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SC K-12.3 Comprehensive Science Standard – Life Science Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.				
3. Life Science	**Grade Band Standards**			
	K-2	**3-5**	**6-8**	**9-12**
1. Structure and Function of Living Systems	SC2.3.1 Students will investigate the characteristics of living things.	SC5.3.1 Students will investigate and compare the characteristics of living things.	SC8.3.1 Students will investigate and describe the structure and function of living organisms.	SC12.3.1 Students will investigate and describe the chemical basis of the growth, development, and maintenance of cells.
Characteristics of Life	SC2.3.1.a Differentiate between living and nonliving things	SC5.3.1.a Compare and contrast characteristics of living and nonliving things	SC8.3.1.a Recognize the levels of organization in living organisms (cells, tissues, organs, organ systems, organisms)	SC12.3.1.a Identify the complex molecules (carbohydrates, lipids, proteins, nucleic acids) that make up living organisms
Cellular Composition of Organisms			SC8.3.1.b Recognize that all organisms are composed of one or many cells; that these cells must grow, divide, and use energy; and that all cells function similarly SC8.3.1.c Recognize specialized cells perform specialized functions in multicellular organisms SC8.3.1.d Identify the organs and functions of the major systems of the human body and describe ways that these systems interact with each other	SC12.3.1.b Identify the form and function of sub-cellular structures that regulate cellular activities SC12.3.1.c Describe the cellular functions of photosynthesis, respiration, cell division, protein synthesis, transport of materials, and energy capture/release

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3. Life Science	Grade Band Standards			
	K-2	3-5	6-8	9-12
Characteristics of Living Organisms	SC2.3.1.b Identify the basic needs of living things (food, water, air, space, shelter) SC2.3.1.c Identify external parts of plants and animals SC2.3.1.d Observe and match plants and animals to their distinct habitats	SC5.3.1.b Identify how parts of plants and animals function to meet basic needs (e.g., leg of an insect helps an insect move, root of a plant helps the plant obtain water)		
Behavior			SC8.3.1.e Describe how plants and animals respond to environmental stimuli	SC12.3.1.d Describe how an organism senses changes in its internal or external environment and responds to ensure survival

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3. Life Science	Grade Band Standards			
	K-2	3-5	6-8	9-12
2. Heredity	SC2.3.2 Students will recognize changes in living things.	SC5.3.2 Students will identify variations of inherited characteristics and life cycles.	SC8.3.2 Students will investigate and describe the relationship between reproduction and heredity.	SC12.3.2 Students will describe the molecular basis of reproduction and heredity.
Inherited Traits	SC2.3.2.a Describe how offspring resemble their parents	SC5.3.2.a Identify inherited characteristics of plants and animals	SC8.3.2.a Recognize that hereditary information is contained in genes within the chromosomes of each cell	SC12.3.2.a Identify that information passed from parents to offspring is coded in DNA molecules SC12.3.2.b Describe the basic structure of DNA and its function in genetic inheritance SC12.3.2.c Recognize how mutations could help, harm, or have no effect on individual organisms
Reproduction	SC2.3.2.b Describe how living things change as they grow	SC5.3.2.b Identify the life cycle of an organism	SC8.3.2.b Compare and contrast sexual and asexual reproduction	SC12.3.2.d Describe that sexual reproduction results in a largely predictable, variety of possible gene combinations in the offspring of any two parents

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3. Life Science	Grade Band Standards			
	K-2	3-5	6-8	9-12
3. Flow of Matter and Energy in Ecosystems		SC5.3.3 Students will describe relationships within an ecosystem.	SC8.3.3 Students will describe populations and ecosystems.	SC12.3.3 Students will describe, on a molecular level, the cycling of matter and the flow of energy between organisms and their environment.
Flow of Energy		SC5.3.3.a Diagram and explain a simple food chain beginning with the Sun SC5.3.3.b Identify the role of producers, consumers, and decomposers in an ecosystem	SC8.3.3.a Diagram and explain the flow of energy through a simple food web SC8.3.3.b Compare the roles of producers, consumers, and decomposers in an ecosystem	SC12.3.3.a Explain how the stability of an ecosystem is increased by biological diversity
Ecosystems		SC5.3.3.c Recognize the living and nonliving factors that impact the survival of organisms in an ecosystem	SC8.3.3.c Recognize that producers transform sunlight into chemical energy through photosynthesis SC8.3.3.d Determine the biotic and abiotic factors that impact the number of organisms an ecosystem can support SC8.3.3.e Recognize a population is all the individuals of a species at a given place and time SC8.3.3.f Identify symbiotic relationships among organisms	SC12.3.3.b Recognize that atoms and molecules cycle among living and nonliving components of the biosphere SC12.3.3.c Explain how distribution and abundance of different organisms in ecosystems are limited by the availability of matter and energy and the ability of the ecosystem to recycle materials
Impact on Ecosystems		SC5.3.3.d Recognize all organisms cause changes, some beneficial and some detrimental, in the environment where they live	SC8.3.3.g Identify positive and negative effects of natural and human activity on an ecosystem	SC12.3.3.d Analyze factors which may influence environmental quality

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3. Life Science	Grade Band Standards			
	K-2	3-5	6-8	9-12
4. Biodiversity	SC2.3.4 Students will recognize changes in organisms.	SC5.3.4 Students will describe changes in organisms over time.	SC8.3.4 Students will identify characteristics of organisms that help them survive.	SC12.3.4 Students will describe the theory of biological evolution.
Biological Adaptations	SC2.3.4.a Recognize seasonal changes in animals and plants	SC5.3.4.a Describe adaptations made by plants or animals to survive environmental changes	SC8.3.4.a Describe how an inherited characteristic enables an organism to improve its survival rate	SC12.3.4.a Identify different types of adaptations necessary for survival (morphological, physiological, behavioral)
Biological Evolution			SC8.3.4.b Recognize the extinction of a species is caused by the inability to adapt to an environmental change	SC12.3.4.b Recognize that the concept of biological evolution is a theory which explains the consequence of the interactions of: (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) the ensuing selection by the environment of those offspring better able to survive and leave offspring
			SC8.3.4.c Use anatomical features of an organism to infer similarities among other organisms	SC12.3.4.c Explain how natural selection provides a scientific explanation of the fossil record and the molecular similarities among the diverse species of living organisms SC12.3.4.d Apply the theory of biological evolution to explain diversity of life over time