Laboratory Notebook Preparation

Everyone at a company or institution who is involved in research or product design and development must document all work. A laboratory employee documents experiments and other activities in a legal scientific notebook. The descriptions written in the laboratory notebook should be written to allow another person, who is skilled in the field, to comprehend and reproduce the experiments. Record everything; it is better to have too much than too little. A legal scientific notebook becomes the historical record of all work done by the employee.

A scientific notebook may be required in court cases. Examples of situations in which a scientific notebook may be used in court include the following:

1. To settle patent disputes, such as when someone argues that he/she made a discovery first and says a discovery or process belongs to him/her.
2. To report a specialist's findings from testing such as in paternity suits or criminal cases.

If the scientific notebook is not maintained in an acceptable fashion, it will be inadmissible as evidence and will not be used.

Setting Up a Legal Scientific Notebook

1. Obtain a bound notebook with sewn pages. A composition-style notebook works well.
2. Write on the front of the pages only. After that, no changes should be made. Any mistakes that made should be crossed-out with a single line only.
3. Use **ONLY** black pen to make **ALL** entries into the notebook. Be careful when making entries. Incorrect entries may be lined out with a **SINGLE LINE ONLY** and must be labeled with initials and the date.
4. Graphs and other small sheets of paper may be pasted into your notebook when necessary. When pasting, use a glue stick. There should be no loose papers in the notebook.
5. If the pages are not already numbered, number the front of every page of the notebook, at the top outside corner starting with the front side of the first page as number 1.
6. It is important to make successive entries on consecutive pages. Do not insert or remove any of the pages.

7. On the front cover of your notebook, and on page 1 write:

[name of course] NOTEBOOK
course section or class period
name of institution
your name
today's date

8. Make pages 2 through 5 the Table of Contents. Write "Table of Contents" at the top of each of these pages. Record the page and title of each new activity in the Table of Contents.
9. Glue the "Laboratory Notebook Policy" on the following page onto the inside back cover of the notebook. Read the policy carefully before recording information into your notebook.
10. The record of work begins on page 6.
11. Sign and date the bottom of every page. Also, write, "go to page [number]" on the bottom right-hand side of the page to tell the reader where the rest of the information for this topic is located in the notebook. On the page you "go to," write, "from page [number]" on the top left-hand side of the page showing the page you came from. If you set your notebook up this way, it should be relatively easy for you or anyone familiar with the work you are doing to find the data, observations, and conclusions about a specific topic.

Based on the "How to Set Up a Legal Scientific Notebook" chapter in *Biotechnology Laboratory Manual* by Ellyn Daugherty.

Laboratory Notebook Policy

Based on the Laboratory Notebook Policy used at Applied Biosystems, Inc., Foster City, CA.

Why is proper record keeping in a bound notebook important?
In the United States, the first person to conceive and show diligence to develop an invention, product, or process is awarded the patent for that product or process. Notebooks that are properly prepared, maintained, and witnessed are legal evidence of conception and diligence to practice an invention.

Record-Keeping Procedures

1. Use only your official notebook to record your work. All work must be recorded in the notebook and in no other document.
2. Date and sign **EVERY** page. Sign and date at the end of an experiment.
3. Maintain a Table of Contents as you make entries in the notebook. The first page of every lab investigation should be listed in the Table of Contents.
4. Make all entries legibly **ONLY** in **BLACK PERMANENT INK**. No pencil entries are permitted. The use of colored pens or pencils is acceptable in some cases, as approved by the supervisor.
5. **DO NOT ERASE, INK OVER, OR WHITE OUT ANY ERRORS**. Draw a single line through errors so they can still be read. Place your initials and the date next to the correction.
6. Briefly state the objective or purpose of each experiment, and reference previous work or projects.
7. Use "from. . ." or "go to. . .' statements to tie together sections of a lab report or continuous work.
8. Record all directions, materials, and quantities used, plus reactions or operating conditions, in sufficient detail and clarity so that someone of equal skill could understand or repeat the procedure if necessary.
9. Avoid abbreviations and codes when possible. Only the standard abbreviations for metric measurements may be used universally. Any coding or special labeling on samples or in procedural notes should be fully recorded and explained in the notebook.
10. List all persons from whom samples or data were obtained, shared, or transferred.
11. Attach as much original data as is practical in the notebook. Where it is not practical to attach original data, attach examples and make clear reference to where the original data are stored.
12. When procedures, data, or conclusions, etc., are continued from previous pages, each page must have a "from page _____" listed. When continuing to another page, there should be a "go to" statement directing the reader to the next page of that work.
13. For important entries, such as key conclusions or new ideas, have a coworker sign and date the entry. Be sure the coworker is not a coinventor, but someone who is capable of understanding the meaning of the notebook entry.
14. Write/print clearly so there is no ambiguity about the information recorded. Skip lines between data tables, graphs, and important conclusions to make it easier to find and read recorded information.