9-12 Life Science
Learning Targets

(Analysis) 9-12.L.1.1. Students are able to relate cellular functions and processes to specialized structures within cells.

I can tell in words or numbers the connections between (relate):
- transport of materials and the cell membrane, Golgi apparatus and vacuole
- acquisition of energy and chloroplasts
- use of energy and mitochondria
- synthesis of proteins and endoplasmic reticulum
- storage and transfer of genetic materials and the nucleus.

(Analysis) 9-12.L.1.2. Students are able to classify organisms using characteristics and evolutionary relationships of major taxa.

I can assign (classify) organisms to categories of kingdoms and phyla (major taxa) using
- cell structure, methods of energy acquisition, and anatomical structures (characteristics)
- physical and genetic similarities (evolutionary relationships).

(Analysis) 9-12.L.1.3. Students are able to identify structures and function relationships within major taxa.

I can select from given information (identify) relationships between different parts of an organism (structures) and specific jobs of the parts (function) within kingdoms and phyla (major taxa).

(Application) 9-12.L.2.1. Students are able to predict inheritance patterns using a single allele.

I can use information to make a best guess (predict) about simple dominance, codominance, sex-linked traits (inheritance patterns) using contrasting forms of a gene (alleles).

(Synthesis) 9-12.L.2.2. Students are able to describe how genetic recombination, mutations, and natural selection lead to adaptations, evolution, extinction, or the emergence of new species.

I can tell in words or numbers (describe) how
- crossover, independent assortment and random fertilization (genetic recombination), and/or
- change in the DNA sequence that alters a trait (mutations), and/or
- survival and reproduction of organisms with favorable variations (natural selection)

all may lead to
- characteristics that improve the chances for survival (adaptations),
- changes in a species over time (evolution),
- elimination of an entire species (extinction),

- and development of a news species (emergence).

(Comprehension) 9-12.L.3.1. Students are able to identify factors that cause changes in stability of populations, communities, and ecosystems.

I can select from (identify) weather, climate, resources and human activity (factors) that cause changes in stability of
- groups of organisms of the same species in the same area (populations),
- populations living and interacting in the same area (communities), and
- the organization and interaction of communities with their physical environment (ecosystems).