

Englewood Public School District
Science
Kindergarten
Second Marking Period

Unit 2: Plants & Animals and Sun Warms Earth

Overview: In this unit of study, students will learn to use the skill of observation to describe patterns of what plants and animals need to survive. Students will analyze data by collecting, recording and sharing observations. They will use a model to show the relationship between the needs of different plants or animals and the places they live. In the second part of this unit, students will make observations to construct an evidence-based account of the effect of sunlight on the Earth's surface. Students will use tools and materials to design and build a device that protects living and non-living things. Students are expected to demonstrate grade-appropriate proficiency in *planning and carrying out investigations* and *analyzing and interpreting data*. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Time Frame: 15 – 20 days

Enduring Understandings:

All living organisms have certain needs and structures with unique functions that allow them to survive.

All living organisms depend on each other and their environment to meet their survival needs.

The Sun heats the Earth and causes weather.

Different materials on Earth are warmed by sunlight by different amounts.

Shelters and tools help protect livings from over-exposure to sunlight.

Essential Questions:

How do certain characteristics of plants and animals help them to survive?

How are animal habitats different from one another and the same?

How do animals' habitats help them survive?

How do organisms interact with each other and their environment?

What does the Sun do for us?

What is the Sun and how does it affect our temperature and seasons?

How does sunlight affect living and nonliving things?

What is the relationship of the Sun and Moon to day and night?

Standards	Topics and Objectives	Activities	Resources	Assessments
<p>K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.</p> <p>K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.</p> <p>K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.</p> <p>K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.</p>	<p>Topics</p> <p>Plants, Animals, Sunlight</p> <p>Twenty-First Century Themes and Skills include:</p> <ul style="list-style-type: none"> Information Literacy & Media Literacy The Four C's Career and life skills <p>Objectives</p> <p>Students will:</p> <p>Understand that animals and plants are found in different habitats and environments.</p> <p>Know that animals need food, water, shelter, and space to live.</p> <p>Describe different environments where animals and plants live.</p> <p>Make a model environment for animals and plants.</p> <p>Describe how many animals and plants depend on one another.</p>	<p>Topic 3: Plants and Animals</p> <p>As an introduction to the unit, students will watch a short video about Plants and Animals. (8.1.2.B.1)</p> <p>Unit 3 Project: Animal Changes: Students will work in small groups to model a way that animals change their environment.</p> <p>How do hummingbirds change the environment when they build their nests? Can you think of more than one way they might change the environment? Write or draw your ideas. Then plan and build a model nest. Students will use Animal Changes Worksheet (CRP2, CRP4, CRP6, CRP7, CRP8) (8.2.2.C.1)</p> <p>Following a teacher directed lesson on Unit 3 vocabulary, students will review digital</p>	<p>*You must be logged into the "Ed: Your Friend in Learning" platform to access the HMH links. *</p> <p>Text: <i>HMH Science Dimensions: Grade K</i></p> <p>Unit 3 Plants and Animals https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages/unit3/#cards--kk12_0103_ese_op_plantsanimals/</p> <p>Animal Changes Worksheet https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/student_resources/unitprojectworksheet/K_UPWKS_T_U3.pdf</p> <p>Materials:</p> <ul style="list-style-type: none"> construction paper Masking tape Markers or crayons Boxes Fabric Hay or straw Shredded paper Yarn 	<p>Formative Assessments: Students will maintain a science journal that includes vocabulary words, brainstorming ideas, and problems and solutions.</p> <p>Benchmark Assessment: Exact Path</p> <p>Summative Assessments: Unit 3 project: Animal Changes-Create a model of how a hummingbird changes their environment</p> <p>Hands on Activity: What Plants Need</p> <p>Unit 4: Engineering Project-Build a Shelter</p> <p>Alternative Assessment: Students will respond to oral questioning and retell the events that took place in the videos.</p> <p>Students will tell how they created the model of a nest and then justify the approach they chose to use.</p>

	<p>Understand how animals and plants can change their surroundings.</p> <p>Identify similarities and differences of plants.</p> <p>Sort plants into groups based on physical properties.</p> <p>Recognize that plants need water, air, light, soil, and space to grow.</p> <p>Predict the growth of a plant based on whether it is getting what it needs.</p> <p>Classify things as living and nonliving.</p> <p>Describe characteristics of living and nonliving things</p> <p>Identify characteristics and compare real animals and plants and pretend animals and plants.</p> <p>Compare animals by size, shape, or body coverings.</p> <p>Observe and describe similarities and differences in the appearance of animals.</p>	<p>vocabulary cards and create a science journal containing unit vocabulary words. (8.1.2.B.1, RI.K.4)</p> <p>Following a teacher guided lesson on what plants need to live and grow, students will work in pairs to answer the following: How plants change? What do Plants need to live and grow? (CRP8)</p> <p>Students will use technology to find out about living things. Students will learn what plants need to live and grow(8.1.2.B.1)</p> <p>Hands on Activity: What Plants Need</p> <p>The class will investigate what plants need by labeling two plants one with a black dot and one with a yellow dot. The plant with the yellow dot should be placed in a sunny spot, the plant with the black dot should be placed in a closet or cupboard. Plants will both be watered every 3rd day. Class will observe and</p>	<ul style="list-style-type: none"> • Twigs/sticks • leaves • Clear tape • Elastic bands • Science journal <p><i>HMH Science Dimensions: Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k2l1_0112_ese_en_whatplant_sneed_1/</p> <p><i>HMH Science Dimensions: Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k2l1_0112_ese_ee1_whatplansneed/</p> <p>Hands on Activity Worksheet: What Do Plants Need https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/student_resources/hands-onactivity/K_HOA_U3_L1.pdf</p> <p>Chart Paper</p>	<p>Students will verbally compare each group's project design and draw pictures while labeling the phases.</p> <p>Students will present their designs to the class.</p> <p>Students will make observations (firsthand or from media) to collect data that can be used to make comparisons. Rubric will be used to access journal.</p>
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	<p>Observe and describe what the sky looks like during the day.</p> <p>Recognize that the sun can only be seen in the daytime.</p> <p>Observe that the occurrence of night and day is a repeating pattern.</p>	<p>compare the plants and observe a pattern. Class will make a claim and provide evidence to what they observed.(CRP6, CRP4, CRP2, CRP8) (W.K.7) (SL.K.3)</p> <p>Using the teacher modeling, students will write the answers to the following in their science journals: What do plants need to live and grow? Write three things a plant needs. Tell how these things are part of a pattern.</p> <p>Following a teacher led lesson, students will work in pairs to determine what else plants need to live and grow (Air and Space).</p> <p>Students will learn about Dr. Norma Alcantar, a scientist who works with plants by watching a short video. (9.2.4.A.1, 9.2.4.A.3)</p> <p>Students will use a digital textbook to explore what animals need to live and grow. Students will watch a</p>	<p>Science Journals</p> <p><i>HMH Science Dimensions: Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k2l1_0112_ese_tif_whatplant_sneed_1/</p> <p><i>HMH Science Dimensions: Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k2l1_0113_ese_en_whatanimalsneed_1/</p> <p>Interactive Venn Diagram http://www.readwritethink.org/files/resources/interactives/venn_diagrams/</p> <p><i>What People Need-HMH Science Dimensions</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k2l1_0113_ese_en_whatanimalsneed_1/</p>	
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		<p>video about a raccoon (8.1.2.E.1, 8.1.2.B.1) (RI.K.1.)</p> <p>Students will work whole group to complete a Venn Diagram comparing the needs of a raccoon to the needs of a plant. (8.1.2.E.1, 8.1.2.B.1) (SL.K.3)</p> <p>Students will watch a short video to learn what people need to live and grow.</p> <p>Students will draw pictures in their science journals showing what people need to live and grow. Students will share their drawings with a partner and discuss if they see a pattern. (8.2.2.C.1, 8.1.2.E) (CRP4, CRP2, CRP8)</p> <p>Students will watch a short video to learn what animals need to live and grow.</p> <p>Students will draw pictures in their science journals showing what animals need</p>	<p><u>ns/na/grk/eSE 9780544709157 /book pages unit3/#card s-- k2l1 0113 ese ee1 whatani malsneed/</u></p> <p>Science Journal</p> <p><i>HMH Science Dimensions: Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k2l1_0113_ese_ee2_whatani_malsneed/</p>	
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		<p>to live and grow. Students will share their drawings with a partner and discuss if they see a pattern. (8.2.2.C.1, 8.1.2.E) (CRP4, CRP2, CRP8)</p> <p>Students will choose an animal, draw it getting what it needs. Students should use pictures and words as evidence. Students will share their animals with a classmate. (CRP6, CRP4, CRP2, CRP8)</p> <p>Extension Activity-Hands on Activity: <i>Pill Bug Home</i></p> <p>Students will create their own pill bug home. Using given materials and pill bugs, students will create a terrarium and observe the pill bug over a week and determine whether or not the see a pattern with what the pill bug needs to survive.</p> <p>Students will learn why animals need water and air</p>	<p>Hands on Activity: <i>Pill Bug Home</i> Worksheet https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/student_resources/handsonactivity/K_HOA_U3_L2.pdf</p> <p>Materials: Worksheet Clear plastic cups Pill bugs Potting soil Fresh leaves and twigs</p>	
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		<p>to live and grow by watching a video.</p> <p>Students will work in pairs to view pictures of a set of two animals next to a measuring cup with the daily amount of water each animal needs. Students will orally determine which animals need the most water every day.</p> <p>Topic 4: The Sun Warms Earth</p> <p>As an introduction to the topic <i>The Sun Warms Earth</i> students will watch a short video about a lizard lying out in the sun.</p> <p>Unit 4 Performance Task: Engineering Project: Build a Model Shelter</p> <p>With prompting and support students will work in small groups to design and build a model shelter using given</p>	<p><i>HMH Science Dimensions:</i> <i>Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k21l_0113_eSE_ee2_whatani_malsneed/</p> <p><i>HMH Science Dimensions:</i> <i>Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit3/#cards--k21l_0113_eSE_ee3_whatani_malsneed_1/</p> <p><i>HMH Science Dimensions:</i> <i>Grade K- Student Digital text</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit4/#cards--kke2_0104_eSE_op_sunwarm_searth/</p> <p>Performance Task: <i>Engineering Project: Build a Model Shelter</i> https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit4/#cards--kke2_0104_eSE_op_sunwarm_searth/</p>	
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		<p>materials. The shelter will protect you from the sun when you are on the beach. (CRP2, CRP4, CRP6, CRP7, CRP8) (8.2.2.C.1, 8.1.2.E.1)</p> <p>Once shelter is built, students will test and improve upon their shelter design. (CRP2, CRP4, CRP6, CRP8) (8.2.2.C.1) (9.2.4.A.1) (RI.K.1)</p> <p>Following a teacher directed lesson on Unit 4 vocabulary, students will review digital vocabulary cards and write new vocabulary in their science journal (8.1.2.B.1) (RI.K.1) (W.K.7)</p> <p>Students will watch a short video about how the sun affects Earth? Students will work in pairs to discuss how the sun affects earth. (SL.K.3)</p> <p>Following a teacher led lesson, Students will learn about the Sun's light and how the sun helps us see things. Then</p>	<p>/na/grk/eSE_9780544709157/unitperfor_mancetask/K_UPTWKST_U4.pdf</p> <p>Materials:</p> <ul style="list-style-type: none"> • Box top • Sand • Chenille sticks • Construction paper <p>Science Journal</p> <p>The Sun's Heat and Light: How does the sun affect Earth? https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit4/#cards--k2e1_0104_eSE_en_howsunwarmsearth_1/</p> <p>HMH Science Dimensions: Grade K- Student Digital text https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages_unit4/#cards--k2e1_0104_eSE_ee1_howsunwarmsearth/</p> <p>Science Journal</p>	
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		<p>they will draw a picture of something the sun helps them see in their science journal. (8.1.2.B.1)</p> <p>Students will apply what they know and investigate how a flashlight works in a dark room. Students will compare the flashlight to the sun. (K.MD.A.2, MP.5)</p> <p>Following a teacher led lesson on the sun's heat, students will investigate how the sun warms the earth. Students will work in pairs and discuss examples of the sun melting ice and the sun warming things up or creating heat.</p> <p>Hands-On Activity: <i>The Sun's Heat</i></p> <p>Students will conduct an experiment and determine how heat from the sun affects Earth. Students will place pebbles on two plates and expose one plate to direct sunlight and keep the other plate out of the sun. Students will then compare how each set of pebbles feel and document their</p>	<p>Post-it Notes</p> <p>T-Chart</p> <p>Hands-On Activity: <i>The Sun's Heat</i> worksheet https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/student_resources/handsonactivity/K_HOA_U4_L1.pdf</p> <p>Materials: Pebbles Paper plates</p> <p>HMH Science Dimensions: Grade K- Student Digital text https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157/book_pages/unit4/#cards--k2e1_0104_ese_tif_howsunwarmsearth_1/</p> <p>Post-it notes</p> <p>Crayons</p>	
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		<p>outcomes on the worksheet. (K.MD.A.2, MP.2) (8.2.2.C.1) (CRP2, CRP4, CRP6, CRP8) (8.2.2.C.1) (RI.K.1)</p> <p>Extension Activity: Students will watch a video about Galileo Galilei the astronomer who invented a telescope that could see sunspots on the sun. (9.2.4.A.1, 9.2.4.A.2, 9.2.4.A.3)</p> <p>Students will generate a list of other things that give off light and draw a picture of the object which gives off light on a post-it note and place it on chart paper.</p>	<p>Additional Texts:</p> <p>Readworks.org: Life Science and Earth & Space Science Texts: <i>Deserts</i> <i>Galileo Galilei</i> <i>From Morning to Night</i> <i>A Big Star</i> <i>Sunlight in Winter</i> <i>Bright as the Sun</i> <i>How Plants Get Water and Food</i> <i>How Plants Work</i> <i>Animals Eat Earthworms</i> <i>Animals Build Homes</i> <i>How Do Seeds Grow?</i> https://www.readworks.org/technology-engineering-passages#!s0:373,356/q:/g:16/t:0/s:356/k:/cid:/f:0/pt:A/features:/staff_picks:/sel:/</p>	
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Accommodations and Modifications:

Students with special needs: Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders.

Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered.

ELL/ESL students: Students will be supported according to the recommendations for “can do’s” as outlined by WIDA –

https://www.wida.us/standards/CAN_DOs/

This particular unit has limited language barriers due to the physical nature of the curriculum.

Students at risk of school failure: Formative and summative data will be used to monitor student success at first signs of failure student work will be reviewed to determine support.

This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations.

More time and will be made available with a certified instructor to aid students in reaching the standards.

Gifted and Talented Students: Students excelling in mastery of standards will be challenged with complex, high level challenges related to the complexity in planning and carrying out Investigations and analyzing and interpreting data.

English Language Learners	Special Education	At-Risk	Gifted and Talented
<ul style="list-style-type: none"> ● Speak and display terminology ● Teacher modeling ● Peer modeling ● Provide ELL students with multiple literacy strategies. ● Word walls ● Use peer readers ● Give page numbers to help the students find answers ● Provide a computer for written work ● Provide two sets of textbooks, one for home and one for school ● Provide visual aides ● Provide additional time to complete a task 	<ul style="list-style-type: none"> ● Utilize modifications & accommodations delineated in the student's IEP ● Work with paraprofessional ● Use multi-sensory teaching approaches. ● Work with a partner ● Provide concrete examples ● Restructure lesson using UDL principals (http://www.cast.org/our-work/about-udl.html#.VXmoXcfD-UA). ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, 	<ul style="list-style-type: none"> ● Using visual demonstrations, illustrations, and models ● Give directions/instructions verbally and in simple written format. Oral prompts can be given. ● Peer Support ● Increase one on one time ● Teachers may modify instructions by modeling what the student is expected to do ● Instructions may be printed out in large print and hung up for the student to see during the time of the lesson. ● Review behavior expectations and make adjustments for personal 	<ul style="list-style-type: none"> ● Curriculum compacting ● Inquiry-based instruction ● Independent study ● Higher order thinking skills ● Adjusting the pace of lessons ● Interest based content ● Real world scenarios ● Student Driven Instruction ● 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.

<ul style="list-style-type: none"> • Use graphic organizers 	<p>graphs, charts, data tables, multimedia, modeling).</p>	<p>space or other behaviors as needed.</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 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). 	<ul style="list-style-type: none"> • Collaborate with after-school programs or clubs to extend learning opportunities.
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Interdisciplinary Connections:

ELA - NJSL/ELA:

NJSLA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K- PS2-2)

RI.K.4. With prompting and support, ask and answer questions about unknown words in a text.

W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1)

SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)

Mathematics:

MP.2 Reason abstractly and quantitatively. (K- PS2-1)

MP.5 Use appropriate tools strategically. (K-2-ETS1-2)

K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K- PS2-1)

K.MD.A.2 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-PS2- 1)

Social Studies:

6.1.4.B.9 Relate advances in science and technology to environmental concerns, and to actions taken to address them.

Career Ready Practices:

CRP2. Apply appropriate academic and technical skills.

CRP7. Employ valid and reliable research strategies.

CRP6: Demonstrate creativity and innovation.

CRP4: Communicate clearly and effectively and with reason.

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

Integration of Technology Standards NJSLS 8:

8.1.2.E.1: Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1: Illustrate and communicate original ideas and stories using multiple digital tools and resources.

8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product.

Integration of 21st Century Standards NJSLS 9:

9.2.4.A.1: Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.

9.2.4.A.3: Investigate both traditional and nontraditional careers and related information to personal likes and dislikes.

Key Vocabulary:

Animals, Plants, Living Things, Nonliving Things, Shelter, Water, Environment, Light, Heat, Sunlight, Shade, Warm, Earth