



High School Science Virtual Learning

College Chemistry

At Home Labs

May 22nd, 2020



High School College Chemistry

Lesson: May 22nd, 2020

Objective/Learning Target:

The Learner will have the opportunity to reinforce concepts learned in previous lessons with simple labs they can perform themselves with things commonly found at home.



Bellringer

1. What are the components of a solution?
2. How do we measure concentration of a solution both Qualitative and Quantitative?



Bellringer Answers

1. Solvent, the liquid part that does the dissolving, and solute, the solid that gets dissolved.
2. Qualitative Dilute, low amount of solute
Concentrated, High amount of solute
Saturated, maximum amount of solute at a given temperature
Supersaturated, Contains more solute than it should for given conditions
Quantitative Molarity which is Moles solute/Liters of solution



In General the greater the temperature of a solution, the more solute that can be dissolved.

To make a Supersaturated solution you take a solvent and dissolve all of the solute it can hold at room temperature. Second, you heat the solution to near the boiling point, add more solute and stir to dissolve. When you let it cool the solute will stay in solution until a nucleation site forms where the crystal will start to grow.



Lab

Equipment and Ingredients: IMPORTANT PARENT'S PERMISSION

Sugar

Water

Measuring Cups and Spoons

Food Colouring (Optional)

Liquid flavoring extract (optional)

Pot

Stove Top



Lab

In this lab you will make an Edible Treat ROCK CANDY
At the point in the video after you make the solution and are pouring it into a glass **MAKE SURE THE GLASS IS HEAT RESISTANT!** If not it will SHATTER! A Pyrex measuring cup would be ideal. A mason jar might work as well.

Watch this video and follow along:

[Rock Candy Recipe - Crystallization of Sugar - The Sci Guys\(6:37\)](#) If you don't have the wood skewers you can use cotton string and tie it around a pencil, be sure to wet it and drag it through sugar first.



Lab

Here is another demonstration of Crystallization from Supersaturated solutions that takes place much faster. Be sure to watch the video:

[Crystallization from a Supersaturated Solution-Rutgers University](#)

And here is a video on how this process is used to make Reusable Instant Heat packs. [Click Heat Science- Alastair Kierulf\(4:13\)](#)