

# Scientific Laboratory Notebook

In the United States, the first person to conceive of an invention, product, or process is awarded the patent for that product or process. Properly kept and witnessed notebooks are legal evidence of an invention. Therefore, records kept in a legal, scientific notebook might serve to settle patent disputes, such as when someone argues that they made a discovery first and that a discovery or process belongs to them. Records might also serve as legal evidence when a specialist must report findings from testing, such as in paternity suits or criminal cases. If the scientific notebook is not produced in an acceptable fashion, it will be inadmissible as evidence and cannot be used.

The following process will help you properly set up and maintain a PLTW Laboratory Notebook.

## Record Keeping Procedures

Use your PLTW Laboratory Notebook to record all experimental design work.

1. A laboratory notebook is a bound book from which you cannot remove pages.
2. Use only your official notebook to record your work.
3. Make all entries legible in permanent black or blue ink only (exception: colored pencils for drawing experimental observations).
4. Number each page and maintain a table of contents. This will make it much easier for you and others to find specific information in your laboratory notebook.
5. Sign and date the bottom of every page as soon as you've completed a page.
6. Have a witness sign and date the bottom of each page as well.
7. If you make an error when entering information, cross out the error using a single line. Right beside it, record the new entry and label the correction with your initials.

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Do not erase, ink-over, or white-out any errors. Errors must remain legible. In the Industry, you might also be required to date your change of entry and give a concise comment explaining why the entry is changed.

8. Avoid abbreviations and codes when possible. Create a key for those used.
9. With all your entries, be precise and to the point. This way, someone of equal skill could understand or repeat the procedures, if necessary, and obtain reproducible results. You need to record all materials, quantities used, reactions, or operating conditions in enough detail. You might even want to list all persons from whom samples were obtained for reasons of traceability (e.g., locating the source of contamination).
10. Number every page of the notebook (in the top outside corner), starting with the number 1 on the front of the first page and number 2 on the back of the first page. Continue numbering the front and back of each page of the notebook throughout the course of the school year.

11. Make page 1 your title page. In the middle of the page, in bold print, write on separate lines:
  - the name of the course;
  - the academic year;
  - the name of your school;
  - your name.
12. Make pages 2–6 the table of contents. Write Table of Contents at the top of each of these pages. Each time you start recording information for a new topic or lesson, write an entry on the table of contents, showing where the record of work begins.
13. Begin recording your on page 7, making sure to enter it in chronological order.
14. Structure each lab report as outlined below, and include all important notes, data (tables, charts, drawings, graphs, and written observations) and comments. Paste graphs and other small sheets of paper into your notebook when necessary. When pasting, only use a glue stick.

Title	Copy the title from the protocol sheet or create your own.
Purpose	Explain the purpose of the lab in a full sentence.
Materials	List materials used in the lab.
Methods	Reference the experiment or write your own procedure if designing an experiment.
Observations/Results	Provide a complete description of all your results.
Conclusions	Discuss your results. Analyze your data, considering your objective. Explain possible sources of error. Respond to all conclusion questions.

15. To reference previous work or projects, use "See page..." or "Go to..." statements.

The most important aspects of keeping records are:

**Timeliness:** Record information right after the work is accomplished.

**Accuracy:** Record correct information.

**Legibility:** Be sure your writing can be read by others.

**Completeness:** Include all information and details.