**READING GUIDE:**

**General Notes:**

I will try to provide a reading guide for most quizzes, but you should not wait for a reading guide to start the reading. The reading is assigned according to the schedule in the syllabus. They are NOT homework that will be collected. The point of the reading guides are to help prepare you for the lecture quiz but also to help prepare you for in class activities. You aren’t expected to fully understand all the relevant material just from the reading and videos, but you should at least be somewhat familiar with the important concepts and terms. What is maybe most important is for you to identify which concepts are causing you difficulty or confusion.

Whether you use the guide or not, you should be well prepared for each lecture. When students aren’t prepared well for lecture, they will often be lost during the frequent in-class activities and can fall further behind. Students that have prepared well will get much more from the in-class activities and will better learn, deepen their understanding and clear up confusion. This usually means they will not have to study as long or as hard for the exams and will score higher because they will remember more and have a deeper understanding of the most important topics.

The reading guide is meant only as a guide and quiz questions can be about any content assigned through reading or videos even if it is not in the reading guide. Thus, it is important to read the entire assignment before trying to answer questions in the guide. You do not need to do the entire reading prior to using the guide, and in fact it is advisable that you go section by section. Read a section, stop, try to summarize it in your own words and identify what you think is important and then look at the guide for only that section.

If there are videos assigned, it is often helpful to watch them before starting the reading.

Don’t try to memorize everything!!!!! Concepts are usually far more important than specific details. Pay attention to the headings and subheadings and how the chapter is structured. The structure of chapter serves as important clues for how concepts are related to each other. The more you understand the relationship between concepts, the easier it will be to learn related concepts and related knowledge.

Your goal should be to try to **understand** what you are reading **NOT** just memorizing definitions and random facts, or associations between terms. Often when students memorize a definition, they can give the exact definition word for word, but then when I ask, “well what does that mean?” they can struggle to give a coherent answer. If you can’t explain what it means in your own words, then you really don’t understand it well enough to remember what truly matters. Some things I will just ask you to know (i.e. memorize) for the quiz, but often that is because they are important topics that we will explore further in lecture and I want you to at least be familiar with the terms. So even if I just say know “this” or “that” it is still better if you spend some amount of time trying to understand it beyond simple memorization, because it will be important for the exam.

**Chapter 1: Biology: Exploring Life**

* 1. **What is life?**

1. You should be able to name and explain at least 4 of the 7 properties of life that are listed in the book.
   1. **Biologists arrange the diversity of life into three domains**
2. You should know the highest level of biological categorization (in other words the most general level) is the **domain** which is higher than **kingdom**.
   1. All living organisms fall into 1 of the 3 domains. Be able to list and/or identify the 3 domains
      1. The domains can be further divided up into Kingdoms.
   2. There are 6 kingdoms, you should be able to list 4 of 6 different kingdoms.
      1. Two domains have only one kingdom (the kingdom names for these are the same as the domain name), the last domain is divided into 4 different kingdoms.
3. At the lowest level (or most specific) you should know that all organisms are given a two part name with the **genus** and **species**, where the genus is the higher category and the species it the most specific.
   1. A **species** can be defined as a group of organisms that can reproduce together to produce more of the same kind of organism.
   2. The points below are just for illustration, you do not need to remember any of them
      1. For example, dogs, wolves and coyotes are part of the genus Canis,
      2. Dogs and wolves are the same species *Canis lupus* but a coyote is a different species.
      3. All dogs, mammals, insects are part of the Kingdom Animalia
   3. Which Domain contains the Kingdom Animalia?
   4. As humans,
      1. which kingdom are we a part of?
      2. Which domain?
      3. What is the 2 word latin name for humans?
         1. Which word corresponds to genus
         2. Which word corresponds to species?
   5. **In life’s hierarchy of organization, new properties emerge at each level**
4. You don’t need to know all 10 levels of in the life’s hierarchy organization, but be able to list the following in order from simplest to most complex:
   1. **populations, cells, ecosystem, tissues, organs, molecules, organism**
   2. Note: simplest to most complex is reverse from the order the book gives, in other words in the order from 10🡪1
   3. **What is Science?**
5. What is Science?
6. What is data?
7. The bulk of the rest of the material in this chapter is important but since I we are covering it in lab, I will not quiz you on it in lecture. It will be useful to know for lab, the lab quiz and the first unit exam (exam 1) though so don’t skip it.
   1. **Hypotheses can be tested using controlled experiments**
8. What is a variable?
9. Again, knowing about dependent, independent variables and controlled experiments is important but I will focus on that more in lab.
10. How did researchers test the effect of camouflage on survival rates in mice?
    1. **Hypotheses can be tested using observational data**
11. How are observational studies different than controlled experiments?
12. What are two different hypotheses about red pandas?
13. What does the data support?