

Unit Overview

Content Area: Life Science

Unit Title: Basic Needs for humans and living things

Unit: 3

Target Course/Grade Level: Kindergarten

Timeline: 13 days

Unit Summary:

Where do plants and animals live and why do they live there?

In this unit of study, students develop an understanding of what plants and animals need to survive and the relationship between their needs and where they live. Students compare and contrast what plants and animals need to survive and the relationship between the needs of living things and where they live. The crosscutting concepts of *patterns* and *systems and system models* are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in *developing and using models*, *analyzing and interpreting data*, and *engaging in argument from evidence*. Students are also expected to use these practices to demonstrate an understanding of the core ideas.

This unit is based on K-LS1-1, K-ESS3-1, and K-ESS2-2.

How do people impact the environment as they gather and use what they need to live and grow?

In this unit of study, students develop an understanding of what humans need to survive and the relationship between their needs and where they live. The crosscutting concept of *cause and effect* is called out as the organizing concept for the disciplinary core ideas. Students demonstrate grade-appropriate proficiency in *asking questions* and *defining problems*, and in *obtaining, evaluating, and communicating information*. Students are also expected to use these practices to demonstrate an understanding of the core ideas.

This unit is based on K-ESS3-1.

What are our five senses?

In this unit of study, the student will develop an understanding of what are the five senses and the relationship between animal and human senses. The students will compare and explore how the senses help in survival and development.

This unit is based on K-LS1-1.

Learning Targets	
NJSLS-Science	
K-LS-1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive
K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs
K-ESS3-1	Communicate solutions that reduce the impact of humans on land, water, air, and/or living things in the local environment
Disciplinary Core Ideas	
<p><u>LS1.C: Organization for Matter and Energy Flow in Organisms</u></p> <ul style="list-style-type: none"> All animals need food in order 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) <p><u>ESS3.A: Natural Resources</u></p> <ul style="list-style-type: none"> 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) <p><u>ESS2.E: Biogeology</u></p> <ul style="list-style-type: none"> Plants and animals can change their environment. (K-ESS2-2) <p><u>ESS3.C: Human Impacts on Earth Systems</u></p> <ul style="list-style-type: none"> Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3) <p><u>ETS1.B: Developing Possible Solutions</u></p> <ul style="list-style-type: none"> Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (secondary) (K-ESS3-3) <p><u>ETS1.A: Defining and Delimiting Engineering Problems</u></p> <ul style="list-style-type: none"> A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1) Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1) <p>Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1)</p>	
Science and Engineering Practices	
<p><u>Planning and Carrying Out Investigations</u></p> <ul style="list-style-type: none"> Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1) <p><u>Analyzing and Interpreting Data</u></p>	

- 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)

Planning and Carrying Out Investigations

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

Obtaining, Evaluating, and Communicating Information

- Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)

Asking Questions and Defining Problems

- Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1)
- Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)

NJSLS Connections

Primary Interdisciplinary Connections:

English Language Arts/Literacy:

Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book. (K-ESS2-2) W.K.1

Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (K-ESS2-2) W.K.2

Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-LS1-1) W.K.7

Add drawings or other visual displays to descriptions as desired to provide additional detail. (K-ESS3-1) SL.K.5

With prompting and support, ask and answer questions about key details in a text. (K-ESS2-2) R.K.1

Mathematics:

Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. (K-LS1-1) K.MD.A.2

Reason abstractly and quantitatively. (K-ESS3-1) MP.2

Model with mathematics. (K-ESS3-1) MP.4

Counting and Cardinality (K-ESS3-1) K.CC

Unit Essential Questions

What are the 5 senses?
 What are the parts of a plant?
 What is a seed?
 Do plants grow in different habitats?
 How do people use plants?
 What is living and nonliving?
 What is a habitat?
 What are natural resources?

Unit Understandings

-Senses allow organisms to gather information about their surroundings This information can be helpful for locating food, water, or mates. Input from senses van also help an organism find shelter or avoid danger.
 -Living things have similar characteristics that distinguish them from nonliving things. All living things have certain basic needs that are necessary for them to survive, grow and reproduce.
 -Plants need water, light, air and nutrients to live and grow. Plants are different from animals because they are able to manufacture their own food using structures.
 -All living things have certain basic needs that must be met for survival. A habitat is a place where living things can get everything they need to survive.
 -All living things need water, air, and resources from the Earth to live and grow.

Unit Learning Targets (Outcomes) – Formative Assessment

Students who understand the concepts are able to ...

- identify each sense by name
- relate the corresponding body parts to each sense
- use senses to identify properties of objects
- compare and classify objects using one or more senses
- develop criteria to distinguish between living and nonliving things
- compare basic needs of plants and animals
- describe requirement for plant growth
- describe how plants can change their habitats
- understand basic needs for all animals
- compare animals that live in different habitats
- explore the relationship between humans and animals

- understand and give examples of natural resources

Cross Cutting Concepts:

Patterns

- **Patterns in the natural and human designed world can be 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)**

Cause and Effect

- **Events have causes that generate observable patterns. (K-ESS3-3)**

Structure and Function

- **The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-2)**

Integration of Technology: Web-based textbook, interactive whiteboard, interactive texts, videos, digital board builder

Technology Resources: <http://www.knowingscience.com/TeacherResources> - google drive- Kindergarten Knowing Science

Opportunities for Differentiation: Differentiation and support tips, which includes suggestions for ELL, struggling students, and accelerated students, are available below the instructional practice section of each model lesson.

Teacher Notes:

Career Ready Practices: *In this unit the following career ready practices are addressed*

CRP1: Act as a reasonable and contributing citizen and employee

CRP2: Apply appropriate academic and technical skills

CRP3: Attend to personal health and financial well-being

CRP4: Communicate clearly and effectively and with reason

CRP5: Consider the environmental, social and economic impacts of decisions

CRP6: Demonstrate creativity and innovation

CRP7: Employ valid and reliable research strategies

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them

CRP9: Model integrity, ethical leadership and effective management

CRP10: Plan education and career paths aligned to personal goals

CRP11: Use technology to enhance productivity

CRP12: Work productively in teams while using cultural global competence

Prior Learning- by the end of Grade K , students understand that:

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Evidence of Learning
Summative Assessment
N/A
Equipment needed: Whiteboard, laptops, headphones, and hands-on materials for lessons
<p>Teacher Instructional Resources:</p> <p>Brown Bear, Brown Bear, What Do You See? - Bill Martin Jr.</p> <p>My Five Senses- Aliko</p> <p>Our Eyes Can See - Jodi Lyn Wheeler-Toppen</p> <p>Our Skin Can Touch- Jodi Lyn Wheeler-Toppen</p> <p>Our Ears Can Hear- Jodi Lyn Wheeler-Toppen</p> <p>Our Noses Can Smell -Jodi Lyn Wheeler-Toppen</p> <p>Our Mouths Can Taste-Jodi Lyn Wheeler-Toppen</p> <p>Is It Alive? (Big Book) -Marcia S. Freeman/ Newbridge Educational</p> <p>Why Living Things Need... Food Water Air- Daniel Nunn</p> <p>Living and Nonliving in the.... Desert Ocean Grasslands Rainforest Polar Regions -Rebecca Rissman</p> <p>Animals and Their Babies (Big Book)-Melvin Berger / Newbridge Educational</p>

Modifications for ELL's, Special Education, 504, and Gifted and Talented Students:
<p><i>(Note: Teachers identify the modifications that they will use in the unit. See NGSS Appendix D: <u>All Standards, All Students/Case Studies</u> for vignettes and explanations of the modifications.)</i></p> <ul style="list-style-type: none"> • Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. • Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). • Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies). • Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences). • Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings. • Use project-based science learning to connect science with observable phenomena. • Structure the learning around explaining or solving a social or community-based issue. • Provide ELL students with multiple literacy strategies. • Collaborate with after-school programs or clubs to extend learning opportunities.

· Restructure lesson using UDL principles
 (http://www.cast.org/our-work/about-udl.html#.VXmoXcfD_UA)

<u>ACTIVITIES</u>	<u>MATERIALS</u>
1.1 Session 1-3 How does your sense of sight, touch, hearing help you learn?	Mystery Kit Activity Sheet 1- Mystery sounds
1.1Session 4 How does your sense of smell help you learn about the world?	Mystery Smell Kit Activity Sheet 2: Smellies
1.1Session 5 How does your sense of taste help you learn about the world?	Magnifier Activity Sheet 3: Paste the Taste
1.1Session 6 What did we learn about our senses?	My Five Sensational Senses Book
2.1Session 1 What is the difference between living and nonliving?	Collection of living and nonliving objects- teacher selection
2.1Session 2- What are the characteristics of all living things?	Living/ Nonliving Chart Activity Sheet 1 Activity Sheet 2- Living and Nonliving Sorting
2.1Session 3 What are the basic needs of plants and animals?	Activity Sheet 3: Basic Needs
2.1 Session 4 What animals is this?	Guess the Animal Kit
2.2 Session 1 What is a seed?	Seed Kit Magnifier Activity Sheet 1: A Seed or Not A Seed
2.2 Session 2 How can we plant a mini garden?	Seed Kit Plant Observation Journal Activity Sheet 3 : Popcorn Garden Directions

2.2 Session 3 What are the parts of a plant?	Activity Sheet 4:Plant Part Diagram
2.2 Session 4 Do plants grow in different habitats?	Activity Sheet 7 Plants Grow Everywhere
2.2 Session 5 How can plants affect their habitat?	Activity Sheet 8: PLants and Habitats
2.2 Session 6 How do people use plants?	Activity Sheet 9: Plants We Eat- sorting cards
2.3 Session 2 What are some ways animals can be grouped?	Assorted Plastic Animals Animal Covering Kits
<u>2.3</u> Session 2-3 How do animals meet their basic needs	Mystery Smells kit Worm Hearing Kit Animal Tongue Kit Find Your Food Kit
<u>2.4</u> Session 1 Where do people live?	Activity Sheet 1- Shelter Photos Activity Sheet 2- My Shelter
2.4 Session 2 What are natural resources?	Activity Sheet 3: Natural Resources
2.4 Session 6 What is recycling?	Recycling Kit Activity Sheet 7 Recycle IT!