Grow Crystals Lab

Research: Write 3 sentences explaining what you know about crystals.

1.

2.

3.

Problem: Can a student grow their own crystals using common household items? This lab can work with table salt, Epsom salts, borax or sugar.

Hypothesis: (if then)

If I create a saturated solution of salt and water then I can grow crystals.

Materials:

Salt (or sugar), water, Styrofoam cup or jar, string, pipe cleaner, hot plate or Bunsen burner, protective gloves, goggles, food coloring, craft stick

Procedures:

1. Students take the pipe cleaner and bend it into a shape leaving part of the pipe cleaner at the end to be wrapped around craft stick
   1. Make sure the shape can be hung inside the cup without touching the sides
   2. If this is done before Christmas then maybe a decorative ornament shape can be made, this will work for any holiday and is a good way to incorporate social studies into science.
2. If this is being done with young students then teacher should do the next step and that is creating the saturated solution. Older students would benefit from performing all steps on their own.
3. Boil water in a beaker or pot. Once water is boiling slowly stir in salt until the water will accept no more. You can tell when your solution is saturate because small salt crystals will begin to settle at the bottom of the beaker and not dissolve.
4. Carefully pour in your solution into the cups being careful not to spill or burn.
5. Students can all a single drop of food coloring and stir gently with the craft stick
6. Take the shaped pipe cleaner and wrap your lose end around the craft stick
7. Submerge your shape in the cup of saturated solution and place the craft stick across the top of your cup so that the shape hangs nicely in place without touching the sides.
8. Place cups in a location where they will not be disturbed and can be observed for the next week.

Data: draw your observations and record what you see happening for the next week. Be careful not to disturb your cup as the crystals can be knocked off. If crystals stop growing you can add salt to the solution continue growth.

Data Chart:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Date | Date | Date | Date |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Picture | Picture | Picture | Picture | Picture |
| Observation | Observation | Observation | Observation | Observation |

Conclusion- circle the parts to complete your conclusion statement: My Hypothesis was (Correct/ incorrect), I (could/could) not create crystals from common household products.

Follow up questions:

1. What part of the experiment represented a saturated solution?
   1. (Answer)
2. Did the salt water represent an element, compound or mixture and why?
   1. (Answer)
3. Why did we boil the water when creating our solution?
   1. (Answer)
4. Is salt a compound, element or mixture?
   1. (Answer)
5. Water is made of H2O, is this molecule? And why?
   1. (Answer)
6. If we left the cups out until all the water had evaporated what would be left?

Bonus: If you would like try this experiment at home using a different substance (like sugar) and report your results to your teacher.