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| **Science – Grade 8 Life Sciences** |
| **SC.8.9 Heredity: Inheritance and Variation of Traits** | **Access Points** |
| **Standard / Indicator** | **Extension** |
| SC.8.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits. |   | **A** | **B** | **C** |
| SC.8.9.4.A Develop and use a modelto describe why structural changes to genes (mutations) may result in harmful, beneficial, or neutral effects to structure and function of organisms. Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations. | Use models to observe that changes in the physical traits of organisms of the same species (caused by genetic mutation) may or may not affect their ability to survive. | Use models to identify changes in the physical traits of individuals of the same species and describe how changes may affect an organism’s ability to survive or not. | Using a model of a typical organism and a changed organism of the same species; identify the physical trait that changed or whether the change is helpful or harmful. | Recognize the changed organism when given a model of a typical organism and a changed organism of the same species.  |
| SC.8.9.4.B Gather and synthesize informationabout technologies that have changed the way humans influence inheritance of desired traits in organisms. | Use information to describe ways that humans have influenced the physical traits of plants and animals. | Describe physical traits that may be desirable or undesirable and identify a way humans select that trait for future generations of offspring. | Identify which individual would most likely produce offspring with a given desired trait. | Recognize an organism that has a trait that fits a given need. |

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| **Science – Grade 8 Life Sciences** |
| **SC.8.10 Natural Selection and Adaptations** | **Access Points** |
| **Standard / Indicator** | **Extension** |
| SC.8.10.5 Gather, analyze, and communicate evidence of natural selection and adaptations. |   | **A** | **B** | **C** |
| SC.8.10.5.A Analyze and interpret datafor patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural lawsoperate today as in the past. Assessment does not include the names of individual species or geological eras in the fossil record. | Use data and evidence in Earth’s fossil record (fossils found in rock or ice layers) to investigate changes in Earth’s environments and life forms over time. | Use evidence of the fossil record (types of organisms) to identify that different environments and organisms existed at a given location over time. | Identify one or more fossils that would be found in an environment, or given one or more fossils, identify an environment in which the fossil or fossils could be found. | Recognize a fossil in its environment. |
| SC.8.10.5.B Apply scientific ideas to construct an explanationfor the anatomical similarities and differences among and between modern and fossil organisms to infer evolutionary relationships. | Use models and information about the physical traits of fossilized organisms and modern organisms to investigate the evolutionary relationships between organisms. | Describe one or more similarities or differences that show modern organisms are related to or unrelated to fossilized organisms. | Identify a physical trait of a modern organism that is most similar to a fossilized organism. | Recognize an organism that could have formed a given fossil. |
| SC.8.10.5.C Construct an explanationbased on evidence that describes how genetic variations of traits in a population increase some individuals’ probability of surviving and reproducing in a specific environment. | Use evidence to identify physical traits of organisms that help them survive and reproduce in a specific environment. | Identify one or more physical traits of an organism or organisms that will be helpful or harmful to the survival and/or reproduction of the organism or organisms in a specific environment. | Identify one or more physical traits that would help organisms survive and reproduce in a specific environment. | Recognize the organism that would best survive in a specific environment. |
| SC.8.10.5.D Use mathematical representationsto support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. Assessment does not include Hardy Weinberg calculations. | Use data to explain that individual organisms with a beneficial physical trait are better able to survive and reproduce than individuals without the trait, which increases the number of individuals with that trait.  | Use data to determine whether the number of individuals with or without a specific physical trait will increase or decrease within a population over time. | Identify that the number of individuals with a beneficial physical trait will increase within a population over time. | Recognize whether a given organism has a specific physical trait. |