**Unit 3: Cells, Classification and Membrane Function**

(this will be modified throughout the unit)

1. I can define the term abiogenesis and describe the link between biological macromolecules and cells.
2. I can list the four main abiogenesis hypotheses and explain how either of them could be plausible explanations for the start of life on Earth.
3. I can state the three parts of the cell theory and use it to refute the idea of spontaneous generation.
4. I can list the various levels of classification in order from most inclusive to most specific or vice versa.
5. I can name the 3 domains and 5 kingdoms and the characteristics that would place an organism into those categories.
6. I can compare and contrast prokaryotic and eukaryotic cells (similarities and differences)
7. I can distinguish prokaryotic cells from eukaryotic cells based on diagrams and descriptions.
8. I can compare and contrast the form and functions of cell organelles and structures that were discussed in class.
9. I can explain the theory of endosymbiosis.
10. I can describe the structure of the cell membrane.
11. I can relate cell size and movement across the membrane to the concept of surface area to volume ratio.
12. I can describe how different substances exit or enter a cell using the molecular characteristics of those substances and the roles of passive and active transport.
13. I can use a microscope to focus on and identify cells from organisms in different kingdoms.

Earned Honors students will be asked to apply the concepts from above in more challenging ways. Examples could include classifying an organism into a domain and kingdom based on their characteristics, explaining why ideal surface area to volume ratios differ for different types of cells, predicting how the loss of an organelle would affect a cell and explain why specialized cell types only have specific organelles based on the functions of those organelles, providing evidence in support of the theory of endosymbiosis, explaining how different molecular components can affect the integrity of the cell membrane or how the different types of proteins in the cell membrane regulate the entrance and exit of different types of substances.