|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Science – Grade 11 Life Sciences** | | | | |
| **SC.HS.6 Structure and Function** | | **Access Points** | | |
| **Standard / Indicator** | **Extension** |
| SC.HS.6.1 Gather, analyze, and communicate evidence of the relationship between structure and function in living things. |  | **A** | **B** | **C** |
| SC.HS.6.1.B **Develop and use a model** to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. Assessment does not include interactions and functions at the molecular or chemical reaction level. | Use a model to identify different organs in the human body and describe how they work to support bodily functions.  (Assessment Boundary: Limited to either circulatory, respiratory, or digestive systems.) | Identify an organ system and its functions. | Recognize an organ system. | Recognize major human organs. |
| SC.HS.6.1.C **Plan and conduct an investigation** to provide evidence that feedback mechanisms maintain homeostasis. Assessment does not include the cellular processes involved in the feedback mechanism. | Provide evidence about how an organism will respond when exposed to changing conditions. | Provide evidence about how an organism will respond to changes in its environment (e.g., changes in temperature, varying water levels). | Identify that organisms change in response to their environment. | Recognize that organisms need water when they feel thirsty and food when they feel hungry. |
| SC.HS.6.1.D **Use a model** to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. Assessment does not include specific gene control mechanisms or rote memorization of the steps of mitosis. | Use a model to explain that the human body is made of many types of cells and that cells divide. | Use a model to explain why cells divide (e.g., to replace dead or damaged cells, to grow, to produce different cell types). | Identify that cells divide through a process. | Recognize that the body is made of cells. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Science – Grade 11 Life Sciences** | | | | |
| **SC.HS.7 Interdependent Relationships in Ecosystems** | | **Access Points** | | |
| **Standard / Indicator** | **Extension** |
| SC.HS.7.2 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems. |  | **A** | **B** | **C** |
| SC.HS.7.2.C **Evaluate the claims, evidence, and reasoning** that the interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. | Evaluate a claim about living or nonliving factors in an environment and how those factors affect a population. | Predict how an environmental change will influence a population. | Recognize that changes in an environment will cause changes in the number of organisms (plants or animals) in an environment. | Recognize that, to survive, plants and animals need specific factors in an environment. |
| SC.HS.7.2.D **Evaluate the evidence** for the role of group behavior on individual and species’ chances to survive and reproduce. | Describe how individual and group behaviors in species impact the chances for survival and reproduction. | Use evidence to describe how individual and group behaviors affect survival and reproduction. | Recognize individual and group behaviors that help with survival and reproduction. | Recognize individual behaviors that ensure survival and reproduction. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Science – Grade 11 Life Sciences** | | | | |
| **SC.HS.8 Matter and Energy in Organisms and Ecosystems** | | **Access Points** | | |
| **Standard / Indicator** | **Extension** |
| SC.HS.8.3 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems. |  | **A** | **B** | **C** |
| SC.HS.8.3.A **Use a model** to illustrate how photosynthesis transforms light energy into stored chemical energy. Assessment does not include specific biochemical steps. | Use a model to explain how plants change light energy into chemical energy.    Assessment does not include the word photosynthesis. | Use a model to explain how plants change light energy into chemical energy. | Recognize that water, sunlight, and carbon dioxide are used by plants to make food and to grow. | Recognize that plants use the sun to make food. |
| SC.HS.8.3.C **Use a model** to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules are broken and bonds in new compounds are formed resulting in a net transfer of energy. Assessment should not include identification of the steps or specific processes involved in cellular respiration. | Use a model to explain that different types of food can be used to produce energy for survival.  Note: This does not include the cellular level. | Use a model to explain that different types of foods can be used to produce energy for survival.  (Students are not expected to know the molecular structures of sugars, fats, and proteins.) | Recognize that when living things eat, food is broken down and energy is produced. | Recognize that living things need food for survival. |
| SC.HS.8.3.D **Construct and revise an explanation** based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions. Assessment does not include the specific chemical processes of either aerobic or anaerobic respiration. | Use models to show the cycling of matter among organisms within an ecosystem. | Use a model to complete a food chain. | Identify the correct order of a simple food chain. | Recognize the correct order in a simple food chain (from producer to consumer). |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Science – Grade 11 Life Sciences** | | | | |
| **SC.HS.9 Heredity: Inheritance and Variation of Traits** | | **Access Points** | | |
| **Standard / Indicator** | **Extension** |
| SC.HS.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits. |  | **A** | **B** | **C** |
| SC.HS.9.4.A. **Develop and use a model** to explain the relationships between the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. Assessment does not include the phases of meiosis or the molecular mechanism of specific steps in the process. | Construct an explanation of how some traits are inherited and some are acquired. | Construct an explanation of how some traits are inherited and some are acquired. | Recognize traits acquired from the environment. | Recognize inherited traits. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Science – Grade 11 Life Sciences** | | | | |
| **SC.HS.10 Biological Evolution** | | **Access Points** | | |
| **Standard / Indicator** | **Extension** |
| SC.HS.10.5 Gather, analyze, and communicate evidence of biological evolution. |  | **A** | **B** | **C** |
| SC.HS.10.5.B **Construct an explanation** based on evidence that natural selection primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment. Assessment does not include other mechanisms of evolution, such as genetic drift, gene flow through migration, and co-evolution. | Demonstrate how a population can adapt or change to survive when the environment changes. | Demonstrate how a population can adapt or change to survive when the environment changes. | Given an animal and an environment, identify the traits of that animal that make it best suited for that environment. | Match an animal to its most suitable environment. |
| SC.HS.10.5.E **Evaluate the evidence** supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species. | Use evidence to support a claim of how a change in the environment can cause a change in a population. | Identify environmental conditions that increase or decrease populations in an environment. | Identify conditions that would decrease populations in an environment. | Recognize a healthy population in an environment. |