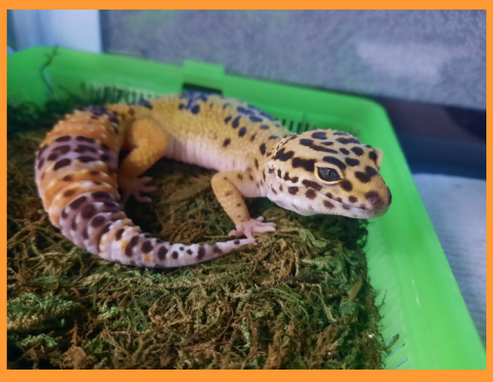

LS1.C: Organization for Matter and Energy Flow in Organisms

- 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 (**5-LS1-1**)

LS2.A: Interdependent Relationships in Ecosystems

- The food of almost any kind of animal can be traced back to plants. Organisms can survive only in environments in which their particular needs are met. (**5-LS2-1**)

LS2.B: Interdependent Relationships in Ecosystems

- The food of almost any kind of animal can be traced back to plants. Organisms can survive only in environments in which their particular needs are met. (**5-LS2-1**)

Developing and Using Models

Develop models to describe phenomena. Students will develop and observe a live model of a gecko habit to explore how energy and matter move through a system and how organisms can only survive in environments that meet their needs.

Systems and System Models

A system can be described in terms of its components and their interactions. Students will be able to observe and describe how the gecko obtains and utilizes energy.

Energy & Matter

Matter is transported into, out of, and within systems. Energy can be transferred in various ways and between objects. Students will be able to observe and describe how the leopard gecko obtains and uses energy.

Elementary Science Performance Level Descriptions

Topic & PE: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment(**5-LS2-1**)

NYS Level 4	Develop a model that includes multiple pathways to describe the movement of matter and energy among multiple plants (producers), animals (consumers), decomposers and the environment.
NYS Level 3	Develop models to describe the movement of matter among plants, animals, decomposers, and the environment.
NYS Level 2	Use a model of a food web to describe the movement of matter among plants, animals, decomposers, and/or the environment.
NYS Level 1	Identify the evidence in a model of a food web that shows one pathway for the transfer of matter among plants, animals, decomposers, and/or the environment.

Kit Connections

Grade K-2:
SKK.3 Relationships in an Ecosystem
SK1.4 The Human Body
SK2.4 Plants: Structure & Function
SK2.3 The Diversity of Life

Grade 3-5:
SK3.4 Adaptations & Survival

NYS Investigations:
Circle of Life (3-5)
Balancing Act (LS)

LS1.A: Structure and Function

- Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (**4-LS1-1**)

LS1.D: Information Processing

- Different sense receptors are 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**)

Developing and Using Models

Develop models to describe phenomena. Students will develop and use models to guide their experimental design, testing whether a crayfish can gather information through its senses and apply it to future decisions.

Structure and Function

The shape and stability of structures of natural and designed objects are related to their function(s). Students will explore the internal and external structures of a crayfish to understand their function in supporting survival, growth, behavior, and reproduction.

Systems and System Models

A system can be described in terms of its components and their interactions. Students will explore how a crayfish uses its senses to gather information and apply it to future decisions.

Elementary Science Performance Level Descriptions

Topic & PE: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways (**4-LS1-2**)

NYS Level 4	Develop a system model to describe the way in which animals receive different types of information through their senses, process the information in their brains, and respond to information in different ways.
NYS Level 3	Use a model to describe that animals receive different types of information through their senses, process the information in their brains, and respond to information in different ways.
NYS Level 2	Use a model to identify one type of information animals receive through their senses, process the information in their brains, and identify how they respond to this information.
NYS Level 1	Use a model to identify one type of information, from those given, that animals receive through a sense or identify one way animals respond to information, from those given.

Kit Connections

Grade K-2:
SKK.4 The Five Senses
SK1.1 Light, Sound & Communication
SK1.3 Animals & Survival
SK1.4 The Human Body
SK2.4 Plants: Structure & Function

Grade 3-5:
SK4.2 Waves

NYS Investigations:
It's Alive (6-8)
Balancing Act (LS)
Lactose Tolerance (LS)

LS1.B: Growth and Development of Organisms

- Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (**3-LS1-1**)

LS4.C: Adaptation

- For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (**3-LS4-3**)

Developing and Using Models

Develop models to describe phenomena. Students will be able to observe a live model of the life cycle of Painted Lady Butterflies and compare to models of other organisms developed in the unit.

Patterns

Patterns of change can be used to make predictions. Students can compare the Painted Lady Butterfly life cycle with others discussed in the unit to identify common patterns (birth, growth, reproduction, death) in the life cycles of organisms. Students can use the butterfly life cycle to make predictions about the life cycle of other organisms.

Cause & Effect

Cause and effect relationships are routinely identified and used to explain change. Students can compare features of the butterfly with other organisms discussed in the unit to explain how different adaptations affect the chances of an organism's survival.

Energy & Matter

Energy can be transferred in various ways and between objects. Students will be able to observe and describe how the butterflies obtain energy.

Elementary Science Performance Level Descriptions

Topic & PE: Inheritance and Variations of Traits: Life Cycles and Traits (**3-LS1-1**)

NYS Level 4	Develop models to describe that organisms have unique and diverse life cycles, but all have predictable patterns and describe how reproduction is essential to the continued existence of a species.
NYS Level 3	Develop models to describe that organisms have unique and diverse life cycles, but all have in common, birth, growth, reproduction, and death.
NYS Level 2	Use models to describe that organisms have unique and diverse life cycles, but all have in common birth, growth, reproductions, and death.
NYS Level 1	Use models to identify common stages that exist in all life cycles.

Kit Connections

Grade K-2:
SK1.3 Animals & Survival

Grade 3-5:
SK3.4 Adaptations & Survival

NYS Investigations:
Circle of Life (3-5)
For the Birds (LS)
Lactose Tolerance (LS)

LS2.A: Interdependent Relationships in Ecosystems

- Animals depend on plants or other animals for food. (**2-LS2-2**)

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**)

Developing and Using Models

Develop a model based on evidence. Students will apply their understanding of living and nonliving things to design a habitat for their mealworms and pill bugs that mimics their natural environment and meets their survival needs.

Planning and Carrying Out Investigations

Make observations to collect data that can be used to make comparisons. Students will investigate and compare the behaviors and responses of mealworms and pill bugs to develop an understanding of the relationship between an organism's structures, functions, and its environment.

Patterns

Similarities and differences in patterns can be used to sort and classify organisms. Students will use observations and identified characteristics from their mealworm and pill bug habitat to compare with other environments and the organisms that live in them.

Structure and Function

The shape and stability of structures of natural and designed objects are related to their functions(s). Students will use daily observations and investigations to explore the behavioral responses of each organism and their interactions with the environment, deepening their understanding of body structures and their functions.

Kit Connections

Grade K-2:	**Grade 3-5:**	**NYS Investigations:**
SKK.3 Relationships in an Ecosystem SK2.4 Plants: Structure & Function	SK3.4 Adaptations & Survival SK5.4 The Energy of Life	For the Birds (LS)

NYS Next Generation Learning Standards Connections:

2W6: Develop questions and participate in shared research and explorations to answer questions and to build knowledge. (**2-LS4-1**)

MP.2: Reason abstractly and quantitatively. (**2-LS4-1**)

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. (**1-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 (**1-LS1-1**)

Constructing Explanations and Designing Solutions

Make observations to construct an evidence-based account for natural phenomena. Students will investigate the behavioral response of hermit crabs in a changed environment.

Obtaining, Evaluating, and Communicating Information

Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. Students will use text and media resources to examine the structures and functions of various animal coverings and appendages, and compare them to those of hermit crabs.

Structure and Function

The shape and stability of structures of natural and designed objects are related to their function(s). Students will explore a variety of animal appendages and compare them to the structures and functions of hermit crab features.

Kit Connections

Grade K-2:	**Grade 3-5:**	**NYS Investigations:**
SKK.4 The Five Senses SK1.1 Light, Sound & Communicaiton SK1.4 The Human Body SK2.4 Plants: Structures & Function	SK4.2 Waves SK4.4 Structures & Functions of Life	It's Alive (6-8) Balancing Act (LS) Lactose Tolerance (LS)

NYS Next Generation Learning Standards Connections:

1R1: Develop and answer questions about key ideas and details in a text. **(1-LS1-1)**
1R2: Identify a main topic or idea in a text and retell important details. (**1-LS1-1**)

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

- 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. (**K-LS1-1**)

Analyzing and Interpreting Data

Use observations to describe patterns in the natural world in order to answer scientific questions. Students will investigate the betta fish ecosystem, identifying living and nonliving components to deepen their understanding of what animals need to survive.

Patterns

Patterns in the natural and human designed world can be observed and used as evidence. Students will make daily observations of the betta fish environment to identify patterns between the organisms.

Cause & Effect

Events have causes that generate observable patterns. Students will conduct daily observations to identify patterns in the behavior and interactions of organisms within the betta fish ecosystem.

Systems and System Models

Systems in natural and designed world have parts that work together. Through daily observations, students will deepen their understanding of how organisms interact and depend on one another within ecosystems.

Kit Connections

Grade K-2:	**Grade 3-5:**	**NYS Investigations:**
SK1.4 The Human Body SK2.4 Plants: Structure & Function	SK5.4 The Energy of Life	Circle of Life (3-5) Balancing Act (LS)

NYS Next Generation Learning Standards Connections:

KW7: Develop questions and participate in shared research and exploration to answer questions and to build and share knowledge **(K-LS1-1)**

NY-K.MD.2: Directly compare two objects with a common measurable attribute and describe the difference. **(K-LS1-1)**