

Review Guide for Labs (first half of semester)

Biol-1, C. Briggs, revised Fall 2016

For the following labs, be able to:

Lab 1

1. describe lab expectations, safety rules, and cheating policy.
2. describe strategies to address common problems with group dynamics.
3. identify lab safety equipment purpose, use, and location.
4. apply ideas of scientific inquiry, related to sources of authority and basic experiment design.
5. develop questions into testable hypotheses.
6. answer all the assignment questions at the end of the lab.

Lab 2

1. write scientific hypotheses.
2. discuss strategies for making quality observations.
3. describe some methods we used to detect invisible objects.
4. describe how we observed results of enzyme activity.
5. identify whether particular environments are likely to stop enzymes from working.
6. describe how to determine the calorie density of a dry, solid food.
7. answer all the assignment questions at the end of the lab.

Lab 3

1. identify dependent and independent variables in experimental designs.
2. distinguish between precision and accuracy.
3. use the full measuring capabilities of rulers or meter sticks.
4. identify the meaning of various metric prefixes.
5. convert between metric units.
6. use scientific notation to work with very large and very small values.
7. use logarithms to work with large ranges of values.
8. use and care for a compound microscope.
9. describe several methods by which single-celled organisms move themselves.
10. answer all the assignment questions at the end of the lab.

Lab 4

1. describe relationships among confidence level, confidence interval, and sample size.
2. describe which direction materials are likely to move through a membrane.
3. describe likely relationships among surface area, volume, and evaporation rates.
4. answer all the assignment questions at the end of the lab.

Lab 5

1. given a question and hypothesis, be able to choose experimental groups, identify measurements, and set up a data table.
2. given a question and a data table, be able to set up graph axes and choose a graph format (line, bar, etc.) to accurately represent the data.
3. describe the starting materials and products of cellular respiration.
4. distinguish among the terms ectotherm, endotherm, poikilotherm, and homeotherm.
5. predict how a particular metabolism type might react to a certain environmental temperature.
6. answer all the assignment questions at the end of the lab.

Lab 6

1. describe the structures and functions of roots, stems, leaves, flowers, and seeds.
2. discuss how we determine what colors of light are used by plants.
3. discuss how we detect whether a leaf produces starch in the absence of light.
4. discuss how we determine whether amount of light influences photosynthetic rate.
5. answer all the assignment questions at the end of the lab.

Lab 7

1. use terms to describe plant leaf features (parts, types, venation, surfaces, shapes, margins, arrangement).
2. use a dichotomous key to identify plants.
3. discuss biodiversity differences shown in a given data table.
4. answer all the assignment questions at the end of the lab.