New York Science

Biology Living Environment

Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. HS-LS1-1	**HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.** HS-LS1-1
Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. HS-LS1-2	**HS-LS1-2 . Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.** HS-LS1-2
Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis HS-LS1-3	**HS-LS1-3 . Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis** HS-LS1-3
Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy. HS-LS1-5	**HS-LS1-5. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.** HS-LS1-5
Use a model to illustrate that aerobic cellular respiration is a chemical process whereby the bo an are broken and the	**HS-LS1-7 . Use a model to illustrate that aerobic cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.** HS-LS1-7

Skip to main content

bonds in new compounds are formed resulting in a net transfer of energy. HS-LS1-7		
Use mathematical and/or computational representations to support explanations of biotic and abiotic factors that affect carrying capacity of ecosystems at different scales. HS-LS2-1	HS-LS2-1 .	Use mathematical and/or computational representations to support explanations of biotic and abiotic factors that affect carrying capacity of ecosystems at different scales. HS-LS2-1
Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales. HS-LS2-2	HS-LS2-2 .	Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales. HS-LS2-2
Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. HS-LS2-6	HS-LS2-6 .	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. HS-LS2-6
Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.* HS-LS2-7	HS-LS2-7 .	Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.* HS-LS2-7
Ev for be	LS2-8 .	Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce HS-LS2-8

Skip to main content

and species' chances to survive and reproduce HS-LS2-8	
Use a model to illustrate cellular division (mitosis) and differentiation. HS-LS1-4	**HS-LS1-4 .** Use a model to illustrate cellular division (mitosis) and differentiation. HS-LS1-4
Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring HS-LS3-1	**HS-LS3-1 .** Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring HS-LS3-1
Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, (3) mutations caused by environmental factors and/or (4) genetic engineering HS-LS3-2	**HS-LS3-2 .** Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, (3) mutations caused by environmental factors and/or (4) genetic engineering HS-LS3-2
Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population. HS-LS3-3	**HS-LS3-3 .** Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population. HS-LS3-3
Use models to illustrate how human reproduction and development maintains continuity of life. HS-LS1-8	**HS-LS1-8 .** Use models to illustrate how human reproduction and development maintains continuity of life. HS-LS1-8

Skip to main content

Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence HS-LS4-1	**HS-LS4-1 . Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence** HS-LS4-1
Construct an explanation based on evidence that the process of evolution 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 sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment. HS-LS4-2	**HS-LS4-2 . Construct an explanation based on evidence that the process of evolution 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 sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.** HS-LS4-2
Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait. HS-LS4-3	**HS-LS4-3 . Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.** HS-LS4-3
Construct an explanation based on evidence for how natural selection leads to adaptation of populations. HS-LS4-4	**HS-LS4-4 . Construct an explanation based on evidence for how natural selection leads to adaptation of populations.** HS-LS4-4
Evaluate the evidence su ch	**HS-LS4-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of**

Skip to main content

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. HS-LS4-5	**some species, (2) the emergence of new species over time, and (3) the extinction of other species.** HS-LS4-5

Standard