

# SUMMER SCIENCE AND ROCK CANDY

## HOW TO MAKE ROCK CANDY

### Color and Flavored Rock Candy to Eat

Making your own rock candy is a fun and tasty way to grow crystals and see the structure of sugar on big scale. Sugar crystals in granulated sugar display a monoclinic form, but you can see the shape much better in homegrown large crystals. This recipe is for rock candy that you can eat. You can color and flavor the candy too.

## **Materials:**

Basically all you need to make rock candy is sugar and hot water.

The color of your crystals will depend on the type of sugar you use (raw sugar is more golden and refined granulated sugar) and whether or not you add coloring. Any food-grade colorant will work.

- 3 cups sugar (sucrose)
- 1 cup water
- Clean glass jar
- Cotton string
- Pencil or knife
- Food coloring (optional)
- ½ tsp to 1 tsp flavoring oil or extract (optional)
- Lifesaver candy (optional)
- Pan
- Stove or microwave

## Make Rock Candy

### Procedure:

1. Pour the sugar and water into the pan.
2. Heat the mixture to a boil, stirring constantly. You want the sugar solution to hit boiling, but not get hotter or cook too long. If you overheat the sugar solution you'll make hard candy, which is nice, but not what we're going for here.
3. Stir the solution until all the sugar has dissolved. The liquid will be clear or straw-colored, without any sparkly sugar. If you can get even more sugar to dissolve, that's good, too.
4. If desired, you can add food coloring and flavoring to the solution. Min, cinnamon, or lemon extract are good flavorings to try. Squeezing the juice from a lemon, orange, or lime is a way to give the crystals natural flavor, but the acid and other sugars in the juice may slow your crystal formation.
5. Set the pot of sugar syrup in the refrigerator to cool. You want the liquid to be about 50 degrees Fahrenheit (slightly cooler than room temperature). Sugar becomes less soluble as it cools, so chilling the mixture will make it so there is less chance to accidentally dissolving sugar you are about to coat on your string.
6. While the sugar solution is cooling, prepare your string. You are using cotton string. Because, it is a rough and non-toxic string. Tie the string to a pencil or kitchen knife, or other object that can rest across the top of the jar. You want the string to hang into the jar. You do not want it to touch the sides of the jar nor the bottom.

7. You don't want to weight your string with anything toxic, so rather than use a metal object, you can tie a Lifesaver to the bottom of the string.
8. Whether you are using the Lifesaver or not, you want to 'seed' the string with crystals so that the rock candy will form on the string rather than on the sides and bottom of the jar. There are two easy ways to do this. One is to dampen the string with a little of the syrup you just made and dip the string in sugar. Another option is to soak the string in the syrup and then hang it to dry, which will cause crystals to form naturally (this method produces 'chunkier' rock candy crystals).
9. Once your solution has cooled, pour it into the clean jar. Suspend the seeded string in the liquid. Set the jar somewhere quiet. You can cover the jar with a paper towel or coffee filter to keep the solution clean.
10. Check on your crystals, but don't disturb them. You can remove them to dry and eat when you are satisfied with the size of your rock candy. Ideally you want to allow the crystals to grow for 3-7 days.
11. You can help your crystals grow by removing (and eating) any sugar 'crust' that forms on top or the liquid. If you notice a lot of crystals forming on the sides and bottom of the container and not on the string, remove your string and set it aside. Pour the crystallized solution into a sauce pan and boil/cool it (just like when you make the solution). Add it to a clean jar and suspend your growing rock candy crystals.