

Life Science

LS1 - All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).

	K-2	3-4
1. CLASSIFICATION	<p>S(LS1)-2-1.1 Differentiate between living and nonliving things, and categorize objects in each group using the significant observable characteristics they share, such as color, shape and size.</p> <p>S(LS1)-2-1.2 Recognize plants and animals as living things and describe how they are alike and different.</p>	<p>S(LS1)-4-1.1 Recognize and identify the various ways in which living things can be grouped.</p> <div style="border: 1px solid black; padding: 5px;"> <p>S(LS1)-4-1.2 Sort/classify different living things using similar and different characteristics. Describe why organisms belong to each group or cite evidence about how they are alike or not alike. [LS1 (K-4) INQ+POC –1]</p> </div>
2. LIVING THINGS AND ORGANIZATION	<p>S(LS1)-2-2.1 Recognize that plants and animals have features that help them survive in different environments.</p>	<p>S(LS1)-4-2.1 Recognize that living organisms have certain structures and systems that perform specific functions, facilitating survival, growth and reproduction.</p> <p>S(LS1)-4.2.2 Identify and describe the function of the plant structures responsible for food production, water transport, support, reproduction, growth and protection.</p>

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		<div> <p>S(LS1)-4-2.3 Identify and explain how the physical structures of an organism (plants or animals) allow it to survive in its habitat/environment (e.g., roots for water; nose to smell fire). [LS1 (K-4) FAF -4]</p> </div> <div> <p>S(LS1)-4-2.4 Identify the basic needs of plants and animals in order to stay alive (i.e., water, air, food, space). [LS1 (K-4) SAE -2]</p> </div>
3. REPRODUCTION	<p>S(LS1)-2-3.1 Recognize that parents and offspring of many species closely resemble one another, and describe the similarities in appearance of given plant and animal families.</p> <p>S(LS1)-2-3.2 Recognize living things have a life cycle, during which they are born, grow, and die.</p>	<p>S(LS1)-4-3.1 Distinguish between plant and animal characteristics that are inherited, such as eye color in humans and the shape of leaves in plants, and those that are affected by their environment, such as grass turning brown due to lack of water.</p> <p>S(LS1)-4-3.2 Recognize that living organisms have life cycles, which include birth, growth and development, reproduction, and death; and explain how these life cycles vary for different organisms.</p> <p>S(LS1)-4-3.3 Describe the reproductive process of</p>

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plants, explaining some plants grow from seed, while others grow from the parts of other plants.

S(LS1)-4-3.4 Predict, sequence, or compare the life stages of organisms – plants and animals (e.g., put images of life stages of an organism in order, predict the next stage in sequence, and compare two organisms). [LS1 (K-4) POC –3]

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LS2 - Energy flows and matter recycles through an ecosystem.		
	K-2	3-4
1. ENVIRONMENT	<p>S(LS2)-2-1.1 Recognize that living things can be found almost anyplace in the world, and that specific types of environments are required to support the many different species of plant and animal life.</p> <p>S(LS2)-2-1.2 Recognize that animals, including humans, interact with their surroundings using their senses, and that different senses provide different kinds of information.</p> <p>S(LS2)-2-1.3 Recognize that some plants and animals go through changes in appearance when the seasons change.</p>	<p>S(LS2)-4-1.1 Describe how the nature of an organism's environment, such as the availability of a food source, the quantity and variety of other species present, and the physical characteristics of the environment, affect the organism's patterns of behavior.</p> <p>S(LS2)-4-1.2 Describe the interaction of living organisms with nonliving things.</p>
2. FLOW OF ENERGY	<p>S(LS2)-2-2.1 Identify the resources plants and animals need for growth and energy, and describe how their habitat provides these basic needs.</p>	<p>S(LS2)-4-2.1 Recognize that the transfer of energy through food is necessary for all living organisms and describe the organization of food webs.</p>

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LS2 - Energy flows and matter recycles through an ecosystem.

	K-2	3-4
		<div> S(LS2)-4-2.2 Recognize that energy is needed for all organisms to stay alive and grow or identify where a plant or animal gets its energy. [LS2 (K-4) SAE -5] </div>
3. RECYCLING OF MATERIALS	<i>None at this grade span.</i>	<p>S(LS2)-4-3.1 Recognize that plants and animals interact with one another in various ways besides providing food, such as seed dispersal or pollination.</p> <div> S(LS2)-4-3.2 Describe ways plants and animals depend on each other (e.g., shelter, nesting, food). [LS2 (K-4) SAE -6] </div>

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LS3 - Groups of organisms show evidence of change over time (e.g. evolution, natural selection, structures, behaviors, and biochemistry).

	K-2	3-4
1. CHANGE	S(LS3)-2-1.1 Recognize that some living things, which lived on Earth long ago, are now extinct, such as dinosaurs, mammoths, giant tree ferns, and horsetail trees.	<p>S(LS3)-4-1.1 Provide examples of how environmental changes can cause different effects on different organisms.</p> <p>S(LS3)-4-1.2 Provide examples of how an organism's inherited characteristics can adapt and change over time in response to changes in the environment.</p> <div style="border: 1px solid black; padding: 5px;"> <p>S(LS3)-4-1.3 Using information (data or scenario), explain how changes in the environment can cause organisms to respond (e.g., survive there and reproduce, move away, die). [LS3 (K-4) SAE –7]</p> </div>
2. EVOLUTION	S(LS3)-2-2.1 Recognize that some plants and animals, which are alive today, are similar to living things, which have become extinct, such as elephants and mammoths.	S(LS3)-4-2.1 Compare information about fossils to living organisms and other fossils to determine any similarities and differences.

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LS3 - Groups of organisms show evidence of change over time (e.g. evolution, natural selection, structures, behaviors, and biochemistry).

	K-2	3-4
3. NATURAL SELECTION	<p>S(LS3)-2-3.1 Recognize and describe the similarities and differences in both behavior and appearance of plants and animals.</p> <p>S(LS3)-2-3.2 Recognize there are different species of living things in various places around the world.</p>	<p>S(LS3)-4-3.1 Recognize that individuals of the same species differ in their characteristics, and explain that sometimes these differences give individuals an advantage in survival and reproduction.</p> <p>S(LS3)-4-3.2 Recognize that for any particular environment, some kinds of animals and plants survive well, some less well, and some cannot survive at all.</p>

LS4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

	K-2	3-4
1. BEHAVIOR	<p>S(LS4)-2-1.1 Recognize and describe how living things respond when exposed to helpful and harmful situations.</p> <p>S(LS4)-2-1.2 Recognize that humans learn from each other in many different ways, such as listening and speaking, watching and imitating.</p> <p>S(LS4)-2-1.3 Recognize that humans can gather different kinds of information about an object by adjusting their proximity to it.</p> <p>S(LS4)-2-1.4 Recognize that some of the things humans can do, such as playing games, reading, and writing, must be learned.</p>	<p>S(LS4)-4-1.1 Recognize that an individual organism's behavior is affected by internal cues, such as hunger and thirst; and describe how an organism uses its senses to understand and respond to these cues.</p> <p>S(LS4)-4-1.2 Recognize that an individual organism's behavior is influenced by external cues, such as seasonal change, and describe how an organism might react, such as migrating or hibernating.</p> <p>S(LS4)-4-1.3 Recognize behaviors that may be unsafe or unhealthy for themselves and others.</p>

LS4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

2. DISEASE

S(LS4)-2-2.1 Recognize that proper nutrition, exercise and rest are all important factors in maintaining good health.

S(LS4)-2-2.2 Recognize that humans can spread germs that cause disease.

S(LS4)-2-2.3 Identify and describe the basic personal hygiene habits for maintaining good health, such as washing one's hands with soap and water and brushing one's teeth.

S(LS4)-2-2.4 Recognize symptoms, such as fever, rashes, coughing and congestion for common illnesses.

S(LS4)-4-2.1 Explain how the amount of rest and the types of food, exercise and recreation humans choose can influence and affect their well-being.

S(LS4)-4-2.2 Recognize that vitamins and minerals are needed in small amounts and are essential to maintain proper health.

S(LS4)-4-2.3 Explain how proper food preparation and appropriate food handling practices can maintain the safety and quality of food.

LS4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

3. HUMAN IDENTITY

S(LS4)-2-3.1 Recognize similarities and individual differences among people, and that children closely resemble their parents.

S(LS4)-2-3.2 Identify the sense organs, including eyes, ears, nose mouth, and skin, and describe how each can warn an individual about danger.

S(LS4)-2-3.3 Recognize that two parents, both a father and mother, are required for human reproduction.

S(LS4)-2-3.4 Recognize and describe the human life cycle from birth to old age.

S(LS4)-2-3.5 Recognize that humans need food, water, air, waste removal and a particular range of temperatures in their environment, just as other animals do.

S(LS4)-4-3.1 Identify what the physical structures of humans do (e.g., sense organs – eyes, ears, skin, etc.) or compare physical structures of humans to similar structures of animals. [LS4 (K-4) FAF -8]

**S(LS4)-4-3.2 Distinguish between characteristics of humans that are inherited from parents (i.e., hair color, height, skin color, eye color) and others that are learned (e.g., riding a bike, singing a song, playing a game, reading)
[LS4 (K-4) POC -9]**

S(LS4)-4-3.3 Recognize the nutritional value of different foods and distinguish between healthy and unhealthy food choices using data gathered from food labels and dietary guidelines, such as the food pyramid.

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LS5 - The growth of scientific knowledge in Life Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues.

	K-2	3-4
1. DESIGN TECHNOLOGY	S(LS5)-2-1.1 Recognize that new products can be made out of natural materials, such as paper from trees, cloth from various plants and animals.	S(LS5)-4-1.1 Recognize that man uses various mechanical devices to record and describe living organisms.
2. TOOLS	S(LS5)-2-2.1 Recognize that some tools, such as magnifiers, balances and thermometers, have special uses, and can help gather information and extend the senses.	<p>S(LS5)-4-2.1 Demonstrate the use of appropriate tools and simple equipment, such as thermometers, magnifiers and microscopes to gather data and extend the senses.</p> <p>S(LS5)-4-2.2 Identify and describe the purpose of tools used by health care professionals, such as X-rays and stethoscopes.</p>
3. SOCIAL ISSUES (LOCAL AND GLOBAL) MEDICAL TECHNOLOGY BIOTECHNOLOGY	<p>S(LS5)-2-3.1 Recognize that technology is used in medicine to prevent and cure diseases, through vaccinations and medications.</p> <p>S(LS5)-2-3.2 Provide examples from personal experience that illustrate how medicine helps humans recover from illness.</p>	<p>S(LS5)-4-3.1 Recognize that medical technology provides information about a body's condition, such as determining blood pressure, and recognizing the need to repair, replace and support the affected body parts.</p> <p>S(LS5)-4-3.2 Recognize that biotechnology refers to the different ways humans modify the living environment to meet their needs, including growing food, genetic engineering and using living organisms such as yeast to prepare foods.</p>

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4. CAREER TECHNICAL EDUCATION CONNECTIONS	S(LS5)-2-4.1 Recognize that some jobs/careers require knowledge and use of life science content and/or skills.	S(LS5)-4-4.1 Identify some jobs/careers that require knowledge and use of life science content and/or skills.
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