

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

Web Level: 2

Bloom: Analysis

Verbs Defined:

Relate – tell in words or numbers the connections between

Key Terms Defined:

Cellular functions and processes – transport of materials, acquisition and use of energy, synthesis of proteins, storage and transfer of genetic materials and cell life cycles

Specialized structure – cell membrane, chloroplast, mitochondria, endoplasmic reticulum, Golgi apparatus, vacuole, nucleus

Teacher Speak:

Students will be able to relate (tell in words or numbers the connections between) cellular functions and processes (transport of materials, acquisition and use of energy, synthesis of proteins, storage and transfer of genetic materials, and cell life cycles) to specialized structures (cell membrane, chloroplast, mitochondria, endoplasmic reticulum, Golgi apparatus, vacuole, nucleus) within the cell.

Student Speak:

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.

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

Webb Level: 2

Bloom: Analysis

Verbs Defined:

Classify – assign to categories

Key Terms Defined:

Characteristics – cell structure, method of energy acquisition, and anatomical structure

Evolutionary relationships – physical and genetic similarities

Major taxa – kingdoms and phyla

Teacher Speak:

Students will be able to classify (assign to categories) organisms using characteristics (cell structure, method of energy acquisition, and anatomical structure) and evolutionary relationships (physical and genetic similarities) of major taxa (kingdoms and phyla).

Student Speak:

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).

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

Web Level: 1

Bloom: Analysis

Verbs Defined:

Identify – select from given information

Key Terms Defined:

Structures – different parts of an organism

Function – a specific job of parts

Major taxa – kingdoms and phyla

Teacher Speak:

Students will be able to identify (select from given information) structures (different parts of an organism) and functions (specific job of parts) relationships within major taxa (kingdom and/or phylum).

Student Speak:

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).

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

Web Level: 2

Bloom: Application

Verbs Defined:

Predict – to use information to make a best guess

Key Terms Defined:

Inheritance patterns –simple dominance, co-dominance and sex-linked genes

Allele – contrasting forms of a gene

Teacher Speak :

Students are able to predict (use information to make a best guess) inheritance patterns (simple dominance, co-dominance and sex-linked traits) using alleles (contrasting forms of a gene).

Student Speak:

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

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.

Web Level: 2

Bloom: Synthesis

Verbs Defined:

Describe – tell in words or numbers

Key Terms Defined:

Genetic recombination – crossover, independent assortment and random fertilization

Mutations – change in the DNA sequence that alters a trait

Natural selection – survival and reproduction of organisms with favorable variations

Adaptations – characteristics that improve the chances for survival
Evolution – change in a species over time
Extinction – the elimination of an entire species
emergence – development

Teacher Speak:

Students will be able to describe (tell in words or numbers) how genetic recombination (crossover, independent assortment and random fertilization) mutations (change in the DNA sequence that alters a trait), and natural selection (survival and reproduction of organisms with favorable variations) lead to adaptations (characteristics that improve the chances for survival), evolution (change in a species over time), extinction (the elimination of an entire species), or the emergence (development) of a new species.

Student Speak:

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).

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

Web Level: 2

Bloom: Comprehension

Verbs Defined:

Identify – select from

Key Terms Defined:

Factors – weather, climate, resources and human activity

Populations – groups of organisms of the same species in the same area

Communities – populations living and interacting in the same area

Ecosystems – the organization and interaction of communities with their physical environment

Teacher Speak:

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

Student Speak:

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).