

Year at a Glance Biology I PAP 2019-2020

Readiness, Supporting, Process TEKS



| 1 st 9 Weeks | 2 nd 9 Weeks |
|--|---|
| <p>Classroom Procedures, Introductions, Lab Safety Contracts, Capturing Kids Hearts Activities</p> <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) <ul style="list-style-type: none"> • Functions of carbohydrates: Glucose is a carbohydrate (Front loading for 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 (Front loading for TEKS B.9A) • Plant Reproduction – Pollination, Sporophyte vs Gametophyte (TEKS B.10B) <p>Homeostasis in The Cell (start)</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) <p>CBA (Covers ecology and plants)</p> | <p>Homeostasis in The Cell (continue)</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 (Front loading for 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>Finals</p> |

| 3 rd 9 Weeks | 4 th 9 Weeks |
|---|---|
| <p>Growth and Development in a Cell: DNA / Cell Cycle</p> <ul style="list-style-type: none"> • Function of nucleic acids (Front loading for 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: 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 (Front loading for 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>CBA</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>Review</p> <p>Finals</p> |