

Dissolving Sugar at Different Heats



Introduction

Learn about solutions as you add more and more sugar cubes to different temperature water. This easy experiment shows that you can only dissolve a certain amount and that this changes as the water gets hotter.

Put a sugar cube into the cold water and stir with the spoon until the sugar disappears. Repeat this process (remembering to count the amount of sugar cubes you put into the water) until the sugar stops dissolving, you are at this point when sugar starts to gather on the bottom of the glass rather than dissolving.

What you'll need:

- Sugar cubes
- Cold water in a clear glass
- Hot water in a clear glass (be careful with the hot water)
- Spoon for stirring

Instructions:

- Make sure the glasses have an equal amount of water.
- Put a sugar cube into the cold water and stir with the spoon until the sugar disappears. Repeat this process (remembering to count the amount of sugar cubes you put into the water) until the sugar stops dissolving, you are at this point when sugar starts to gather on the bottom of the glass rather than dissolving.
- Write down how many sugar cubes you could dissolve in the cold water.
- Repeat the same process for the hot water, compare the number of sugar cubes dissolved in each liquid, which dissolved more?

What's Happening

The cold water isn't able to dissolve as much sugar as the hot water, but why? Another name for the liquids inside the cups is a 'solution', when this solution can no longer dissolve sugar it becomes a 'saturated solution', this means that sugar starts forming on the bottom of the cup.

The reason the hot water dissolves more is because it has faster moving molecules which are spread further apart than the molecules in the cold water. With bigger gaps between the molecules in the hot water, more sugar molecules can fit in between.

Reflection Questions

Is something confusing me?

Could I explain this to someone else?

How could I do this as a proper experiment and get better results to look at?