

Revision checklist for lab reports and scientific papers

Lab reports and scientific papers document the results of scientific experimentation and communicate its significance. Typically, lab reports and scientific papers contain the following sections: title page, abstract, introduction, materials and methods, results, discussion, and references. The *title page* includes the name of the experiment, the participating lab partners, and the date; the *abstract* summarizes the purpose, findings, and conclusions of the experiment; the *introduction* contains a statement of objectives and background information; the *materials and methods* provide the list of materials and the procedure (in chronological, narrative format) used for the experiment; the *results* contain the major findings of the study, including calculations and data; the *discussion* includes interpretation and analysis of the data; and the *reference* section lists full citations for all references cited. Lab reports and scientific papers may also contain acknowledgments and appendices.

The major difference between lab reports and scientific papers is that lab reports are shorter documents whose audience is typically a teacher and classmates. A scientific paper contains the same sections as a lab report; however, beyond presenting and interpreting the experiment, it also puts the experiment in conversation with other research in the field and invites further study. Its audience, therefore, is the scientific community at-large.

- Is the title concise, and does it adequately describe the contents? For example, with the title “Substance Y Alters Blonial Structure of Elephant Bone Marrow,” researchers interested in substance Y, blonial structures, elephants, or bone marrow will recognize that the article may be of interest to them.
- Are the appropriate headings and subheadings included and in proper order?
- Are the tone and style appropriate? Scientific writing, for the most part, is intended to be more factual than entertaining and is not embellished with descriptive language, anecdotes, personal opinion, humor, or dialogue.
- Does the writer use passive voice, which is the generally accepted convention? The writer of a lab report, for example, should use the passive past tense: “Solution A was centrifuged,” not “I centrifuged Solution A.”
- Is past tense used for describing the procedures and present tense for describing the results and conclusions?
- Are sentences short and to the point, expressing facts clearly and concisely? Does the writer answer all basic questions about the topic?
- Have conventions related to symbols and abbreviations been observed?
- Are figures and tables numbered and accompanied by explanatory captions?
- Are they introduced before they appear in the text?