

Year at a Glance Biology APA 2020-2021

Readiness, Supporting, Process TEKS



1 st Grading Period	2 nd Grading Period
<p>Classroom Procedures, Introductions, Get to Know You Activities, Safety Protocols, Capturing Kids Hearts Activities</p> <p>Review 8th Grade TEKS related to Ecology</p> <ul style="list-style-type: none"> Abiotic and biotic factors needed by organism and populations in an ecosystem (TEKS 8.11A) Ways organisms and populations compete for the abiotic and biotic factors (TEKS 8.11 A) Effects of short-term and long-term environmental changes affect organisms and traits in populations (TEKS 8.11B) <p>Energy Transformation in the Ecosystem</p> <ul style="list-style-type: none"> Energy and matter flow in food chains, webs, pyramid levels (TEKS B.12C) Effects on ecosystem stability based on changes in food webs (TEKS B.12E) Aerobic vs anaerobic respiration (TEKS B.9B) Matter and energy of reactants and products of photosynthesis and cell respiration in terms of energy, energy conversion, and matter (TEKS B.9B) Functions of biomolecules (TEKS B.9A) Carbon cycle (TEKS B.12D) Pollution/Natural causes of environmental change (TEKS B.12E) Ecological Succession (TEKS B.11B) Symbiotic relationships, predation, competition (TEKS B.12A) <p>Plants</p> <ul style="list-style-type: none"> Transportation within plants, including vascular tissues (TEKS B.10B) Plant Tropisms (TEKS B.10B) Plant Hormones (TEKS B.10B) Functions of lipids and proteins as related to plants (Application of TEKS B.9A) Plant Reproduction - Pollination (TEKS B.10B) <p>Formative Assessment (Covers ecology and plants)</p>	<p>Homeostasis in The Cell</p> <ul style="list-style-type: none"> Cell theory/ Scientists- Schleiden, Schwann, Virchow, Hooke, Leeuwenhoek, Janssen (TEKS B.3F) Prokaryotic vs Eukaryotic (organelles and functions, mode of reproduction, unicellular/multicellular, autotrophic/heterotrophic, etc.) (TEKS B.4A) Endosymbiotic Theory (TEKS B.4A) Homeostasis - Movement of Materials in cells passive and active transport mechanisms in animals and plant cells (TEKS B.4B) <ul style="list-style-type: none"> Functions of lipids and proteins as it relates to movement of materials in cells (Application of TEKS B.9A) Levels of organization: molecules → organelles → cells (TEKS B.10C) <p>Homeostasis in the Ecosystem: Effects of Bacteria/Viruses</p> <ul style="list-style-type: none"> Quick Review of structure of prokaryotic cell (TEKS B.4A) Structure of viruses (TEKS B.4C) Role of Viruses (TEKS B.4C) Viral reproduction (lytic and lysogenic) (TEKS B.4C) Role of bacteria in both maintaining and disrupting the health of organisms and ecosystems, including the nitrogen cycle (TEKS B.11A, B.12D) Immune response to viruses and bacteria (TEKS B.10A) Integumentary system role in defense of injury and infection (TEKS B.10A) <p>Homeostasis in the Body</p> <ul style="list-style-type: none"> Levels of organization: cells → tissues → organs → systems → organism (TEKS B.10C) Compare biomolecule functions: lipids, proteins, and carbohydrates (TEKS B.9A) Food labels and advertisements in respect to biomolecule functions and energy conversion (TEKS B.9A) Investigate role of enzymes (TEKS B.9C) Interactions among systems to perform the following functions: <ul style="list-style-type: none"> Homeostasis/regulation: Passive & active transport in the circulatory, respiratory, and excretory systems (TEKS B.4B , B.10A) Human response to stimuli – nervous, endocrine, and muscular systems (TEKS B.10A) Nutrient absorption – digestive, muscular, and circulatory systems (TEKS B.10A) <p>District Semester Exam</p>

3 rd Grading Period	4 th Grading Period
<p>Growth and Development in a Cell: DNA / Cell Cycle</p> <ul style="list-style-type: none"> • Function of nucleic acids (Review of TEKS B.9A) • DNA Structure (TEKS B.6A) – use model (TEKS B.3E) • Examine explanations for origins of DNA (TEKS B.6A) • Commonality of genetic code (TEKS B.6B) • DNA replication (TEKS B.5A) • Review the role of enzymes related to DNA replication (TEKS B.9C) • Stages and importance of cell cycle: G₁, S, G₂, Mitosis (TEKS B.5A) • Disruptions to cell cycle: one example is cancer (TEKS B.5C) • Scientists- Watson, Crick, Franklin, (TEKS B.3F) <p>Growth and Development in the Body:</p> <p>Meiosis/Reproduction</p> <ul style="list-style-type: none"> • Significance of Meiosis (TEKS B.6G) • Cell differentiation (TEKS B.5B) • Human Reproduction - Specialized tissues & functions (TEKS B.10A) • Interactions among systems to perform the following functions: Reproduction: Reproductive, endocrine, nervous, muscular, and circulatory systems (TEKS B.4B, B.10A) <p>Heredity in the Cell: Protein Synthesis, Mutations & Genetics</p> <ul style="list-style-type: none"> • Purpose and process of transcription and translation (TEKS B.6C) • Review function of proteins (Review of TEKS B.9A) • Review the role of enzymes related to transcription and translation (TEKS B.9C) • Mutations (TEKS B.6E) • DNA and environmental factors that affect cell differentiation (TEKS B.5B) • Gene expression (TEKS B.6D) • Monohybrid/dihybrid Mendelian crosses and non-Mendelian crosses including sex-linked traits, co-dominance, incomplete dominance (TEKS B.6F) • Scientists- Avery, Hershey/Chase, Mendel (TEKS B.3F) <p>Formative Assessment in last week of grading period</p>	<p>Classification</p> <ul style="list-style-type: none"> • Define taxonomy and why it is important (TEKS B.8A) • Categorize organisms based on similarities and differences. (TEKS B.8B) <ul style="list-style-type: none"> • Use cladograms • Characteristics of each kingdom (TEKS B.8C) • Compare the functions of 4 biomolecules and how all of them are needed for living things (TEKS B.9A) • Adaptations and variations of organisms w/in ecosystems (TEKS B.12B) • Electrophoresis – use equipment to determine ancestry/relationships (TEKS B.2F) <p>Evolution</p> <ul style="list-style-type: none"> • Common ancestry by fossil record, biogeography, homologies: anatomical, structural, developmental (TEKS B.7A) • Cladogram: stasis, gradualism, punctuated equilibrium (TEKS B.7B) • Elements of Natural Selection (TEKS B.7D) • Natural Selection causes change in populations (TEKS B.7C) • How adaptations and diversity affect Natural Selection (TEKS B.7E) • Effects of Evolutionary mechanisms: genetic drift, genetic flow, mutations, recombination (TEKS B.7F) • Scientists – Darwin, Lamarck, Wallace (TEKS B.3F) <p>STAAR EOC Review</p> <p>STAAR EOC testing</p> <p>Teacher Choice – Project, dissection, etc.</p> <p>Review/Semester Exam/Final Project</p>

Process standards are taught throughout the year.