Disciplinary Core Ideas

Life Sciences

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?

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: ECOSYSTEM DYNAMICS, FUNCTIONING, AND RESILIENCE: What happens to ecosystems when the environment changes?
  LS2.D: SOCIAL INTERACTIONS AND GROUP BEHAVIOR: How do organisms interact in groups so as to benefit individuals?

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?

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 genetic variation among organisms affect survival and reproduction?
  LS4.D: BIODIVERSITY AND HUMANS: Why do individuals of the same species vary in how they look, function, and behave?