Duckweed Dose/Response Bioassay
Data Form

Name _____
Date _____

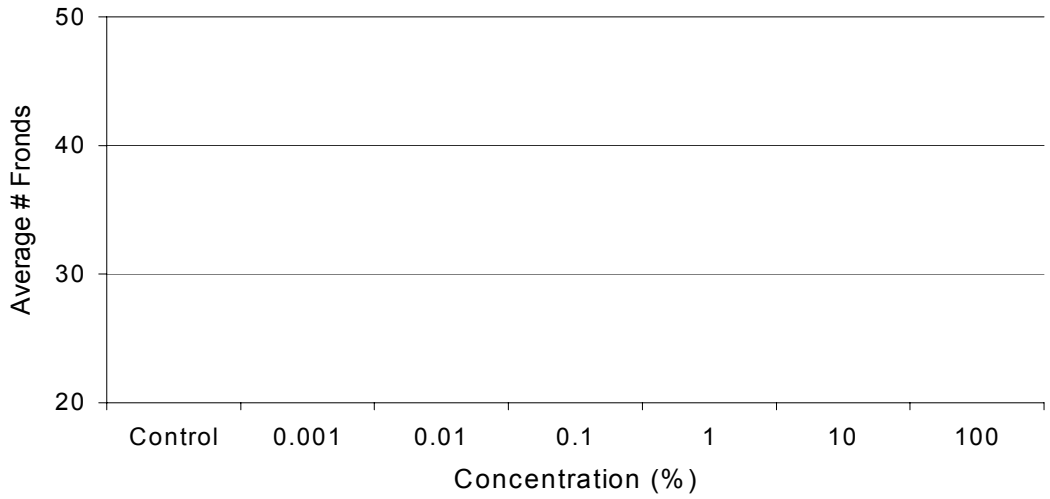
Chemical tested _____
100% concentration _____ mg/L
Length of experiment _____ days
Constants (such as temperature and light) _____

Table 3a. Duckweed Bioassay Data

Solution Concentration	# Duckweed Fronds/Beaker			Avg. # Fronds	Comments about Plant Health
Control					
0.001%					
0.01%					
0.1%					
1%					
10%					
100%					

Make a bar graph showing the average number of fronds in each treatment:

Figure 3a. Duckweed Bioassay Results



Name _____

Some questions to consider: (Please answer using full sentences.)

1. Did the duckweed colonies grow well in the control beakers? Do your control plants appear healthy? If not, what would you recommend trying differently for the next round of experiments?

2. Did duckweed growth respond in a predictable way to concentration? Describe any trends you observed.

3. Do any of your data not fit the trends you observed? If so, can you think of any reasons why these data might lie outside the range you would expect?

4. What TC_{50} would you estimate based on your duckweed data? TC_{50} = ___
(If it is impossible to estimate the TC_{50} from your data, please explain why.)

5. What can you conclude about the toxicity of the substance you tested? Is this what you expected? Was your hypothesis supported by the data?

6. If other students carried out a dose/response experiment using the same chemical, did their data follow the same trends as yours?

7. Based on this experiment, would you say that duckweed would be a useful bioassay organism for water samples from the environment? Why or why not?

8. If you were going to repeat this experiment, what would you do differently? How might you improve the experimental design to reduce the variability of your data or lead to more reliable results?