

Identifying the Experimental Characteristics of a Lab

1. State the hypothesis. Identify it as the hypothesis. You may use “If/Then” statements.
2. Identify the independent variable (the variable being manipulated).
3. Identify the dependent variable (the one that will change; the experimental group)
4. Identify the control group that will be used for comparison (It does not contain the variable being tested.)
5. Identify any other variables that are being held constant in the experimental group. For instance, each setup may be measured for the same amount of time; or each setup may be exposed to the same amount of light.
6. Identify what is being measured.
Example: CO₂ or H₂O consumption; growth, etc.)
7. What method and/or time frame is used?
Example: I will take readings ofevery 5 minutes for 30 minutes.
8. What is the rate of calculation?
Example: average number of trials, slope of the curve, etc.

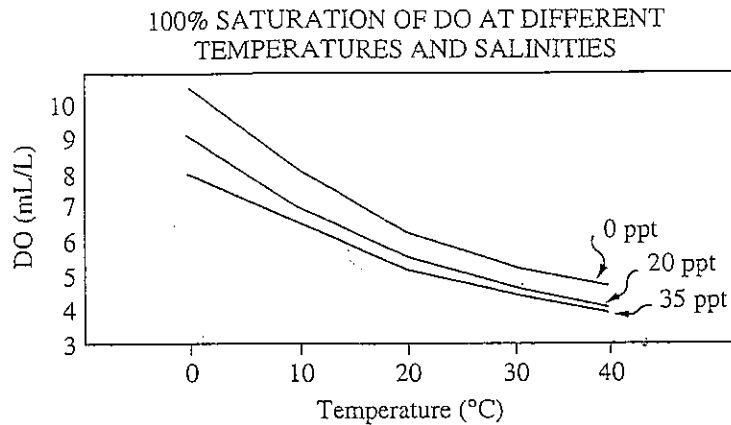
9. How will the results be verified? (sample size or repetition)

10. How will the experimental results be presented? (graphs, charts, etc.)

11. What are the expected results? Why? This is your best prediction based on reading the lab procedure and any other information you obtain from reference sources.

Would you expect the Dissolved Oxygen concentration of water samples taken from a lake at 7:00 a.m. to be higher or lower than samples taken at 5:00 p. m.?

In this exercise you will measure and analyze the dissolved oxygen (DO) concentration in water samples at varying temperatures. There are several factors that can affect the DO concentration. The graph below illustrates this point.



You will use a kit to determine the DO content of a water sample. This kit involves a technique know as the Winkler Method. It will be measured in mL oxygen /L water.

Procedure

1. Fill three of the water sampling bottles with 50 mL of water of the three different temperatures: 0° C, 23° C (room temp) and 30° C.
2. Determine the DO of each sample using the Winkler Method. Record these values in Table 1.1
3. Record your values on the class blackboard and then enter the class means.
4. Graph both the lab group data and the class mean on graph paper provided

Graph Title: _____

