What are some testable questions we can have about solubility?

1. State a testable question about solubility.
2. Make a hypothesis (If…then…).
3. How will you test your hypothesis?
4. What data will you record? Brainstorm the outline of a table and graph. (Separate)
5. What are the variables?
   1. Manipulated (independent) (x-axis)
   2. Responding (dependent) (y-axis)
   3. Controlled (constant)
6. What materials will you need?
7. State your procedure (Indicate safety procedures specific to this lab).
8. Analyze your experiment and provide data.
9. What conclusions can you draw about your problem? What further questions could you ask?
10. Why is solubility important? Where does it apply in daily life? What specific careers might rely on it? (opportunity for extension…)

Here is what is being collected in good copy form:

* Table and Graph (individually submitted)
  + Titles and labels
  + Legend if required
  + X and Y axis
  + Appropriate scale
  + Neatness and readability
* Self-Evaluation
* Peer-Evaluation (your group members will mark you too!)
* Lab Write-up (can be submitted as a group), including:

1. State a testable question about solubility.
2. Make a hypothesis (If…then…).
3. What are the variables?
   1. Manipulated (independent) (x-axis)
   2. Responding (dependent) (y-axis)
   3. Controlled (constant)
4. What materials will you need? ***(list form)***
5. State your procedure (Indicate safety procedures specific to this lab). ***(number form)***
6. Analyze your experiment and provide data:
   1. Table and Graph (individually, not as a group)
   2. What was unexpected (this is ok!)? What didn’t happen or work out the way you thought? Were there things you changed about your procedure? Please explain.
   3. List changes you would make (not the teacher) for next time if you were to have others do this lab.
7. What conclusions can you draw about your problem? What further questions could you ask?
8. **EXTENSION:** Why is solubility important? Where does it apply in daily life? What specific careers might rely on it?

Assessment:

|  |  |
| --- | --- |
| **Understands and makes connections between concepts:**   * Can accurately write a testable question, hypothesis, identify variables, materials, accurately record and document data, and come to a reasonable conclusion (all related to solubility). |  |
| **Analyzes and solves problems through scientific reasoning:**   * Can determine how to test, create appropriate procedures, identify unforeseen information or procedures, make changes as per feedback and discovery, overcome challenges in designing a lab. |  |
| **Develops skills for inquiry and communication:**   * Can use accurate vocabulary, spelling, grammar and conventions in lab write up. * Can document work and data in an organized manner. * Can document work in required format. * Can determine a problem, procedure and document data. * Can adhere to lab and safety procedures. * Can work effectively with a group to overcome challenges. |  |
| **Explores scientific events and issues in society and the environment:**   * Can come up, or even further research why solubility is important. * Can identify and follow-up on safety procedures and lab expectations. |  |