

## Disciplinary Core Ideas in Life Sciences

Core Idea LS1: From Molecules to Organisms: Structures and Processes

*How do organisms live, grow, respond to their environment, and reproduce?*

LS1.A Structure and Function

*How do the structures of organisms enable life's functions?*

LS1.B Growth and Development of Organisms

*How do organisms grow and develop?*

LS1.C Organization for Matter and Energy Flow in Organisms

*How do organisms obtain and use the matter and energy they need to live and grow?*

LS1.D Information Processing

*How do organisms detect, process, and use information about the environment?*

Core Idea LS2: Ecosystems: Interactions, Energy and Dynamics

*How and why do organisms interact with their environment and what are the effects of these interactions?*

LS2.A Interdependent Relationships in Ecosystems

*How do organisms interact with the living and nonliving environments to obtain matter and energy?*

LS2.B Cycles of Matter and Energy Transfer in Ecosystems

*How do matter and energy move through an ecosystem?*

LS2.C Ecosystems Dynamics, Functioning, and Resilience

*What happens to ecosystems when the environment changes? and affect its systems?*

LS2.D Social Interactions and Group Behavior

*How do organisms interact in groups so as to benefit individuals?*

Core Idea LS3: Heredity: Inheritance and Variation of Traits

*How are characteristics of one generation passed to the next?  
How can individuals of the same species and even siblings have different characteristics?*

LS3.A Inheritance of Traits

*How are the characteristics of one generation related to the previous generation?*

LS3.B Variation of Traits

*Why do individuals of the same species vary in how they look, function, and behave?*

Core Idea LS4: Biological Evolution: Unity and Diversity

*How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms?  
How does biodiversity affect humans?*

LS4.A Evidence of Common Ancestry and Diversity

*What evidence shows that different species are related?*

LS4.B Natural Selection

*How does genetic variation among organisms affect survival and reproduction?*

LS4.C Adaptation

*How does the environment influence populations of organisms over multiple generations?*

LS4.D Biodiversity and Humans

*What is biodiversity, how do humans affect it, and how does it affect humans?*