

Experimental Design

2002 Wisconsin State Science Olympiad Div B

Using the following materials, conduct an experiment to test some aspect of this newly-discovered alien crystalline-cubic material. You should approach the design aspect of your experiment as though you are a researcher studying this alien crystalline material. Your experiment may look at Solubility, Diffusion, or any other property of the cube. At some point in your write-up you should include the suspected purpose of this material. You need not use all of your materials. Good luck.

Your materials:

(6) Cubes of Crystalline Substance	(5) Plastic Cups	(6) Popsicle Sticks
(1) Cup of Water	(5) Paper Towels	(2) Plastic Droppers
(5) Toothpicks	(3) Small Vials	(1) Plastic Straw
(1) Plastic Spoon	Food Coloring	

You may also use as much lined and graph paper as you need to write your report (but only to write the report).

Your write-up must include all of the following parts (Rubric points are given in parentheses):

1. Problem (4)
2. Hypothesis (4)
3. Variables (10)
Dependent, Independent, Controlled
4. Standard of Comparison (3)
5. Materials and Procedure (8)
6. Qualitative: Results and Observations (4)
7. Quantitative: Results and Observations to include charts, graphs, etc. (12)
8. Analysis and Interpretation of Data including Error (4)
9. Possible Experimental Errors (3)
10. Conclusion (4)
11. Recommendation for Further Experimentation (4)

* Clean-up/Safety (Up to 4 points will be subtracted for EACH infraction, clean-up instructions are listed below.)

Clean-up:

1. Please discard any materials, which you have folded, torn, cut, taped, or in any other way modified. Leave all unused items on your table. Please leave your 2. Place your write-up, **each page labeled with your team number**, on your table with this page, unstapled on top.
3. Replace any discarded materials with materials from the distribution station. I will be checking each table for correct clean-up and you will be penalized for any infractions.

YOU MUST BE COMPLETELY FINISHED WITH YOUR WRITE-UP AND CLEAN-UP PROCEDURES 50 MINUTES AFTER THE START OF THE ROUND.