**Rock Candy**

A 2-week session activity.

**OBJECTIVE:**

Learn about different types of crystals, including salt, sugar, and borax, and make own edible sugar crystals.

**TERMS TO GO OVER:**

Crystal

Dissolve

Saturation

**PRE-LAB DEMONSTRATION MATERIALS:**

* Toothpicks
* Styrofoam balls (2 difference sizes)

**PRE-LAB DEMONSTRATION PROCEDURE:**

1. Attach one size of Styrofoam to another with a toothpick so that none of the same size are connected to each other.
2. Form a cube

**WHAT IS HAPPENING?**

Explain how salt crystals form: sodium gives an electron, chlorine wants an electron, so sodium connects to a chlorine connects to a sodium etc etc. Same thing occurs with sugar crystals. Explain granulated sugar is crushed sugar crystals and in order to get the sugar crystals, dissolve into hot water because hot water hold more sugar than cold water. When the hot water is saturated, it can hold no more sugar. As the hot water cools down, it cannot hold as much water, so the sugar molecules try to find a way to get out, and the string is a good place to escape to. Once the sugar crystals form, it will attract other sugar crystals that need to come out of the solution.

**LAB MATERIALS:**

* Water
* White sugar
* Food coloring
* Stirring utensil
* Pot
* Hot plate
* Sterile test tubes
* Sterile corks
* Thin string
* Thumbtacks
* Small washers or paperclips that are cut in half
* Test tube holder
* Permanent marker

**GROUP LEADER/VOLUNTEER/TLC ROLE**

Assist students with colors to prevent the solution from becoming too opaque, adjusting the string length if they are having difficulties with that, and pushing the tack all the way into the cork once the string is wrapped around it if child cannot push it in themselves.

**SETUP PROCEDURE**

1. Heat the water until boiling
2. Add enough sugar to make a 2:1 sugar:water solution
3. Stir the sugar until dissolved
4. Cut the paperclips in half, if not using washers
5. Tie the washer/paperclip to one end of the string
6. place into the test tube so the weight is as far down as possible without touching the bottom
7. Cut the string with about 2cm extra (to wrap around tack)
8. Partially insert tack into cork off-centered (so then string hangs directly in the middle of the test tube)
9. Lay out test tubes and corks at tables

**LAB PROCEDURE**

1. Have the student adjust the string around the tack so then it hangs in the test tube without touching the sides and the weight does not touch the bottom
2. Push the tack all the way in to secure the string
3. Have a teacher write the student’s initials onto the top of the cork
4. Have a teacher help with food coloring – making sure that the color is not too dark
5. \*CAUTION\* Hand it to the teacher so they can pour the hot sugar water solution into the test tube, leaving enough air at top to place the cork in tightly without touching the solution
6. \*CAUTION\* Have the teacher mix the solution and food coloring by swirling as the test tube will be too hot for the student to handle
7. Place onto test tube holder
8. Wait at least 7 days before removing the cork and attached string.