Tips for how to do well in class

1) Eat breakfast.
2) Read the chapter one to two days before the lecture, trying to explain the material to yourself.
3) Close the book and without referring to notes, "teach" the material to yourself, a friend or an imaginary audience.
4) Make notes on things that you don't understand and listen to us explain it in class.
5) Listen in class.
6) If you still don't understand a concept, ask a question in class!
7) After the lecture, "teach" the material to yourself again to solidify what you learned in the book and lecture.
8) Do the problems in the book before looking at the answers.
9) **Be able to do the "Be able to" items at the end of lectures!**

Chapter 5
DNA and Chromosomes

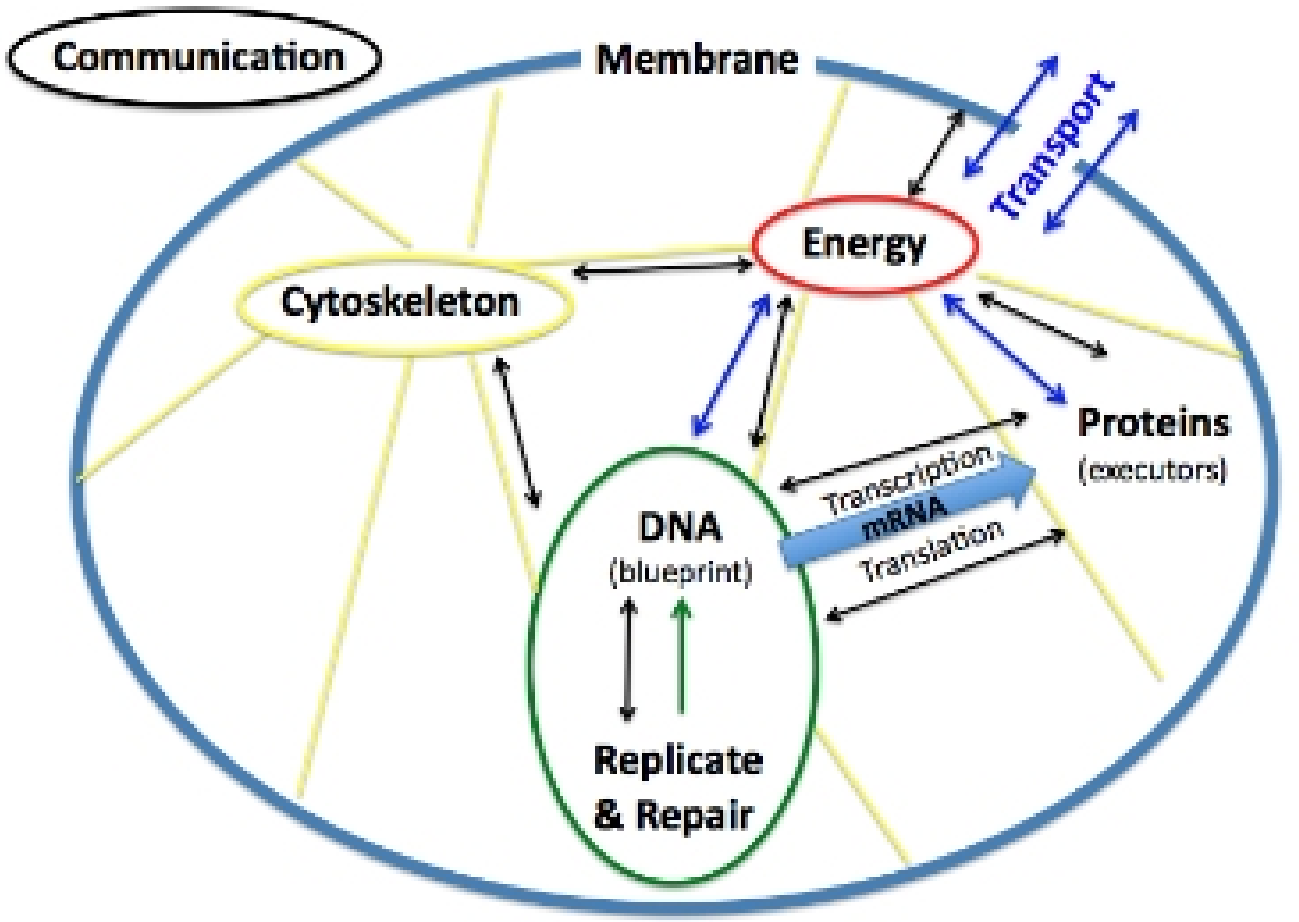
This is the core of
-biotechnology (medicine and agriculture)
-Human, animal, crop, and research genetics
- genetic counseling
-molecular medicine
-Most of the biology classes you will be taking after 213

Objectives

- Understand the key experiments that led to the conclusion that DNA is the genetic material
- Understand the relationship between the structure of DNA and its function in heredity
- Understand the organization of DNA into chromatin and chromosomes

Be able to:

- Write a complementary DNA strand, labeling 3'and 5', given a single strand sequence
- Describe, explain, and sketch the Avery/ MacLeod/ McCarty experiment
- Predict the outcome of the A/M/M experiment if genetic information was protein or RNA
- Describe, explain, and sketch the Hershey-Chase experiment
- Design two experiments to determine what the carrier of genetic information is in a new organism that infects human cells
- Sketch the Central Dogma, naming the molecules and processes
- Compare DNA compaction in eukaryotes and prokaryotes
- Sketch the arrangement of DNA on histones
- Predict the effect of histone modifications (that affect histone charge) on how tightly the histone binds to DNA, and be able to defend your answer



Chemical basis of genes