

Post-Lab Questions

Lab 1

Note: These questions are due with your completed Lab Exercise pages.

Biology 102
Concepts of Biology Lab

Name: _____

Exercise 1

1. Match the experimentation steps with the correct headings below.

- ___ I. Observations leading to a question
- ___ II. Hypothesis
- ___ III. Predictions from Hypothesis
- ___ IV. Define Independent Variables
- ___ V. Define Dependent Variables
- ___ VI. Experiment Materials & Methods

- a. Type of bait: peanut butter, potato chips, roach trap bait, no bait.
- b. If roaches like peanut butter the best, they should choose it over other options.
- c. Obtain 16 commercial roach traps with sticky floors that catch roaches. Remove the commercial bait from 12 of them, put 1 gram of peanut butter in 4, 1 gram of potato chip crumbs in 4, and nothing in the last 4. During the daytime, draw 4x4 grid on the porch and randomly place one trap in each grid square before dusk. At dawn the next morning, collect the traps and count the number of roaches in each type of trap, then calculate the average for each trap type.
- d. More roaches will be attracted to peanut butter baited traps than any other trap.
- e. My kid dropped a peanut butter sandwich and potato chips on our front porch. When I looked at night, I found lots of cockroaches on the ground near the peanut butter, but not on any of the other food or in any of the commercial roach traps there.
- f. Number of roaches found in the traps.

2. In question 1, what is the experimental control? Explain clearly.

3. The data from the experiment in question 1 is in the table below. Do the results support the hypothesis? Explain why or why not.

Trap #	Bait Type			
	Peanut Butter	Potato Chips	Commercial Roach Bait	No Bait
1	6	4	3	1
2	7	9	2	0
3	4	6	2	0
4	9	7	1	0

Exercise 2

4. Name three things you should do with the microscope before you put it away (other than unplug it...)

5. Consider the following situation. You place your slide on the microscope stage, view the image successfully at 40x, then switch to 100x by rotating the objective into place. You focus the image, and have lots of light, but the depth of field is poor and you can't see objects clearly.

What would you do to improve the image you are seeing? Explain what part(s) of the microscope you would adjust and how.

6. What does 'par focal' mean? Why is this a useful thing for microscopes? Explain clearly.

7. If you are looking at a letter "e" slide on a microscope at 100x, but you can't see the entire letter – would you increase or decrease your magnification to get the whole "e" in your field of view?

8. Describe how the elodea leaf in fresh water differs in appearance from the elodea leaf placed in 20% salt solution. What causes this change in appearance?

9. Name three differences between plant and animal cells. Explain each clearly.