Driving Question: How can I demonstrate the interconnected nature of biological concepts?

**In order to demonstrate full content mastery,** you will give a presentation that will show the connections between all 4 second semester units.

When it is your assigned POL time slot you will….

* **Pull 4 vocabulary words from an envelope** 
  + These words will be pulled from our semester 2 units:
    - Cell Function
    - Inheritance
    - Natural Selection
    - Ecology
* **Take 2 minutes of “think time”** in order to map out the vocabulary words on the board and think of the best ways to connect the words together.
* **Go through a 5 minute presentation / lecture that incorporates all four vocabulary words**
  + You will demonstrate how you know the words & concepts connect to one another using the assigned words, in class activities,
  + You may use the whiteboard, whiteboard markers, images, sentences, charts, or other diagrams that help you explain the concepts thoroughly (bonus points if you bring your own map or poster board **(no powerpoints!)**
  + Common misconceptions are always a great way to begin to connect the concepts together, but sometimes a more compelling POL comes from when you talk about ***your own misconceptions and the “A-ha” moments that came along the way.*** 
    - Be sure to connect to specific activities we have done in class that helped you understand the content or the relationship between the concepts more clearly.

**If you feel like this POL is not going to be enough to raise your grade to your liking, you may take an optional final exam in addition to your POL**. This exam will replace your mastery scores in each of our units (rather than just count for just the POL category). The exam will be multiple choice and cover all units of study in semester 2. *If you currently have an “I” this exam will be mandatory.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score**  Metric | **1** | **2** | **3** | **4** |
| SEMESTER 2 BIO POL | * Uses incorrect vocabulary words or definitions * Does not create any connection between words or concepts * Demonstrates little or no understanding of concept and does not explain thinking * Does not make connections to in class activities * Does not use the whiteboard or other materials in order to convey content understanding. | * 2 Vocabulary words or concepts were presented incorrectly * Student creates a linear progression of ideas * Demonstrates a surface level understanding of concept * Does not connect to in class activities * Merely wrote the assigned words on the board | * One vocabulary word was incorrect, but their analysis of the concept of the unit is accurate. * Only makes connections between some ideas or concepts * Demonstrates a high level of understanding, but does not present on misconceptions or aha moments. * Makes a connection to one in class activity. * Used the whiteboard to help explain their ideas | * Uses correct and thorough definitions of vocabulary. * Creates more than one connection between concepts. Ideas are interconnected and can circle back to one another * Demonstrates a full understanding of the concepts and explains thinking thoroughly. Shows how their thinking has changed over time, and provides evidence of misconceptions, or certain a-ha moments using connections to curriculum, in class learning, or interdisciplinary projects. * Brought extra material that helped them explain their thoughts and prove their content mastery |

Below you will find a list of the relevant vocabulary words split up by UNIT.

**CELL FUNCTION**

**NATURAL SELECTION + EVOLUTION**

Descent with modification

Variation

Competition

Speciation

Heritability

Isolation

Variation

Overproduction

Natural selection

Evolution

Gene flow

Adaptation

Genetic Drift

Transcription

Translation

DNA

RNA

Mitosis

Codon

Meiosis

Protein

Crossing over

Amino Acid

Sex Chromosome

Cell Division

Protein Synthesis

**GENETICS**

Chromosomes

Genes

Nucleotide

Mutation

**ECOLOGY**

Trophic Levels

Carrying Capacity

Logistic Growth

Exponential Growth

Biotic Factors

Abiotic Factors

Birth/Death Rate

Heterozygous

Homozygous

Genotype

Phenotype

Codominance

Dominant

Recessive

Incomplete Dominance

Autosome

Dihybrid Crosses

Punnett Squares

Sex Linked Inheritance

Autosomal Dominant Disorders