**2017 AP Biology Group Assignment**

**Human Systems Project and Presentation (\*worth 1 test grade)**

(**30 Points**) Your group will **teach for 20-25 minutes (including a quiz)**, supported by your visual/ graphic/animation heavy PPT (or Prezi) about a Body System, as presented by your textbook and highlighted below. Content should be factual and AP appropriate. One slide should include how your system addresses one of the 4 BIG IDEAS in AP Biology (see opposite side for BIG IDEAS) and your last slide should have works cited. Each person in the group must teach a minimum of 4 minutes. A designated # of slides is not required (will not be on the rubric), however, quality of each slide will be on rubric. Keep in mind you are creating AP Exam review material, but you also want your presentation to be creative, well organized and interesting.

(**30 Points**) You will submit a **1-2 page handout** (minimum) to accompany your lesson. **It must include** (but not limited to): labeled diagram(s) related to your lesson content on it, one strategy for learning something in the content, a 5-8 question multiple choice “quiz” (AP appropriate) & works cited (separate page). Each group will have an additional 5 minutes (on top of the 15-20 minute presentation) to give the quiz. Your group can decide if students will self-grade, peer-grade or your group members do the grading. Just make sure they get feedback as to how they scored, which can be given back to them on Wednesday if your group decides to grade them. Please copy enough handouts for your classmates (~25) & one handout for me BEFORE you arrive to class. On a **2nd handout for me**, you will have your “answers” to the quiz.

**(20 Points)** You will include a form of **art data**. This may be in the form of a model (either ‘physical’ or by computer) relevant to your topic. I am open to other ideas, but it must meet an “art standard” (standards are on the Cobb County & DOE state websites, with links provided on my blog). Be creative here! Think STEAM Symposium…

(**20 points**) **Participation**: Your group must share a folder with me either on Google Drive or Microsoft Office 365 (I really like Office. I think you each have a Wheeler account?). I will check to see who is ACTIVELY participating and who isn’t. You will also “privately” rate your group members’ contributions (form forthcoming). Therefore, each member in the group may receive different grades. **CHAPTER** information, below, is required. Groups must go beyond requirements.

**Chapter 41 Animal Nutrition (Digestion)**

* 4 Main stages of food processing
* Pathway of food through the body, highlighting
  + What food is digested where and by what
  + Essential nutrients
  + Structure and function of specific digestive compartments
* Insulin vs Glucagon

**Chapter 42 Circulation & Gas Exchange**

**-Pathway of O2 and CO2 through the body, highlighting**:

Systemic vs Pulmonary Circulation

Pathway thru heart (Oxy blood from deoxy blood)

Artery, Vein, Capillary

**-Respiration:**

Boyle’s Law and/or Partial pressures of O2 and CO2

Structure and function of specific respiratory compartments

* + Characteristics of respiratory surfaces
  + alveoli

**Chapter 44 Regulating the Internal Environment (Excretion)**

* Various stimuli and responses that maintain homeostasis indicating what osmoregulation is and give a few examples of different animals’ use of it
* The categories of nitrogenous waste, which animal groups produce each and why
* Describe the 4 key functions of excretory systems and show where these occur in the mammalian kidney
* Describe and give examples of different adaptations of the vertebrate kidney to diverse environments

**Chapter 46/47 Reproduction and Development**

* Sexual vs. Asexual Reproduction (Advantages, Disadvantages, examples)
* Triggers to Reproduction and Different Patterns (with examples)
* How oogenesis and spermatogenesis differ
* The events that occur after fertilization (what happens when a sperm contacts an egg)
* The difference between totipotent, pleuropotent, and multipotent cells (and examples of each)

**Chapter 49/50 Nervous Systems and Sensory (\*I will do Chapter 48- Neurons)**

**Chapter 49**

* Cephalization and its advantages
* Components of a reflex arc and how they work (This has been on an AP test)
* Structure and function of brain and its components (basic)
* CNS vs PNS (basic)

**Chapter 50- FOCUS MORE ON THIS CHAPTER**

* 4 basic functions of sensory pathways
* Location, function, and examples of several types of sensory receptors
* Mechanism (including main structures) of EITHER hearing, taste, smell, or vision
* Comparison of different animals’ senses (including specific examples)

***\*NOTE***- I will ‘lecture’ the Chapters related to systems from: Ch 40, 43, 45, 48, 51, because they have been *heavily emphasized* on recent AP Bio Exams.

\*\***Due date:** **Monday, 11/27**. We will draw from a hat and see which groups present on which days. (3/day for 2 days). Most info from the chapters you present will not be on the Unit test, but it’s likely you may need this info for the AP Exam, so everyone should be attentive during presentations!

**BIG IDEAS:**

The key concepts and related content that define the revised AP Biology course and

exam are organized around four underlying principles called the *big ideas*, which are as

follows:

Big Idea 1: The process of evolution drives the diversity and unity of life.

Big Idea 2: Biological systems utilize free energy and molecular building blocks to

grow, to reproduce, and to maintain dynamic homeostasis.

Big Idea 3: Living systems store, retrieve, transmit, and respond to information

essential to life processes.

Big Idea 4: Biological systems interact, and these systems and their interactions

possess complex properties.

These four big ideas will be referred to as 1- **evolution**; 2- **cellular processes: energy and**

**Communication**; 3- **genetics and information transfer**; and 4- **interactions**, respectively, for

the sake of brevity.

Credit for some of the content of this page goes to the following web site: <http://www.africangreyparrott.com/apbiologyspring.html>