution contains the most solute that it can dissolve.

Materials

- glass measuring cup
- tap water
- sugar
- 2 spoons
- microwave oven (or stove top and saucepan)



What to Do

1. Measure half a cup of tap water in a glass measuring cup. Gradually add sugar to the cup, one level spoonful at a time. Be sure to keep track of how many spoonfuls you add. While adding the sugar, stir the mixture with a second spoon until the solution becomes clear. Stop adding sugar when no more will dissolve. What happened? How many spoonfuls of sugar did you add before the sugar began to settle to the bottom of the measuring cup?

2. Now heat the sugar solution in a microwave oven. If a microwave oven is unavailable, heat the sugar solution in a saucepan on a stove top. After the solution is heated, try stirring more sugar into it. How many more level spoonfuls of sugar can you add before the sugar begins to settle to the bottom of the measuring cup or the saucepan?

▲ Be Careful. An adult family member should closely supervise this step. If a saucepan and stove top are used to heat the sugar solution, remove the saucepan from the stove top before stirring in additional teaspoons of sugar. Set the hot saucepan on a towel so that it does not move.

What did you learn?

1. Were you able to add more sugar after the water was heated? If so, why? Explain your answer.

2. What would happen if you refrigerated the water for several hours before adding the sugar? Would the results be different? Why or why not?
