

Learning Modules outline the tasks that should be completed to master the biology outcomes from each chapter or group of chapters. Some of the tasks are optional, but highly recommended. Mandatory tasks must be completed by the specified deadlines. Mandatory tasks will consist of a short on-line quiz over the reading, and a short on-line critical thinking question. Sometimes, there will also be group assignments that will be assigned during class.

Learning Module 6 - Introduction to Metabolism.

Learning Outcomes for Chapter 8

1. Correlate the first and second laws of thermodynamics to the exchange and change of energy.
2. Compare endergonic and exergonic reactions.
3. Explain the role that ATP plays in chemical reactions.
4. Label the parts of an ATP molecule.
5. Describe how enzymes affect activation energy.
6. Compare different cellular methods for controlling enzyme activity.

Learning Tasks

- 1) Read Chapter 8 in your textbook.
- 2) Review **FIG 8.14 & 8.15** and explain what this graph is describing in regards to activation energy, enzyme activity, and rate of chemical reaction.
- 3) Review biochemical pathways by viewing the animations at this site - http://highered.mcgraw-hill.com/sites/0072437316/student_view0/chapter8/animations.html# (Remember - these webpages are linked to on the "Links" page on my proferickson website).
- 4) Review Feedback Inhibition by viewing the animations at this site - http://highered.mcgraw-hill.com/sites/0072437316/student_view0/chapter8/animations.html#
- 5) Define the following, important biological terms.
 - A. Energy, first law of thermodynamics, second law of thermodynamics
 - B. Reactants, Transition state, products
 - C. Activation Energy, Substrates, Products
 - D. ATP/ADP Cycle, Phosphorylation
 - E. Enzyme
 - F. Catabolic, Anabolic pathways
 - G. Endergonic, Exergonic reactions
 - H. Feedback inhibition, Allosteric regulation
- 7) **A critical thinking homework will be handed out in class on Tuesday, March 17 and will be due Thursday, March 19th.**