P. Life Sciences

Students who demonstrate understanding can:

P-LS1-1. **Observe familiar plants and animals (including humans) and describe what they need to survive.** [Clarification Statement: Emphasis should be on determining what a variety of living organisms need to live and grow.]

P-LS1-2. **Plan and conduct an investigation to determine how familiar plants and/or animals use their external parts to help them survive in the environment.** [Clarification Statement: Emphasis should be on the relationships between the physical and living environment. Examples of external parts could include roots, stems, leaves for plants and eyes, ears, mouth, arms, legs for animals.]

P-LS3-1. **Develop a model to describe that some young plants and animals are similar to, but not exactly like, their parents.** [Clarification Statement: Emphasis is on observation and pictorial representations of familiar plants and animals.]

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

Developing and Using Models

Modeling in PK–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

- Compare models to identify common features and differences. (P-LS3-1)
- Develop a simple model based on evidence to represent a proposed object or tool. (P-LS3-1)

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in PK–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

- With guidance, plan and conduct an investigation in collaboration with peers. (P-LS1-2)

Analyzing and Interpreting Data

Analyzing data in PK–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

- Record information (observations, thoughts, and ideas). (P-LS1-1)
- Analyze data from tests of an object or tool to determine if it works as intended. (P-PS2-1)

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in PK–2 builds on prior experiences and uses observations and texts to communicate new information.

- Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (P-LS1-1)

Connections to Nature of Science

Scientific Investigations Use a Variety of Methods

- Scientists use different ways to study the world. (P-LS1-2)

Disciplinary Core Ideas

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. (P-LS1-2)

LS1.C: Organization for Matter and Energy Flow in Organisms

- (NYSED) All animals need food, air, and water in order to live, grow, and thrive. Animals obtain food from plants or from other animals. Plants need water, air, and light to live, grow, and thrive. (P-LS1-1)

LS1.D: Information Processing

- Animals have body parts that capture and convey 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. (P-LS1-2)

LS3.A: Inheritance of Traits

- (NYSED) Some young animals are similar to, but not exactly, like their parents. Some young plants are also similar to, but not exactly, like their parents. (P-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. (P-LS3-1)

Crosscutting Concepts

Patterns

- Patterns in the natural and human designed world can be observed and used as evidence. (P-LS1-1),(P-LS3-1)

Cause and Effect

- Events have causes that generate observable patterns. (P-LS1-2)

Systems and System Models

- Systems in the natural and designed world have parts that work together. (P-LS1-2)

Structure and Function

- The shape and stability of structures of natural and designed objects are related to their function(s). (P-LS1-2)

Connections to other DCIs in prekindergarten: **P.ESS2.D** (P-LS1-1); **P.PS3.B** (P-LS1-2)

Articulation of DCIs across grades K-1: **K.LS1.C** (P-LS1-1); **K.ESS3.C** (P-LS1-1); **1.LS1.A** (P-LS1-1); **1.LS1.D** (P-LS1-2); **1.LS3.A** (P-LS3-1); **1.LS3.B** (P-LS3-1)

New York State P-12 Common Core Learning Standards Connections:

ELA/Literacy –

RI.PK.1	With prompting and support, ask and answer questions about details in a text. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
RI.PK.4	Exhibit curiosity and interest in learning new vocabulary (e.g., ask questions about unfamiliar vocabulary). *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
RI.PK.10	With prompting and support, actively engage in group reading activities with purpose and understanding. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
W.PK.1	With prompting and support, use a combination of drawing, dictating, or writing to express an opinion about a book or topic (e.g., I like.... because...) *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
W.PK.2	With prompting and support, use a combination of drawing, dictating, or writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
W.PK.3	With prompting and support, use a combination of drawing, dictating, or writing to narrate a single event and provide a reaction to what happened. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
W.PK.8	With guidance and support, recall information from experiences or gather information from provided sources to answer a question. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
SL.PK.2	With guidance and support, confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
SL.PK.3	With guidance and support, ask and answer questions in order to seek help, get information, or clarify something that is not understood. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
SL.PK.5	Add drawings or other visual displays to descriptions as desired to provide additional detail. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*

Mathematics –

MP.1	Make sense of problems and persevere in solving them. *(P-LS1-1),(P-LS3-1)*
MP.5	Use appropriate tools strategically. *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
PK.OA.2	Duplicate and extend (eg., What comes next?) simple patterns using concrete objects. *(P-LS1-2),(P-LS3-1)*
PK.MD.1	Identify measurable attributes of objects, such as length, and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full, heavy, and light). *(P-LS1-1),(P-LS1-2),(P-LS3-1)*
PK.MD.2	Sort objects into categories; count the numbers of objects in each category. 1 (limit category counts to be less than or equal to 10) *(P-LS3-1)*

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea. The text in the "Disciplinary Core Ideas" section is reproduced verbatim from A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas unless it is preceded by (NYSED).