Deliciously Edible Crystals

Directions: Follow these instructions to create your very own Deliciously Edible Crystal Creations and learn along the way. Answer all questions on a separate sheet of paper, please. You will need an adult to make this with.

First You Need to do a Little Bit of Background Research on Crystals Themselves.

1. What are crystals?
2. What can crystals found in nature be made of?
3. Where can crystals be found in the natural world?

Now for the Recipe (and a Couple of Additional Questions Along the Way)

YOU WILL NEED:

- 2 Cups of water
- 4 cups granulated table sugar
- A glass jar (Such as a mason jar)
- A pencil or butter knife or straw
- String
- Large pan or bowl for boiling water and making the solution
- Coffee filter, paper towel, or piece of toilet paper
- A spoon for stirring
- 1 paperclip
- ½ to 1 teaspoon flavoring extract or oil (Optional)
- 2 drops food coloring (Optional)

How to Make Your Edible Crystals

BEFORE YOU BEGIN: You don't want dirty edible crystals! Please wash your jar well with hot water and some soap.

1. Cut your sting the length about seven cm longer than the height of the jar and tape it to the pencil securely. Place the pencil across the lip of the jar and wind it until the thread is hanging 1 inch from the bottom. Attach a paper clip to the bottom of the thread in order to weigh it down and help it stand straight.
2. Wet the string and pencil with water and roll in table sugar so that your crystal has something to hold onto when it starts to form.
3. Have an adult boil the water carefully.

4. Stir in the table sugar, one teaspoon at a time. Add the table sugar until it no longer dissolves (break down in) and starts to pile at the bottom of the pan. Too little table sugar = little to no crystal growth. You do not want all this work done for nothing!

Quick Learning Break - Google or any search engine are excellent resources to look to answer the following questions.

A: What elements are in table sugar?
B: What is the chemical formula of table sugar?
C: Look at the chemical formula of table sugar. How many atoms of each element are in table sugar?

To add some excitement and flavor you can now add either/or 1 teaspoon of extract/oil and 2 to 3 drops of food coloring. Stir so the food coloring and flavor evenly spreads throughout your pan.

5. Please **let the sugar mixture cool for about 10 minutes because it is HOT!** Once it has cooled down, pour it into your glass jar.
6. Place the pencil over the jar and allow the string to hang into the liquid.
7. Put the jar in a calm place and you can place something light such as a coffee filter, paper towel, or piece of toilet paper to prevent dust from gathering.
8. Allow the crystal to grow over a period of 5-7 days until it reaches the length you would like it to.
9. Eat and enjoy!

Record your data

1. Measure, in cm, to the best of your ability, the length of your edible crystal after 2 hours and then 4 hours on the first day. Afterwards, measure once a day until you end, and eat, your experiment. **Measure with a ruler or tape measure on the OUTSIDE of the glass jar. DO NOT PUT THE RULER INSIDE THE JAR/SOLUTION.** Record your data on a separate sheet of paper.
2. Describe the formation of your crystal. In other words, what does it look like? Do your best to sketch a drawing of it each day so you can track its changes.
    a. Do crystals always form in this way? Will they always look the same? Think of where else in nature you may see crystal like forms. I'll give you a hint. You see a lot of it in winter.
3. Once you have taken the string with the crystal out of the solution, measure in cm one final time and record your data on a separate sheet of paper.