

Keeping a Notebook

A guide to good practices for research note-taking.

Key points:

- 1) Use a bound notebook (not loose-leaf).
- 2) Use numbered pages to help cross-referencing
- 3) Always note the date (and time especially for time-critical details)
- 4) Use a descriptive title for every entry
- 5) Record your purpose (objective)
- 6) Record methods, including calibration details, time and place (if relevant) and procedures (protocols followed), names (brands, models, serial numbers) of all instruments and items used.
- 7) Write down key data or initial results (e.g. in tabular, graphic or text form).
Examples of results might include timestamps, filenames, locations, identities, and relevant observations about the instrument(s) being used or the object(s) being measured. For outdoor measurements, sky and weather conditions might be important.. It might help to make a table in advance for data collection.
- 8) observations about the instrument(s) being used or the object(s) being measured.
For outdoor measurements, sky and weather conditions might be important.
- 9) Backup your notebook by making digital copies or other paper copies as needed.
- 10) For long-term records, use high-quality (e.g. low-acid) paper.
- 11) Be prepared to share your notebook at any time.

Why keep a research notebook?

Science is built on careful records. In our digital world, many people are moving away from hand-written records, often to discover that they have lost or cannot find an important file. Have you ever “lost” something on your computer or had a device broken or stolen? Remember that digital records can disappear in an instant. Digital media can become erased or become corrupted, and unless there is a rigorous and regular backup procedure, digital records are bound to disappear. Paper media can actually still outlast digital media, making it helpful to keep paper records, particularly for any study that you expect to publish or share with others.

Paper records can also help us remember critical information that can provide a useful key to our digital files. In this way, they form a valuable kind of “metadata” (data about the data). Key information to record might be date and time, title and purpose of a study (objective), methods, and results (see list above). Since you may be saving digital records at the same time, a paper record can be used to store key details like filenames, the date and time of creation, the identity of the record, and its digital location. As digital records get copied and processed, the paper notebook can provide a useful record of the copying and processing steps, allowing the user to keep track of the location and processing details along the way. What happens to data during the data life cycle can be as important as the data itself.

Increasingly in science, we are asked to preserve (archive) our data. Without useful metadata, a data archive is useless. Paper notebooks provide a useful way to record and remember key metadata needed to interpret your data. In some fields, it is not uncommon for someone (colleagues, funding agencies, or government representatives) to ask to review your data. In future sessions, we will consider good practices for archiving data. Here, we focus on keeping good notes as an initial step in data archiving.

If you prefer digital copies, don't worry. You can always scan your notebook to a PDF (a good way to copy, backup, and share your notes). You can also enter key information into a metadata file. Your notebook can also provide a good location for working copies (printouts) of digital tables or figures, providing a working space for sharing with your team member(s).

By keeping a bound notebook, you can be sure that the pages will not be lost. By keeping a notebook, you can ensure basic security for your data that can enhance its utility and extend its lifetime.