Disciplinary Core Ideas

Learning Progressions K-5 | Life Science

DCI	DCI Description	Kindergarten	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade
LS1 – From Molecules to Organisms: Structures and Processes							
LS1.A	Structure and Function		All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)			Plant and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)	
LS1.B	Growth and Development of Organisms		Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)		Reproduction is essential to the continued existence of every kind of organism. Plants and animal have unique and diverse life cycles. (3-LS1-1)		
LS1.C	Organization for Matter and Energy Flow in Organisms	All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)					Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1) Plants acquire their material for growth chiefly from air and water. (5-LS1.1)
LS1.D	Information Processing		Animals have body parts that capture and convey			Different sense receptors are	

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			different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)			specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)	
LS2 – Ecosystems: Interactions, Energy, and Dynamics							
LS2.A	Interdependent Relationships in Ecosystems			Plants depend on water and light to grow. (2-LS2-1) Plants depend on animals for pollination or to move their seeds around (2-LS2-2)			The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plans or plan parts and animals) and therefore operate as "decomposers." Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in enfironments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can

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							damage the balance of an ecosystem. (5-LS2-1)
LS2.B	Cycles of Matter and Energy Transfer in Ecosystems						Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases and water from the environment and release waste matter (gas, liquid, or solid) back into the environment. (5-LS2-1)
LS2.C	Ecosystem Dynamics, Functioning, and Resilience				When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4)		
LS2.D	Social Interactions and Group Behavior				Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (3-LS2-1)		
LS3 – Heredity: Inheritance and Variation of Traits							
LS3.A	Inheritance of Traits		Young animals are very much, but not exactly, like their parents. Plants also		Many characteristics of organisms are inherited from their parents. (3-LS3-		

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			are very much, but not exactly, like their parents. (1-LS3-1)		1) Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)		
LS3.B	Variation of Traits		Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)		Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1) The environment also affects the traits that an organism develops. (3-LS3-2)		
LS4 – Biological Evolution: Unity and Diversity							
LS4.A	Evidence of Common Ancestry and Diversity				Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (3-LS4-1) Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1)		
LS4.B	Natural Selection				Sometimes the differences in characteristics between individuals of the same species proide advantages in surviving, finding mates,		

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					and reproducing. (3-LS4-2)		
LS4.C	Adaptation				For a particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)		
LS4.D	Biodiversity and Humans			There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)	Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)		