

PreK-LS1 From Molecules to Organisms: Structures and Processes	
PreK-LS1-1.	Describe/draw and compare the external body parts of animals (including themselves) and plants they investigate and explain functions of some of the observable body parts.
PreK-LS1-2.	Recognize that all animals have parents and all have a life cycle: they are born, develop, grow, and die.
PreK-LS1-3	Recognize that plants have a life cycle. Most begin as seeds, grow, develop, make more seeds and die.
PreK-LS1-4.	Explain that most animals have 5 senses they use to gather information about the world around them.
PreK-LS1-5.	Use their senses in their exploration and play to gather information.
The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i> :	
<b>Science and Engineering Practices</b> <b>Developing and Using Models</b> <ul style="list-style-type: none"> <li>Represent (e.g., draw, use blocks, use clay, make a collage) findings. (PreK-LS1-1)</li> </ul> <b>Constructing Explanations/Theories and Evaluating Solutions (Engineering)</b> <ul style="list-style-type: none"> <li>Look for and describe patterns and relationships (PreK-LS1-2, PreK-LS1-3)</li> </ul> <b>Obtaining, Evaluating, and Talking about Information</b> <ul style="list-style-type: none"> <li>Document experiences and thinking to communicate with others. (PreK-LS1-4)</li> </ul> <b>Planning and Carrying Out Investigations</b> <ul style="list-style-type: none"> <li>Use their senses and simple tools to observe, gather, and record data (e.g., dictate, draw, photograph, write). (PreK-LS1-5)</li> </ul>	<b>Disciplinary Core Ideas</b> <b>LS1.A: Structure and Function</b> <ul style="list-style-type: none"> <li>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, grow, and produce more plants. (PreK-LS1-1)</li> </ul> <b>LS1.B: Growth and Development of Organisms</b> <ul style="list-style-type: none"> <li>Plants and animals have predictable characteristics at different stages of development. Plants and animals grow and change. (PreK-LS1-2, PreK-LS1-3)</li> </ul> <b>LS1.D: Information Processing</b> <ul style="list-style-type: none"> <li>Animals have body parts that capture and convey different kinds of information needed for growth and survival-for example, eyes for light, ears for sounds, and skin for temperature or touch. (PreK-LS1-4) (PreK-LS1-5)</li> </ul>
Connections to other DCIs in Pre-K:	
Articulation of DCIs across grade-bands:	
Common Core State Standards Connections:	
ELA/Literacy –	
<b>Writing: Text Types and Purposes</b>	
<ul style="list-style-type: none"> <li>Use a combination of dictating and drawing to explain information about a topic (PK.W.MA.2.)</li> </ul>	
Mathematics – <del>PK.CC.MA.1</del>	

**Comment [WJ1]:** Sequencing does not literally appear except in basic counting.

PreK-LS2 Ecosystems: Interactions, Energy, and Dynamics	
PreK-LS2-1.	Use evidence to define several characteristics of living things that distinguish them from non-living things.
PreK-LS2-2.	Using their experiences in the local environment and other evidence, explain how familiar plants and animals meet their needs where they live. <b>[Clarification statement: Basic needs include water, food, air, shelter, and, for most plants, light.]</b>
PreK-LS2-3	Give examples from the local environment of how some animals and plants are dependent on one another to meet their basic needs.
The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i> :	
<b>Science and Engineering Practices</b> <b>Engaging in Discussion/Argument from Evidence</b> <ul style="list-style-type: none"> <li>Support thinking with evidence. (PreK-LS2-1)</li> <li>Engage in discussion before, during, and after investigations</li> </ul> <b>Constructing Explanations/Theories and Evaluating Solutions (Engineering)</b> <ul style="list-style-type: none"> <li>Construct theories based in experience about what might be going on. (PreK-LS2-2)</li> <li>Look for and describe patterns and relationships (PreK-LS2-3)</li> </ul>	<b>Disciplinary Core Ideas</b> <b>LS2.A: Interdependent Relationships in Ecosystems</b> <ul style="list-style-type: none"> <li>Animals depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature. Animals depend on plants or other animals for food. Plants depend on air, water, minerals (in the soil), and light to grow. Animals can move around, but plants cannot, and they often depend on animals for pollination or to move their seeds around. Different plants survive better in different settings because they have varied needs for water, minerals, and sunlight. (Pre-K LS2-1, PreK-LS2-2, PreK-LS2-3)</li> </ul> <b>LS2.B: Cycles of Matter and Energy Transfer in Ecosystems</b> <ul style="list-style-type: none"> <li>Organisms obtain the materials they need to grow and survive from the environment. (PreK-LS2-2, PreK-LS2-3)</li> </ul>
Connections to other DCIs in Pre-K:	
Articulation of DCIs across grade-bands:	

Common Core State Standards Connections:

ELA/Literacy –

Mathematics—

**Measurement and Data: Classify objects and count the number of objects in each category**

- Sort, categorize, and classify objects by more than one attribute (PK.MD.MA.3.).

#### PreK-LS3 Variation of Traits

**PreK-LS3-1. Use observations to explain that young plants and animals are like but not exactly like their parents. (Clarification statement: Examples of observations include leaves of plants that grow from the seeds from another plant are the same shape as the original plant but may be different sizes and puppies look similar but not exactly the same as their parents.**

**PreK-LS3-2. Identify similarities and differences among individuals of the same kind**

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

#### Science and Engineering Practices

**Engaging in Discussion/Argument from Evidence**

- Support thinking with evidence. (PreK-LS3-1)

**Constructing Explanations/Theories and Evaluating Solutions (Engineering)**

- Look for and describe patterns and relationships (PreK-LS3-2)

#### Disciplinary Core Ideas

**LS3.A: Inheritance of Traits**

- Young animals are very much, but not exactly, like their parents and also resemble other animals of the same kind. (PreK-LS3-1)

**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. (PreK-LS3-2)

Connections to other DCIs in Pre-K:

Articulation of DCIs across grade-bands:

Common Core State Standards Connections:

ELA/Literacy –

**Speaking and Listening: Presentation of Knowledge and Ideas**

- Describe people, places, things, and events with relative details, expressing ideas and feelings clearly (PK.SL.MA.4.)

Mathematics—

**Measurement and Data: Describe and compare measurable attributes**

- Compare the attributes of length and weight for two objects, including longer/shorter, same length; heavier/lighter, same weight; holds more/less, holds the same amount (PK.MD.MA.2)