Studying Text Books in Science

First, get a perspective

- **Review the assignment in the syllabus and any handouts (1-2 minutes)**
  Maybe you are not required to read some sections
- **Survey the chapter (5-10 minutes)**
  for how the content is organized; get the "big picture"
  This is not to fully understand, rather develop preliminary associations of bits of information that later will help you understand
  Quickly page through the introduction, the summary, vocabulary list, self-test questions, headings, boldfaced material, major graphics, etc.
  Notice the major concepts, definitions, descriptions, causes, effects and arguments.
- **Check out the media, the CD and website (if available)**
  to see what they contain
- **Take no notes, and mark no text in this phase**

First reading

Make the main purpose of your first reading simply to read and get a good idea of the material: what you understand, and what you do not

A science text presents new and complex material which may be difficult to understand. One piece builds on another to help you build your understanding.

The text can provide the foundation for understanding, and bring together information in lectures, labs and hands-on experiments, field trips, and media.

- **Read sentences, paragraphs and short passages with 1-second pauses.**
  Read and pause, read and pause. Let your mind assemble the parts you just read to give you the meaning of the whole unit. This assembly of meaning happens fairly automatically as long as you are intentionally looking for meaning and paying attention to the meanings
- **Look back and forth between words and related graphics**
  until you can see/tell yourself how they are showing/saying similar things.
  A set of text passages that is related to graphics is very useful to understanding. There are many kinds of graphics: pictures, diagrams, maps, charts, tables, graphs
- **From time to time, ask yourself if you are "on track" to understanding**
  If you find yourself reading without understanding, stop and ask why.
  Is it a question of complexity or distraction? of preparation or terminology?
  If you think it is serious, ask your tutor, teacher or academic advisor for help
• When you notice that the author is using comparisons and examples, link them to their descriptions and explanations.

• If you are tired and meanings come very slowly into your mind, take a beak
  If a break is not possible, vary your study activity. For example, draw a picture rather than write, walk instead of sit, read aloud rather than silently.

• If you return to reading after an absence, scan the text and your notes again before reading to cue associations.

Review of first reading
Return to what you do not understand, or want to reinforce
This is not the stage for memorization, but understanding.

• Mark or highlight what you think is important
  In the margin, use or develop a system; use letters as “D” for a definition, “F” for a descriptive fact, “C” for a cause-and-effect statement, “A” for a scientific argument, “?” for what you do not understand
  Other codes you invent for yourself.

• New vocabulary
  Write new vocabulary and concepts down
  along with a short meanings and/or cues
  Keep a list close by or in your notebook.

• Create your own visual pictures or images, or concept maps

• Create sensory cues
  as heat, brightness, movements

• Read a passage aloud to yourself with normal conversational intonation.
  Your translation of printed text into spoken words may activate meanings.
  If you can't read aloud, imagine reading aloud and hearing your own voice.

• Work out your own explanations of hard-to-understand passages:
  Go in short units (a few words at a time), translate their meaning, think of associations, relate them to other parts of the passage, make inferences and try to make your mental model of the meaning match the writer’s mental model.

• Mark passages with a question mark that you still do not understand.

A second reading

• Only read the material again to understand it.
  If you are comfortable with what you understand, proceed to other tasks, like solving problems, exercises, material on the CD or website, and so on.

• In this second reading, if you find you are still having difficulty try
  The CD, video, or website
  The library and find other texts that may explain it better
  Ask the tutoring service or teacher for help
  Ask a study group about the material and their experience with it.
Review your notes for what you:

- Need to review before any test
- Must memorize
- Need to complete exercises or solve problems
- Need for labs, experiments, future lectures, etc.

Reference: [www.studygs.net](http://www.studygs.net)