

How to Outline from a Textbook

Using a Science Text Module as a Guide

There are many ways we can approach learning from a text book. One way that I have found most beneficial is by outlining the module as I study it. In my classes I have taught my students how to outline the science modules which they are studying. Below is a brief list that walks you through this process.

1. The first thing you need to do is LOOK at what you are going to be studying. Start at the beginning and look at the book, the table of contents, the subjects, the pictures and tables, etc. Once you have a general idea of the material you will be studying, go to the Module (like a chapter) in the book which you are going to be reading through.
2. Do the same thing as I mentioned above. Go through the module, look at everything: the titles, the pictures and captions, the tables, definitions, bold words, etc. What you are allowing yourself to do is become acquainted with the material, an introduction of sorts.
3. I always encourage my students to have a notebook to take notes in and a notebook to write out the lab report. (see the next section on how to do a lab report) If you prefer to use a binder instead and type everything out, that is great, too. You just need to have something to make notes on as you go through the outline.
4. As you begin making your outline start your skeleton by making a list of all the titles and subtitles. (If you don't know how to make an outline, please go here . I have also included notes at the end of this guide to help you.)
5. Then make a section for all the definitions and the bold-faced words. Take time to read the definitions and if you don't know what the bold-faced words mean, look them up before you start reading. Most often they are easy to define within the context of the material but there may be a time when you will need to look it up. Just by doing this short exercise, you are filling your vocabulary bank up and when you go to read the lesson it will be easier to understand.
6. Now take time to scan each section that you wrote on your outline. Note the important parts of that section and familiarize yourself with the terms, ideas, or concepts. If you left room on your outline, write down a brief summary of what you understand from the section.
7. Like you did with the definitions, now go through and make a note of all the formulas listed in the module. It is important to understand the math concepts in each module as they are cumulative and you will use them as you continue advancing in your scientific endeavors.
8. Make a note of the sections which were hard to understand. This will help you save time when studying so you spend your time on the sections that need more attention.
9. Go back and re-read the sections which were hard to understand and make any necessary notes from what you have read.

10. Now go through and re-read the module from beginning to end. In reality this may be the first time you have actually read the module through. That is ok. What you have been doing up to this point is giving yourself the grammar (knowledge of the material) and asking questions (the dialectic stage) and preparing yourself to make it your own but understanding what you are reading. When you understand something you can teach it to someone else, (this is the rhetorical stage of learning.)
11. Once you have read through the module, begin preparing for your labs. Write down the lab procedures and materials in your lab notebook before you are in lab class. This way you don't waste valuable time doing that during the experiments when you are supposed to be making observations, hypotheses, and conclusions about what you are doing.
12. If you can get the audio CD which goes along with the text, try to listen to it at least once to add yet one more layer of information about the topics you have studied. Following this approach of dissecting the information in the text will allow you to go through the material at least 2 to 3 times, giving yourself a great opportunity for success with this subject.

If you are attending a lab science class the suggested schedule below may be a helpful in planning your lessons and completing the assignments in each lesson.

Suggested Schedule for Lessons following a 2 Week Schedule:

Week 1

- Day 1:** Class day. Come with your labs information in your lab notebook already. ie: Materials and procedure listed. Bring your lab notebook and your text book with you each time we meet.
- Day2:** Review notes from class day. Make sure you are able to complete your lab notebook. Take time to write down what the results were, if you haven't already, and draw what you saw during the labs. Look at the module, as we discussed in class, and begin to get an idea of what you are going to be studying. Make a general outline of the module and note all the vocabulary and tables or charts in the module.
- Day 3:** Read through the module. Using a sticky note make any notes that you may want to remember. You can also listen to the book on tape (mp3) while you are doing this as well. It really helps to get the information in.
- Day 4:** Go through each section and summarize the material in your outline. Take your time with this and absorb the material.
Begin working on the On Your Own Questions, if you haven't already. See if you can answer them.
Look through the study guide.
- Day 5:** Do the study guide.

Week 2

Day 1-4: Re-read the module and take the test when you are ready. This week you can spend time on extra projects that supplement the module using any extra book suggestions or concepts that we may talk about in class or research activities.

Before you come to the next class please add the lab information into your lab notebook for the next module.

❖ This schedule just a suggestion. Be diligent to be a wise time-manager. ☺If this doesn't work for you, make a plan that does. Pray and seek your parent's advice.

❖ Make sure you take the time to get acquainted with your text book. Look through the pages, at the cover and all the charts in the front and back. Be sure you look through the appendices at the end of the book. The Module Summary will help you to know your vocabulary.(Appendix B)

Lab Reports

Having the proper lab report is a crucial part of your text and learning. You will want to set your lab book up with a specific goal in mind. Below is a suggestion on how to meet that goal.

1. Own your book! Make it something you want to show off. Make sure you put your name, the class, the year, etc.(All the pertinent information.) on the front of the book or inside the first page.
2. Make a title page. (Perhaps you can combine step 1 and 2 together.)
3. Create a Table of Contents. (Give yourself a few pages for this. It is always better to have some blank pages in between sections than to never have enough room.)
4. Leave a few pages for notes on the Scientific Method
 - a. Purpose-What are you investigating or trying to find out? Ask a question.
 - b. Introduction/Research- What do you know about this subject and what are your sources?
 - c. Hypothesis- What is your educated guess? What do you think will be the outcome based on your knowledge of the subject?
 - d. Materials/Supplies- list all the amounts and quantities of materials used.
 - e. Experiment/Procedure- Specifically state, accurately, what you did during the experiment.
 - f. Analysis/Results- Give your observations and data from the experiment. These are the facts, w/o your opinion weighed in. The information you are receiving through your senses should be measurable.

g. Conclusion- In paragraph or essay form, explain how the observations relate to the data. Show whether or not your question was answered and if it differed from your hypothesis, or expected outcome. Highlight any errors or discoveries you made through the process.

5. Title page for "Lab Pages".
6. On your lab pages include the following:
 - Name
 - Date
 - Experiment and Title
 - Materials
 - Method/Procedure
 - Results
 - Drawings /Charts
 - Conclusion
7. Make sure you number all your pages.

From your lab notebook you can begin putting together formal lab reports that will be a more detailed description including graphs, photographs (not drawings), data and analysis, and most important, the conclusion. From this point you can begin experimenting again, trying to repeat the experiment so that you can validate your data or perhaps finding new data and hypothesis to research and test.

Performing and recording your science experiments is a useful and important skill each science student needs to learn and master. Take time to research, repeat, and report all you are learning through your experimentation process.

Have fun!