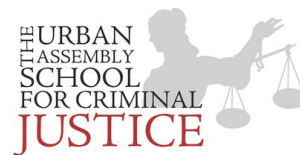


Name: _____ Date: _____

Chemistry ~ Ms. Hart

Class: Anions or Cations



Lab #19: Solutions Lab Part I

Question:

How does the type of substance affect the solubility of the substance?

Independent Variable: _____

Dependent Variable: _____

Constants: _____

Hypothesis:

Materials:

- Graduated Cylinder
- Sugar
- Salt
- Flour
- Cornstarch
- Clock
- Plastic Spoon
- 4 Plastic Cups
- Water

Procedure:

1. Pour 1 spoonful of sugar into the first cup, one spoonful of salt into the second, one spoonful of flour into the third, and one spoonful of cornstarch into the last.
2. Measure 40 mL of room temperature water into one of the plastic cups
3. Use the clock to measure how much time it takes for the substance to dissolve in the water. Repeat for all other substances.
4. Record your observations in the data table below.

Data:

	Sugar	Salt	Flour	Cornstarch
Time to Dissolve (seconds)				

Analysis:

Create a graph displaying your results.

Conclusion:

Rubric:

	4	3	2	1
Write a hypothesis	Written in the “if _____ then _____ because” format. Reason for prediction is clear and scientifically based (although scientific explanation may be incorrect)	Written in the “if _____ then _____ because” format but does not have a clear scientific explanation OR Provides a prediction supported by scientific reasoning but not written in the correct format	Provides a prediction for what will happen in the lab but not written in the correct format with an unscientific explanation OR Includes the “if then” but not a because	Provides a prediction however is not in the correct format and has no explanation to support prediction
Identify variables and controls	Correctly identifies the independent variable, dependent variable and at least 3-5 factors that will be held constant	Correctly identifies the independent variable, dependent variable and 1-2 factors that will be held constant	2 of the 3 are present: Correct independent variable, Correct dependent variable 1-2 factors that will be held constant	1 of the 3 are present: Correct independent variable, Correct dependent variable 1-2 factors that will be held constant
Records data appropriately	Data is measured as precisely as given equipment allows and appears to include accurate measurements.	Data is measured although not necessarily as precisely as equipment allows and appears to include accurate measurements.	Measurements may not be as precise as equipment allows but appear to be accurate	Measurements are present but may not appear to be accurate.
Organizes and displays data appropriately	Organizes all data into a clear and easy to read chart. Data is then displayed on a graph of the appropriate type that includes correctly scaled axes, labels for all axes with units and a descriptive title.	Organizes all data into a clear and easy to read chart. Data is then displayed on a graph that has 1 of the following incorrect or missing: appropriate type, correctly scaled axes, labels for all axes with units, title.	Data is organized but not in a single clear and easy to read chart. Graph is included but 2 of the following are incorrect: appropriate type, correctly scaled, labels for all axes with units and title.	Data is present but not organized. Graph is attempted but does not correctly display the data.
Draw conclusions based on supporting scientific evidence	<ul style="list-style-type: none"> - Repeats the initial hypothesis and evaluates it - Interprets graphs and data tables - Makes predictions based on data - Includes at least 2-3 potential sources of error/improvement - Includes an application 	Includes 4 of the 5 criteria for a full credit response.	Includes 2-3 of the 5 criteria for a full credit response.	Includes 1 of the 5 criteria for a full credit response.