

Biology 233 Lab Report Competence Checklist

Up until this point we have not asked you to prepare full lab reports. As we move into the molecular biology labs, our lab report expectations are going to increase. Even with our truncated lab reports, Libby has been making comments about lab report format. We suggest you look over those previous lab reports and make note of her comments.

We will build on these expectations in Cell Biology and more advanced courses.

Scientific Expectations:

_____ Student organizes the lab report into three main sections: Introduction, Materials and Methods, Results and Discussion.

Introduction (one-few paragraphs)

_____ Student explains the general subject of the lab exercise.

_____ Student states the rationale for doing this experiment.

_____ Student identifies the organism or system of study and explains why it was chosen.

_____ Student provides additional background information relevant to the lab.

_____ Student states the specific objectives of the lab.

Materials and Methods (typically one or two fairly short paragraphs)

_____ Student summarizes how the data was collected and analyzed. Includes names of established protocols, key reagents, key instrumentation. Avoids “recipe” format, specific volumes of reagents, specific concentrations of reagents unless significant, incubation times, etc.

Results and Discussion (major portion of report)

_____ Student presents data in text, tables and figures. (Tables and figures may be integrated with text or assembled in order of discussion at end of report.)

_____ Student refers to tables and figures in the text of the report.

_____ Student sequentially numbers and titles tables (**above** table).

_____ Student sequentially numbers and titles figures (**below** figure).

_____ Student displays data logically in table(s), including relevant units.

_____ Student presents data in well-labeled drawing(s) or diagram(s). Gels or photos should be mounted on paper and labeled like other figures.

_____ Student displays calculations, if applicable.

_____ Student interprets the results and draws conclusions, referring to data (table, figures, calculations, etc.).

_____ Student is able to answer additional questions proposed in the lab handout.

_____ Student explains any experimental difficulties and makes suggestions for further work.

Mechanical Expectations:

- _____ Each individual report is the original work of each student.
- _____ Team reports represent the work of all team members.
- _____ Report is stapled.
- _____ Pages are numbered sequentially.
- _____ Title page is present, does not have a page number and is signed.
- _____ Voice is consistent and usually third person, past tense when describing the experiment.
(May be present tense when describing current knowledge in the field.)
- _____ Writing is organized, logical and clear. Reader can follow line of reasoning.
- _____ Sentences are complete and grammatical and flow together smoothly.
- _____ Words are chosen for precise meaning. Formal English is used – no contractions, slang, colloquialisms, or abbreviations (unless scientific and properly explained).
- _____ Information (names, facts, etc.) is accurate.
- _____ Scientific names are presented appropriately, with capitalization and italics/underlining (E. coli, *Drosophila melanogaster*).
- _____ Appropriate significant figures are used (see handout).
- _____ Writing has **academic appeal**; it captures the reader's attention and is a pleasure to read.