

**LIVING ENVIRONMENT SEMESTER I (SLS21) PRE-LAB ASSIGNMENTS
FALL 2016**

DIRECTIONS

1. Pre-lab questions are due immediately upon entering the lab and are ***NOT accepted late***. No exceptions.
2. Answers may be typed or neatly handwritten on a separate sheet of paper in ***complete sentences***.
3. To earn credit, your submitted assignment must include your first and last name, lab number, and the name of your regular Living Environment class teacher.
4. If you are not sure of an answer, look it up in your notebook, textbook, or online (***but do not forget to write down exactly where you found your answer***). You will receive a zero on the assignment if you leave an answer blank or write “I don’t know”, “IDK”, “I was absent that day”, etc.
5. If you are absent on your scheduled lab band, bring your pre-lab assignment when you make up the lab and ask the teacher to stamp both the lab sheet (to verify that you made up the lab) and your pre-lab assignment (to verify that your assignment was complete at the start of the lab band).

LAB 1: ORIENTATION AND SAFETY

1. State *three* reasons why a laboratory might be more dangerous than a classroom.
2. Explain why you will need to wear goggles during some of the lab activities.

LAB 2: EQUIPMENT AND MEASUREMENT

1. Explain the procedures for making up a lab that you were absent for. Be sure to include how long you have before it is too late to make up the lab.
2. A kitchen recipe calls for one-half cup of milk. Describe how you could make sure that you pour out the exact amount of milk that you need for the recipe.

LAB 3: MICROSCOPE I – OBSERVING THE LETTER ‘e’; WET MOUNT

1. State *one* reason why it can be difficult for biologists to study cells.
2. Look up a picture of a microscope and describe the functions of *each* of the following parts:
 - course adjustment knob
 - fine adjustment knob
 - objective lensBe sure to write down exactly where you found the information.

LAB 4: TENEBRIO

1. Look up what a *Tenebrio* is and write it down. Be sure to include exactly where you found the information. When writing the name *Tenebrio*, please be sure to use a capital T and either *italicize* or underline the word.
2. Explain the purpose of the control in an experiment.
3. Design an experiment to determine whether a group of *Tenebrio* like school breakfast. Be sure to include a control group. When writing the name *Tenebrio*, please be sure to use a capital T and either *italicize* or underline the word.

LAB 5: MICROSCOPE II – PLANT AND ANIMAL CELLS

1. Describe how the microscope changes the image being observed (other than making it look bigger).
2. Biologists often add water when preparing a slide of cells to study. Explain why the water might be useful.
3. State *three* things that you would like to see under the microscope that we have not looked at yet in lab.

LAB 6: OSMOSIS IN POTATOES

1. Define the terms *diffusion* and *osmosis*. If you need to look up the definitions, be sure to write down exactly where you found each.
2. Predict what will happen to potato cells that are left in fresh water. Explain your prediction.

LAB 7: DIFFUSION I – SALTY CELLS

1. Look up a video of cells placed in salt water and describe how the cells change. Be sure to write down exactly where you found the video.
2. Explain why the cells change when they are placed in salt water.

LAB 8: CHEMICAL INDICATORS

1. Look at a Nutrition Facts label on a package of food or on a beverage can or bottle. List the mass of total fat, total carbohydrates, sugars, and protein. Be sure to include the units next to each number (this is the symbol next to the number, usually g for grams or mg for milligrams).
 2. Describe how you think scientists might have found out how much of each nutrient is in the food or beverage.
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LAB 9: DIFFUSION II – CLOSED BOX MYSTERY

1. Complete the following chart.

| Nutrient | Chemical Indicator Used to Detect | Initial Color of Indicator | Color if Nutrient is Present |
|----------|-----------------------------------|----------------------------|------------------------------|
| Glucose | | | |
| Starch | | | |

2. Identify whether glucose or starch would have an easier time getting through a cell membrane. Explain your answer.
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LAB 10: MAKING CONNECTIONS I – PULSE RATE HISTOGRAM; MUSCLE FATIGUE

1. Look up and describe *one* way that you can find your pulse and count your pulse rate. Be sure to write down exactly where you found the information.
 2. Describe how you expect your pulse rate to change when you exercise. Explain why you expect this change.
 3. Look up the term *muscle fatigue*. Be sure to write down exactly where you found the definition.
 4. Explain why physical education teachers ask students to perform a warm-up activity at the start of class.
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LAB 11: MAKING CONNECTIONS II – EXPERIMENT AND LAB REPORT

1. Design an experiment using all the students in your lab class to determine the effect of exercise on the number of times a student can squeeze a clothespin in one minute. Be sure to identify the independent and dependent variables in your experiment.
 2. Explain why it is important to divide the whole class in half to form your control and experimental groups instead of just using two students.
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LAB 12: REACTION TIME

1. Define the term *homeostasis*.
 2. Identify the two major systems in the human body that perform the life function of regulation by controlling other body systems.
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LAB 13: DISEASE TRANSMISSION

1. Identify the human body system that protects you from pathogens.
 2. Describe the job of white blood cells in the human body.
 3. Explain how an *infectious* disease is different from a *non-infectious* disease.
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LAB 14: MENSTRUAL CYCLE

1. Identify the human body system that controls the menstrual cycle.
 2. Identify *two* female hormones.
 3. Explain why females have a menstrual cycle.
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LAB 15: LAB PRACTICAL

1. In many college science classes, students take a lab practical exam instead of a written exam to assess their lab skills. Describe how you think you could show off the lab skills you learned this semester.
2. Identify your favorite lab of the semester and explain why you enjoyed it.