Toxicity of Herbicides Lab

Problem Question:
At what concentration does a toxin become ineffective?

Hypothesis:
"If I (independent variable) then (dependent variable) because _____"

Safety Precautions:
Since we have chemicals, read the labels carefully and list any safety precautions here.

Methods: Perform a serial dilution!

1. Label 5 test tubes as follows: 1:1, 1:10, 1:100, 1:1000, and 1:10,000.
2. Take 11 mL of the full-strength material being tested for toxicity from the stock solution and add it to the test tube labeled 1:1. (100% Concentration)
2. Place 9 mL of tap water into each of the other test tubes.
3. Pipette 1 mL of "toxic" material from the 1:1 tube into the tube labeled 1:10. Mix well. (10% concentration)
4. Pipette 1 mL from the 1:10 tube into the tube labeled 1:100. Mix well. (1% Concentration)
5. Pipette 1 mL from the 1:100 tube into the tube labeled 1:1000. Mix well. (0.1% Concentration)
6. Pipette 1 mL from the 1:1000 tube into the tube labeled 1:10,000. Mix well. (0.01% Concentration)
7. Add one duckweed plant to each tube. Wait for imminent doom.

Results:
Publish a data chart**.**

Analysis:
Answer your problem question, based on a thorough analysis of the data.

Errors/Inconsistencies:
Identify any in the lab and make suggestions for next time.

Extrapolation Questions:

1. Identify 1 environmental benefit & 1 environmental cost to using herbicides to kill unwanted plants.
2. Identify one economic benefit and one economic cost to using herbicides to kill unwanted plants.
3. Identify 2 alternative ways we could kill unwanted plants without the use of herbicides.