

Scientific Writing: Methods and Materials

This handout was created to accompany the Writing in the Sciences video series.

The purpose of the Methods is to provide a detailed description of the experimental procedure. The goal of this section is to provide the reader with a clear understanding of the actions performed during the lab and what equipment you used so that using your instructions they would be able to successfully perform the experiment.

In the Methods section:

- Discuss the actions performed.
- Describe the equipment used.
- Tell how the equipment was used.

Note: For the Methods section it is important to use clear and straightforward language without unnecessary detail.

Ten tips for writing this section:

1. Write the Methods and Materials section first.
 - a. Be sure to use the lab instructions as a guideline.
 - b. Start right after finishing the lab. The fresher the memory, the better the explanation.
2. DO NOT write this section as a list. Instead of numbering steps, write out what you did in a narrative format as if you are watching someone else do the experiment.
3. Name the materials and equipment used as they arise during the procedure, describing how they were used.
4. Although there are some variations in requirements, many instructors and journal publishers recommend the use of passive voice.
5. Taking good notes will help you explain the procedure more clearly and in later sections describe any potential sources of error.
6. Use pictures and diagrams to explain complex setups.

If the instructor allows phones, take pictures in lecture. Even if you can't use pictures in your report, having them can be useful to create diagrams.

7. Keep it simple and scientific. Make it scientific by providing enough detail that someone outside of your lab (with a background in your field) could easily reproduce the experiment and gather results the same way you did.

8. Knowing your audience can help you decide how much detail to add. Assume the reader is competent enough to know how to use their equipment or consult the manual for specific instructions.

9. Avoid ordering the reader to do each step of the experiment. Instead, reporting what you did.

10. Avoid the pronouns "I" or "we."