Extra Credit Project--8th Science

In class we have been studying solutions: how to make them, how to identify them, and how concentration can affect them. Your mission, should you choose to accept it, is to use your knowledge of super-saturated solutions to grow a **ROCK CANDY CRYSTAL**! I have outlined the materials and instructions below, but feel free to look online for other suggestions.

**THIS EXTRA CREDIT PROJECT IS WORTH 25 EXTRA POINTS**

(What does this mean? I will probably find your \*lowest\* test grade from this 9 weeks and add 25 points to it. Made a 75 on the last test? Now you made a 100! Failed one of the first tests because you were playing a sport and had no time to study? Now you passed it!)

**The MUSTS:**

**1. You MUST answer the questions on this sheet in order to receive credit.**

**2. You MUST grow your OWN crystal and turn it in before the deadline. (You will get it back after May 16th, but this ensures that someone else will not try to pass your crystal off as their own.)**

**THE DEADLINE FOR THIS PROJECT IS MAY 16th!!!!!
No late submissions will be accepted!**

It can take up to a week for the crystals to start growing. Don’t wait until May 15th to start! Only sticks with crystal growth will count! You may turn your project in early if you would like, but I will also be awarding a prize for the LARGEST CRYSTAL!

GOOD LUCK!

**QUESTIONS—Use your notebook to help you if needed!**

**1. During what step of the procedure is the sugar solution considered “unsaturated”? WHY?
2. What is the difference between a saturated and a supersaturated solution?
3. What were the solute and solvent in your solution?
4. Besides increasing the temperature of the water, what else could you do to get the solid sugar to dissolve *faster*?
5. Describe the shape of the crystals you made. You may draw a picture to accompany your description.
6. What is the purpose of the seed crystals?**

**How to Make Your Own Rock Candy**

These instructions are from <http://www.sciencebob.com/experiments/rockcandy.php>

**MATERIALS**

**A wooden skewer** (you can also use a clean wooden chopstick)
**A clothespin
1 cup of water
2-3 cups of sugar
A tall narrow glass or jar** (if you can’t find something tall and
skinny, just double the solution recipe so you have enough
solution to cover your stick!)



**PROCEDURE**

1. Clip the wooden skewer into the clothespin so that it hangs down inside
the glass and is about 1 inch from the bottom of the glass.

2. Remove the skewer and clothespin and put them aside.

3. Get an adult to help you bring the water to a boil.

4. Pour about ¼ cup of sugar into the boiling water, and stir it until it dissolves.

5. Keep adding more and more sugar, each time stirring until it dissolves until no more will dissolve. This will take lots of time and patience because it will take longer and longer for the sugar to dissolve each time. Don’t give up too soon! You want the solution to be as saturated as possible!

6. Once no more sugar will dissolve, remove the solution from the heat and allow it to cool for at least 20 minutes. Note: While it is cooling, dip the lower portion of the skewer into the sugar solution and roll it in some sugar to help jump start the crystal growth. You MUST let this dry completely before putting it in the solution or all of your seed crystals will fall off of the stick!

7. Once cooled, carefully pour the solution into your glass or jar almost to the top. Then submerge the skewer with your seed crystals. Make sure your skewer is in the middle of the glass and not touching the sides!

8. Put the jar in a location where it will not be disturbed and wait! Sometimes it can take up to a week for the crystals to start to appear! (IF you don’t see growth after a few days, try re-boiling your solution and adding MORE sugar! Recoat the skewer with seed crystals and try again!)

Note: Want colored rock candy? Add food coloring to your sugar solution, but make sure that you add a lot! You need the color to be pretty dark for the best results!

**How do I turn in my extra credit project?**

**Put your rock candy in a Ziploc bag with your first and last name on it. Answer the questions on a sheet of paper. Fold your answers and put them in the bag as well. Turn it in**!

\*\*STARTING EARLY WILL GIVE YOUR ROCK CANDY CRYSTAL MORE TIME TO GROW!\*\*