Kindergarten Science Unit 1: Basic Needs of Living and Human Things

Unit Summary: In this unit of study, students develop an understanding of what plants, animals and humans need to survive and the relationship between their needs and where they live.

Concepts & Vocabulary:
- All living things breathe, reproduce, move, and grow.
- Plants need air, water, light and space to survive.
- Animals need air, water, food and a home to survive.
- A habitat is where an animal lives.
- Animals live in an area where all of their needs can be met.
- Plants and animals can change the land to meet their needs.
- Plants and animals can change their environment.
- Living things need water, air, resources from land to survive.
- Humans use natural resources from the environment.

Stage 1: Desired Results (Also see Disciplinary Core Ideas below)

Performance Expectations: (PE) (Established Goals / Content Standards)

K-LS1-1 Use observations to describe patterns of what plants and animals need to survive.
- [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]

K-ESS3-1 Use a model to represent the relationship between the needs of different plants and animals and the places they live.
- [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]

K-ESS2-2 Construct an argument supported by evidence for how plants and animals can change the environment to meet their needs.
- [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]

K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.*
- [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]

K-2 ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Planning and Carrying Out Investigations ● Make observations (firsthand or	**LS1.C: Organization for Matter and Energy Flow in Organisms** ● All animals need food in order	**Patterns** ● Patterns in the natural and human designed world can be

from media) to collect data that can be used to make comparisons. (K-PS3-1)

Analyzing and Interpreting Data
- Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)

Developing and Using Models
- Use a model to represent relationships in the natural world. (K-ESS3-1) Engaging in Argument from Evidence
- Construct an argument with evidence to support a claim. (K-ESS2-2)

to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)

ESS3.A: Natural Resources
- Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)

ESS2.E: Biogeology
- Plants and animals can change their environment. (K-ESS2-2)

observed and used as evidence. (K-LS1-1)

Systems and System Models
- Systems in the natural and designed world have parts that work together. (K-ESS3-1), (K-ESS2-2)Connections to Nature of Science Scientific Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (K-LS1-1)

Enduring Understandings	Essential Questions
Students will understand that: ● Humans use natural resources from the environment. ● Plants, animals and their surroundings make a system, they work together to meet needs. ● Living things live in places that have what they need to survive.	 *What do plants and animals need to survive? *How do plants and animals change the environment to meet their needs?

Questions that Guide Lessons:
- How can you tell that something is living or nonliving?
- What is a habitat?
- What are the different types of habitats and name their characteristics?
- What is hibernation?
- How can plants and animals change the land?
- What is the relationship between animals and what they eat, and how does that determine where they live?
- What features help plants and animals survive in different environments?
- How are these features used?
- How do plants and animals depend on the land, air, and water and survive?

Stage 2 – Model Assessments	
Summative Performance Task(s) ● Students will model the relationships between the needs of different plants and animals and the places they live. (drawing, model, etc.) They will describe patterns of what plants and animals need to survive	**Formative Evidence:** Through what other evidence will students demonstrate achievement of the desired results? ● (Suggested) 2-4 question oral comprehension checks

(chart, drawing, etc.) and how they can change the environment to meet their needs (create shelter, move location, etc.) ● **Life in the Environment Anchor Chart** ● Living vs. Nonliving Scavenger Hunt - be sure to tie this in to what living things need to survive as the criteria **Audience:** ● Peers, teacher, self-reflection **Criteria:** ● Teacher observation	● Teacher observation ● Class Discussion/ Anecdotal notes ● (possible) Mystery Science end-of-mystery assessment Mystery Science Living Things Assessments Folder ● Standard K-LS1-1 Assessment Checklist ● Standard K-ESS2-2 Checklist Assessment ● Standard K-ESS3-1 Checklist Assessment ● Standard K-ESS3-3 Checklist Assessment

Stage 3 – Learning Plan Resources and Activities

Suggested Resources for Planning:
- **Mystery Science: Plant and Animal Secrets Mysteries 1-6**
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Tower Garden lessons
- **https://www.towergarden.com/content/dam/towergarden/resources/lesson-plans/tower-garden-foldable-writing-page-K1.pdf**
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- **Kindergarten Science Unit 1 Suggested Activities Folder**
- **Reading A to Z Non-Fiction Anchor Texts**
- **https://kids.nationalgeographic.com/explore/books/how-things-work/**
- **Build a bear den**
- **Living and Non-Living Mentor Texts**
- **www.thewonderofscience.com**
- **Needs of Living Things Vocabulary**
- **Why Do Sunflowers Follow the Sun? Phenomena Video**
- **Exploring Microhabitats Phenomena Video**
- **Phenomenon Master List**
- **Living/Non-Living Sorting Activity**

Learning Activities:
Mystery Science, njctl.org, Scholastic News, STEM lesson: Design a shelter for an animal using certain constraints and limitations based on what they learned.
Needs of an Animal Song
Wants and Needs Anchor Chart Ideas
Farming Fish with Vegetable Phenomena Video

[Earth worm vs. Gummy worm Experiment](#)

Suggested Methods: (The following methods anchor learning with a purpose, mitigating the "why do I need to know this" questions.)
- Phenomena based learning
- Problem Based Learning (PBL)
- Inquiry Based Learning
- Case studies
- Engaging in Argument w/ evidence