

Studying Biology



How to Read Biology

Before you begin reading:

1. Preview chapter headings and subheadings. Find and note sections your professor doesn't expect you to read. Some students find it helpful to make an outline of the headings and subheadings so they can keep track of where they are in the text as they read.
2. Look at the pictures in each section before you read it. Read the titles of the pictures. If you recognize something in one of the pictures or if one looks interesting to you, read the caption. Try to figure out what it might have to do with the rest of the section. This may help you become interested in the forthcoming material, or provide you with questions to ponder while you read.

While you are reading:

1. It is very important to make sure you learn each new term as it is introduced before you continue. Below are some strategies you can use to learn the terms as you encounter them.
 - A. First, define the terms. You can:
 - Carefully read the phrases surrounding the term to see if its definition can be found in context. Underline the definition as you reread and rethink its meaning.
 - Identify common prefixes and suffixes in the word. Relate those to the definitions. In biology there are many suffixes that are commonly used. For example, “ase” is a common suffix included in names of enzymes. As time goes on, it will be easier to identify these word clues and use them to learn and remember new terminology.
 - If you are still unsure of what the word means, look it up in the glossary.
 - Most importantly, make sure you learn the meaning of an unfamiliar term before you continue reading. DO NOT JUST SKIP OVER IT.
 - B. Once you have learned the meaning of a new word, you can do several things to ensure that you remember it. These are:
 - Write the word down or make a flashcard of it (free flashcards are available in Academic Assistance Center, Library 124).
 - Try pronouncing the word out loud several times along with the definition or thinking about the definition as you pronounce it.
 - Look at the pictures near the term to see if you can find the term in a picture. This will make the definition more concrete.
 - C. Once you have learned the word, assess how it fits into the paragraph. It also may be a good idea to look again at the prefixes and suffixes so you will recognize them later in unfamiliar terms.

2. Knowing biological terminology does not guarantee understanding of concepts. When it comes to understanding concepts and processes in biology, reading the material slowly while you think about it is most productive. Below are some methods you can use to guide your thinking about biology as you read.

A. Visualize the content. Refer to pictures. Make sure you can identify and understand every item in a picture. This can help you visualize and remember especially difficult material.

B. Read out loud. Pretend you are reading the material to a student who is continuously asking you questions and demanding clarification. Answer the questions out loud or write them down on paper.

C. When you do understand something, write comments, questions, and clarifications in your text or on paper. These can later be used to review.

D. Underline main ideas. While you are underlining them, reread them and remind yourself why you believe they are important. Try using a variety of colors when you underline to color code them according to the type of information they provide; i.e. a definition, main ideas, important examples, examples that really helped you understand a concept, etc. If you find that you are underlining almost every sentence, take a closer look at exactly what you are underlining. Think about which are more general facts, and which are details that are meant to help you understand those facts.

E. Determine how the material applies to your life. Make up analogies for processes or concepts based on things you experience. For example, you might relate metabolic pathways to factories: they take in a molecule and work on it until they get a product, ATP. Try to apply biological concepts to other subject areas. Why and how are they relevant to the layperson? For example, you might be able to remember and understand the process of diffusion and transport in and out of cells by relating it to immigration and emigration.

When you have finished reading:

1. Answer any study questions provided in the book, or quiz yourself about content in various sections of the book. Develop a plan of action for studying the material that you don't expect to retain after the first reading.
2. Write down your questions so you can ask your professor in class or during his/her office hours. Professors like inquisitive students who ask questions!

General ideas and study tips:

1. Read or skim the chapter and any lecture notes the professor has given you before the class. Write down any questions you have as you read to ask in class.
2. When studying for an exam, go through the text to try to explain the diagrams. Write down your explanations.

3. When in class, make notes around diagrams in the text. This gives you a visual connection to the material.
4. Study in small groups. Discussing ideas with other people can help reinforce the material you have learned.
5. Write down all the questions you have. Sometimes in the process of writing the question down, you'll figure out the answer. Write the answers down!
6. If study questions are provided, do them as they are given. Do not wait until the weekend before the exam.
7. Review your notes from the previous lectures every weekend for an hour or so to keep the concepts fresh.
8. Get help as problems arise. DO NOT WAIT! Concepts tend to build on one another, so it only hurts you later on to not get help early.
9. **Use the Academic Assistance Center** and its peer tutors as resources. Academic Assistance is here to help all students, regardless of how they are doing in the class. It is a service provided by PLU, free of charge, to help you do your best academically. You can sign up for individual tutoring appointments in the AAC (Library, room 124) or use the drop-in lab where no appointments are needed. See www.plu.edu/aac for schedules.