

STAAR Biology Assessment

Reporting Category 1 : Cell Structure and Function

The student will demonstrate an understanding that cells are the basic unit of structure and function of living things.

- (B.4) Science concepts. The student knows that cells are the basic structures of all living things with specialized parts that perform specific functions and that viruses are different from cells. The student is expected to
- (A) compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity; Supporting Standard
 - (B) investigate and explain cellular processes, including homeostasis and transport of molecules; and Readiness Standard
 - (C) compare the structures of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza. Readiness Standard

(B.5) , T T (C)

Reporting Category 3: Biological Evolution and Classification

The student will demonstrate an understanding of the theory of biological evolution and the hierarchical classification of organisms.

- (B.7) Science concepts. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life. The student is expected to
- (A) analyze and evaluate how evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, including anatomical, molecular, and developmental; Readiness Standard
 - (B) examine scientific explanations of abrupt appearance and stasis in the fossil record; Supporting Standard
 - (C) analyze and evaluate how natural selection produces change in populations, not individuals; Supporting Standard
 - (D) analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success; Supporting Standard
 - (E)

Reporting Category 4 : Biological Processes and Systems

The student will demonstrate an understanding of metabolic processes, energy conversions, and interactions and functions of systems in organisms.

(B.9) Science concepts. The student kn

Reporting Category 5: Interdependence within Environmental Systems

The student will demonstrate an understanding of the interdependence and interactions that occur within an environmental system and their significance.

(B.11) Science concepts. The student knows that biological systems work to achieve and maintain balance. The student is expected to

- (A) summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems; and Supporting Standard
- (B) describe how events and processes that occur during ecological succession can change populations and species diversity. Readiness Standard

(B.12) Science concepts. The student knows that interdependence and interactions occur within an environmental system. The student is expected to

- (A) interpret relationships, including predation, parasitism, commensalism, mutualism, and competition, among organisms; Readiness Standard
- (B) compare variations and adaptations of organisms in different ecosystems; Supporting Standard
- (C)

- (B.3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to
- (A) analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student;
 - (B) communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials;
 - (C) draw inferences based on data related to promotional materials for products and services;
 - (D) evaluate the impact of scientific research on society and the environment;
 - (E) evaluate models according to their limitations in representing biological objects or events; and
 - (F) research and describe the history of biology and contributions of scientists.