HOW DO I STUDY IN APES?

TIP #1: Review you notes every day!
- Study your notes for 10-20 minutes a day! Even when you don’t have formal assigned homework!
- Psychology research shows that it minimally takes 7 repetitions of something to store it in long-term memory (some material needs up to 21 repetitions). Cramming reduces the repetition cycle.

TIP #2: Reformat your notes in a way that suits you
- Notes are given in packets. This makes notes go fast in class. However, this means you MUST review them another time to improve memory retention.
- So, go home and reprocess your notes. Some ways to do this could be:
  - Rewrite them in a way that you like
  - Create notecards for vocabulary, ideas, concepts discussed in the notes
  - Record the notes in a recorder listen to again at other times
  - Create flow charts, concept maps, visual aids to organize complex ideas

TIP #3: Teach others the material; Get a study friend/group!
- The best way to see if you know material is by teaching it to others. If you can teach it to others, you are at a high level of mastery.
- When teaching others, make sure:
  - You don’t need your notes to teach. Then you haven’t mastered it fully yet.
  - You don’t skip concepts. Then you are missing information.
  - You give the person a copy of the notes you wish to teach from. They can follow along and catch where you might have missed stuff or have incorrect information.

TIP #4: Remember that most course points come from summative assessments (mostly exams)!
- Be aware that most of your points are test-based. You will need to prepare for these well in advance.
- Don’t keep a mindset that a project or non-test oriented materials will “save” your grade. This is not the right mindset to keep.
- Be mentally proactive and prepare to put in your most effort in prepping and completing exams.

TIP #5: Be prepared for ANYTHING to show up on the test!
- ANYTHING from note packets, homework, or in-class work is fair game for the exam.

TIP #6: Learn beyond vocabulary definitions; Instead, learn how concepts connect with each other!
- Students often only student vocabulary words and what they mean. This is considered a low-level tier of understanding.
- In this class, we will expect you to minimally know all the vocabulary. You will be asked to apply concepts to certain examples or analyze and make predictions about the world based on your knowledge of concepts. These are higher order thinking skills than just vocabulary memorization.
- So just don’t memorize words. The words are the tools you will use to explain your larger understanding of an idea or concept.

Final Thought:
DO NOT approach this class like AP social studies classes. I know that many of them go over LOTS of information and people get lulled into the idea of just doing “IDs” to get through the course. This course is about understanding the processes of things. Just learning the terms will not suffice in here. It is similar to learning about the names of things that are under a car hood, but having no idea how they actually connect to run the car. In this class, we want you to know how the car runs. So, this will require more than term memorization and identification from you!
The Difference Between Basic Learning and Expert Learning:

Let’s say we discuss the Carbon Cycle in class. This will show up on the exam. What would a basic learner do and what is an advanced learner going to do to learn the same material?:

- **Basic learning and preparation:**
  - Student studies 1-2 days before the exam.
  - Student just learns the vocabulary words for the carbon cycle and can only repeat the exact definition given in class.
  - Student may not be able to define acronyms or chemical symbols used in the cycle.
  - Student may be able to pick the correct definition of a term from a list of definitions. However, student cannot state the definition in their own words without other help.
  - Student cannot visually draw out the cycle. They can fill in a drawing that I give them, but they cannot create it themselves without help.
  - Student typically is not working with someone else or has not tried to explain the cycle to another person.
  - Student cannot make predictions about the carbon cycle. (For instance, what would happen to the amount of carbon and where would carbon shift to if there were less trees on Earth?)
  - Student cannot explain the larger meaning or impacts of the carbon cycle on global issues (for instance, how does the carbon cycle relate to global climate change?)
  - Student may have flashcards of terms but does not have any other notes on the cycle written out in their own words.

- **Advanced learning and preparation:**
  - Student studies and review notes each day for 10-15 minutes. Then does a little longer review 1-2 days before an exam.
  - Students know vocabulary words in the carbon cycle and can properly use them in sentences when discussing the cycle.
  - Student is able to define all acronyms and chemical symbols and can use the formal terms and symbols interchangeably.
  - Student is able to define a term on their own and in their own words and does not need a list of potential definitions to demonstrate their mastery.
  - Students can draw or visualize the cycle for themselves and for others.
  - Student has worked with others and can explain the cycle to someone else and the other person is not confused and can understand the explanation.
  - Students can make predictions based on the cycle. (For example, student can state where carbon would be stored if trees were reduced on Earth. Student can then predict the consequence of this movement of carbon.)
  - Student can link the carbon cycle to a larger issue at hand. (Student knows that global climate change is the carbon cycle is carbon being stored too frequently in the air compared to other areas. This leads to global climate change).
  - Students rewrite their notes in multiple formats or ways that help them process and learn. They concentrate on large concepts and use the vocabulary from class to help explain those concepts, rather than just focusing on learning definitions.