Growing Crystals

Safety Awareness: \*Glass- If there is broken glass Do NOT touch it. Notify the teacher and she will clean with broom and dust pan.

\*Pipette- Do NOT squirt it. The food coloring could stain your clothes. The Salt/Sugar solutions could burn your eyes. Eyes would need to be flushed with water.

\*No Horseplay

Question: Which solution makes larger crystals?

Hypothesis: If salt & sugar crystals are grown then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ crystals will grow larger.

Materials: Saturated salt solution, saturated sugar solution, food coloring, plastic containers, pipette, beakers, and materials to grow crystals on (cotton balls, wood shavings, sponges, porous rocks, etc.)

Procedures:

STEP 1- Gather materials and prepare container

STEP 2- Distribute materials in the container. Make sure the salt side and the sugar side has the same type of materials for the crystals to grow on

STEP 3- Carefully use the pipette to squirt the solutions on to the materials. Make sure the salt solution is on the salt side and the sugar solution on the sugar side.

STEP 4- Place your container in an area that will not be disturbed. Monitor and record the changes in your data table.

Variables:

Controlled Variables: temperature, solutions, lighting, different amount of air circulation, materials that the crystals grew on

Manipulated Variable: type of solution (salt vs. sugar)

Responding Variable: amount of growth in the crystals

Possible Error: amount of salt solution used should have equaled the amount of sugar solution used

Data:

|  |  |  |
| --- | --- | --- |
| Date/Day | Sugar Growth Observation | Salt Growth Observation |
| Nov. 18 Day 1 | Prepared Experiment | Prepared Experiment |
| Nov. 20/ Day 3 |  |  |
| Nov. 25/ Day 7 |  |  |
|  |  |  |

Data Analysis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conclusion:

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Teacher Note:

* Pre make sugar/salt solutions. Use food coloring to distinguish them.
* Question students about the possible safety problems with this lab and lead them to the necessary safety awareness.
* Have lab partners collaborate on writing the procedures. Let them begin lab when they have a good set of procedures.
* Students should describe what they see as their crystals grow in their data sheet.
* Results are the facts without the why. It is hard sometimes for them to understand this.
* Students can collaborate on their results, but each conclusion will depend on what that student chose for his/her hypothesis. Did the results proved their hypothesis? Remind them to explain what might have caused the results they saw, did something interfere with the project, could something have been done differently…