AP Biology Pre-Discussion Questions: Evolution, Lesson 4- Measuring Evolution

Instructions:

- Open the presentation.
- Interact with it.
- Answer the "Questions to answer".
- Make sure you understand the "Things you should make sure you understand".
- Feel free to view the "Supplementary Resources".
- Write down any questions that you have about the material.

Topic Presentation:

click here

Textbook Reading:

- Chapter 23.1 - 23.2 (pg 468 - 475)

Supplementary Resources:

"Crash Course: Biology" Videos:

Population Genetics- When Darwin Met Mendel: Biology #18

Videos By Paul Anderson:

"Hardy-Weinberg Equilibrium"
"Solving Hardy-Weinberg Problems"

Questions to answer:

1. How is variation generated in a population? How is it maintained?
2. How is it possible that individuals with two different genotypes can have the same

phenotype?

3. Explain how each of the following features of a (hypothetical) population in Hardy-Weinberg Equilibrium leads to that population not evolving over time:
    a. large population size
    b. random mating
    c. no immigration/emigration
    d. no net mutation rate
    e. a constant environment
4. Answer questions A-C in the "Solving HW Problems" section of the presentation.
5. If no real population of organisms is in Hardy-Weinberg Equilibrium, why is it a useful tool to study the effects of evolution?

Things you should make sure you understand:

(feel free to ask questions about them in class)

- The meanings and relationships of all of the following terms:
    - alleles
    - genes
    - gene pool
    - genotype
    - phenotype
    - homozygous
    - heterozygous
- How violation of any of the conditions of HW equilibrium would affect the evolution of a population.