Sugar Cubes Dissolving

Will more sugar cubes dissolve, or disappear, in cold water than in hot or warm tap water?

**What to do:** Put a cube of sugar in the cold water and stir until its crystals disappear, or dissolve, completely. Continue to put cubes of sugar into the water one at a time—count them—until no more sugar will dissolve. You'll know when this happens, because the crystal grains of sugar will begin to show in the solution and will start to gather on the bottom of the glass.

Now, repeat this activity using hot water. Make certain you count the number of cubes that dissolve in each glass of water. Record, or write, the number for each. Which can hold the most dissolved sugar cubes?

**What happens:** Fewer cubes should dissolve thoroughly in the cold tap water than in the hot.

**Why:** The first sugar cubes dissolve in each glass of water until no more sugar crystals can be seen. Then, as more cubes are added, the solutions reach a point where the crystals can no longer disappear and they can easily be seen. Scientists and chemists call this a saturated solution. More sugar dissolves in the hot water than in the cold because, when water is heated, its molecules move faster and farther apart. As a result, the spaces between the water molecules become larger, allowing room for more sugar molecules.

**YOU NEED**
- sugar cubes
- clear glass of cold tap water
- clear glass of a very hot tap water
- spoon
- paper and pencil