Biology Essential Standards:

L1: Organisms are organized on a cellular basis and have a finite life span.

- Ask questions and/or make predictions based on observations and evidence to demonstrate how cellular organization, structure, and function allow organisms to maintain homeostasis.
- Construct an explanation for how cellular division (mitosis) is the process by which organisms grow and maintain complex, interconnected systems
- Obtain, evaluate, and communicate the ethical, social, economic and/or political implications of the detection and treatment of abnormal cell function.

L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms & L4: The unity and diversity of organisms, living and extinct, is the result of evolution.

- Obtain, evaluate, and communicate about the positive and negative ethical, social, economic, and political implications of human activity on the biodiversity of an ecosystem
- Develop and use models that show how changes in the transfer of matter and energy within an ecosystem and interactions between species may affect organisms and their environment.
- Obtain, evaluate, and communicate data showing the relationship of photosynthesis and cellular respiration; flow of energy and cycling of matter

– L3: Genetic information is passed down from one generation of organisms to another.

- Construct an explanation of how the process of sexual reproduction contributes to genetic variation
- Obtain, evaluate, and communicate information about the causes and implications of DNA mutation.

- Engage in argument from evidence regarding the ethical, social, economic, and/or political implications of a current genetic technology

L4: The unity and diversity of organisms, living and extinct, is the result of evolution.

- Obtain, evaluate, and communicate about the positive and negative ethical, social, economic, and political implications of human activity on the biodiversity of an ecosystem
- Obtain, evaluate, and communicate evidence that describes how changes in frequency of inherited traits in a population can lead to biological diversity.
- Gather, evaluate, and communicate multiple lines of empirical evidence to explain the mechanisms of biological evolution