

ROCK CANDY LAB

Materials:

1 cups water
2 cups granulated sugar
glass jar
plastic wrap or paper towel

food coloring (optional)
1/2-1 tsp flavoring extract or oil (optional)
wooden skewer and clothespins -OR-
cotton thread , pencil, tape and paper clip

Procedures:

1. Prepare your materials: wash a glass jar thoroughly with hot water to clean it. Cut a length of thick cotton thread a few inches longer than the height of the jar, and tape it to a pencil. Place the pencil across the lip of the jar, and wind it until the thread is hanging about 1 inch from the bottom of the jar. Attach a paper clip to the bottom of the thread to weight it and ensure it hangs straight down. Alternately, you can use a wooden skewer as the base of your rock candy, and use clothespins balanced across the top of the jar to clip it into place.



2. Wet your thread or wooden skewer, and roll it in granulated sugar. This base layer will give the sugar crystals something to "grab" when they start forming. Set the thread or skewer aside to dry while you prepare your sugar syrup.



3. Place the water in a medium-sized pan and bring it to a boil. Begin adding the sugar, one cup at a time, stirring after each addition. You will notice that it takes longer for the sugar to dissolve after each addition. Continue to stir and boil the syrup until all of the sugar has been added and it is all dissolved. Remove the pan from the heat.



4. If you are using colors or flavorings, add them at this point. If you are using an extract, add 1/2 tsp of extract, Add 1-2 drops of food coloring and stir to ensure even, smooth color.



5. Allow the sugar syrup to cool for approximately 5 minutes, then pour it into the prepared jar. Lower the sugared string or skewer until it hangs about 1 inch from the bottom.



6. Carefully place your jar in a cool place, away from harsh lights, where it can sit undisturbed. Cover the top loosely with plastic wrap or paper towel.

7. You should start to see sugar crystals forming within 2-3 hours. If you have seen no change to your skewer or thread after 24 hours, try boiling the sugar syrup again and dissolve another 1/2 cup of sugar into it, then pour it back into the jar and insert the string or skewer again.

8. Allow the rock candy to grow until it is the size you want. Don't let it grow too large, otherwise it might start growing into the sides of your jar! Once it has reached the size you want, remove it and allow it to dry for a few minutes, then enjoy or wrap in plastic wrap to save it for later.



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Complete these questions and bring it to class along with samples of your rock candy to receive up to 10 extra credit points.

Questions:

1. When was the rocky candy solution unsaturated? Explain.
2. What is the difference between a saturated and a supersaturated solution?
3. What was the solute in the lab? The solvent?
4. Why is it necessary to heat a solvent in order to make a supersaturated solution?
5. At what point in this lab did your solution become supersaturated? [*multiple choice*]
 - a. at the beginning of step 2
 - b. at the end of step 3
 - c. a the end of step 4
6. Besides increasing the temperature of the water, describe another way you could get sugar to dissolve in water *faster*.