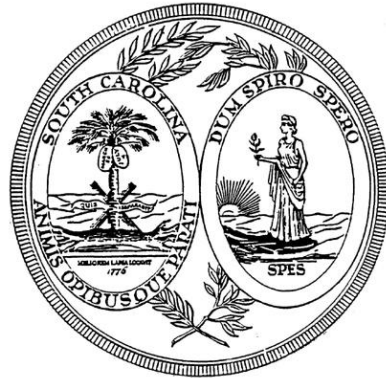


South Carolina Academic Standards and Performance Indicators for Science 2014



Instructional Unit Resource
Kindergarten

South Carolina Academic Standards and Performance Indicators for Science 2014

Kindergarten Science Instructional Unit Resource

As support for implementing the *South Carolina Academic Standards and Performance Indicators for Science 2014*, the standards for Kindergarten have been grouped into possible units. In the Overview of Units below, the titles for those possible units are listed in columns. Refer to the Overview document to note these unit titles and how Standards, Conceptual Understandings, Performance Indicators, Science and Engineering Practices, and Crosscutting Concepts align. Following the Overview of Units, an Instructional Unit document is provided that delivers guidance and possible resources in teaching our new *South Carolina Academic Standards and Performance Indicators for Science 2014*. The purpose of this document is to provide guidance as to how all the standards in this grade may be grouped into units and how those units might look. Since this document is merely guidance, districts should implement the standards in a manner that addresses the district curriculum and the needs of students. This document is a living document and instructional leaders from around the state will continuously update and expand these resource documents. These documents will be released throughout the 2016-2017 school year with the intentionality of staying ahead of instruction. Teachers should also note that links to the Standards document, A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas, the SEP Support Document, and the Support Document 2.0 are embedded throughout the Instructional Unit format for reference.

Acknowledgments

Jean Baptiste Massieu, famous deaf educator, made a statement that is now considered a French proverb. “Gratitude is the memory of the heart. Indeed, appreciation comes when you feel grateful from the depths of your heart. The head keeps an account of all the benefits you received and gave. But the heart records the feelings of appreciation, humility, and generosity that one feels when someone showers you with kindness.” It is with sincere appreciation that we humbly acknowledge the dedication, hard work and generosity of time provided by teachers and instructional leaders across the state that have made and are continuing to make the Instructional Unit Resources possible.

Kindergarten Overview of Units

Unit 1	Unit 2	Unit 3
LIFE SCIENCE: EXPLORING ORGANISMS AND THE ENVIRONMENT	EARTH SCIENCE: EXPLORING WEATHER PATTERNS	PHYSICAL SCIENCE: EXPLORING PROPERTIES OF OBJECTS AND MATERIALS
Standard	Standard	Standard
K.L.2	K.E.3	K.P.4
Conceptual Understanding	Conceptual Understanding	Conceptual Understanding
K.L.2A	K.E.3A	K.P.4A
Performance Indicators	Performance Indicators	Performance Indicators
K.L.2A.1 K.L.2A.2 K.L.2A.3 K.L.2A.4 K.L.2A.5 K.L.2A.6	K.E.3A.1 K.E.3A.2 K.E.3A.3 K.E.3A.4	K.P.4A.1 K.P.4A.2 K.P.4A.3
*Science and Engineering Practices	*Science and Engineering Practices	*Science and Engineering Practices
K.S.1A.2 K.S.1A.3 K.S.1A.4 K.S.1A.6 K.S.1A.8	K.S.1A.2 K.S.1A.4 K.S.1A.8 K.S.1B.1	K.S.1A.1 K.S.1A.3 K.S.1A.4 K.S.1A.8
*Crosscutting Concepts	*Crosscutting Concepts	*Crosscutting Concepts
1,2,6	1,2,7	1,3

**Teachers have the discretion to enhance the selected SEP's and CCCs.*

Unit Title
Life Science: Exploring Organisms and the Environment
Standard
http://ed.sc.gov/scdoe/assets/file/agency/ccr/Standards-Learning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf
K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

New Academic Vocabulary

Some students may need extra support with the following academic vocabulary in order to understand what they are being asked to understand and do. Teaching these terms in an instructional context is recommended rather than teaching the words in isolation. A great time to deliver explicit instruction for the terms would be during the modeling process. Ultimately, the student should be able to use the academic vocabulary in conversation with peers and teachers. These terms are pulled from the essential knowledge portion of the Support Doc 2.0 (<http://ed.sc.gov/instruction/standards-learning/science/support-documents-and-resources/>) and further inquiry into the terms can be found there.

Organisms	Environment	Plant	Animal	Fungi
Decaying	Nutrients	Resource	Shelter	Air
Light	Water	Senses	Camouflage	Protection

Performance Indicators

Text highlighted below in *orange* and *italicized/underlined* shows connections to SEP's

K.L.2A.1 *Obtain information* to answer questions about different organisms found in the environment (such as plants, animals, or fungi).

K.L.2A.2 *Conduct structured investigations* to determine what plants need to live and grow (including water and light).

K.L.2A.3 *Develop and use models* to exemplify how animals use their body parts to (1) obtain food and other resources, (2) protect themselves, and (3) move from place to place.

K.L.2A.4 Analyze and interpret data to describe how humans use their senses to learn about the world around them.

K.L.2A.5 Construct explanations from observations of what animals need to survive and grow (including air, water, nutrients, and shelter).

K.L.2A.6 Obtain and communicate information about the needs of organisms to explain why they live in particular areas.

*Science and Engineering Practices

Support for the guidance, overviews of learning progressions, and explicit details of each SEP can found in the Science and Engineering Support Doc (http://ed.sc.gov/scdoe/assets/File/instruction/standards/Science/Support%20Documents/Complete_2014SEPsGuide_SupportDoc2_0.pdf). It is important that teachers realize that the nine science and engineering practices are not intended to be used in isolation. Even if a performance indicator for a given standard only lists one of the practices as a performance expectation, scientists and engineers do not use these practices in isolation, but rather as part of an overall sequence of practice. When educators design the learning for their students, it is important that they see how a given performance expectation fits into the broader context of the other science and engineering practices. This will allow teachers to provide comprehensive, authentic learning experiences through which students will develop and demonstrate a deep understanding of scientific concepts.

K.S.1A.2 Develop and use models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others.

K.S.1A.3 With teacher guidance, conduct structured investigations to answer scientific questions, test predictions and develop explanations: (1) predict possible outcomes, (2) identify materials and follow procedures, (3) use appropriate tools or instruments to make qualitative observations and take nonstandard measurements, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.

K.S.1A.4 Analyze and interpret data from observations, measurements, or investigations to understand patterns and meanings.

K.S.1A.6 Construct explanations of phenomena using (1) student-generated observations and measurements, (2) results of investigations, or (3) data communicated in graphs, tables, or diagrams.

K.S.1A.8 Obtain and evaluate informational texts, observations, data collected, or discussions to (1) generate and answer questions about the natural world, (2) understand phenomena, (3) develop models, or (4) support explanations. Communicate observations and explanations using oral and written language.

*Cross Cutting Concepts (<http://www.nap.edu/read/13165/chapter/8>)

The link above provides support from the Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas (2012) The text in blue and italicized/underlined below provides a brief explanation of how the specific content ties to the CCC's.

1. **Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). Observe and classify organisms by how they meet their needs.
2. **Cause and Effect:** The National Research Council (2012) states “events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts” (p. 84). During investigations determine the needs of

organisms by limiting resource. Observe and explain why organisms live in particular areas.

6. **Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). Observe and describe the structure of organisms that help them meet their needs, grow, and survive.

**Teachers have the discretion to enhance the selected SEP’s and CCC’s.*

Prior Knowledge

- N/A

Subsequent Knowledge

- 5.L.4B.1
- 6.L.4A.2 Fungi

Possible Instructional Strategies/Lessons

Strategies and lessons that will enable students to master the standard and/or indicator.

- K.L.2A.1 Nature Walk Take a nature walk or go on a School Yard Exploration (Journaling/Notebooking).
Hula Hoop Activity (See appendices) Analyze and interpret data about organisms in the environment.
- K.L.2A.2 Seed Germination Lab (See appendices) Analyze and interpret data about different seed germination.
Plant/Fungi experiments (See appendices) Conduct structured investigations to determine growth under different conditions.
- K.L.2A.3 Bird Beak Buffet Through hands-on models, students will learn that food is limited by the type of beak a particular bird species has. This resource can be found at :http://www.projectwild.org/growingupwild/Bird_Beak_Buffet.pdf
Exploring Animal Camouflage Take it further with an outdoor learning activity called “Now You See Me, Now You Don’t”. This resource can be found at: http://www.pbs.org/parents/catinthehat/activity_exploring_animal_camouflage.html

How do I meet my needs? (See appendices) Obtain information about animals to determine how certain structures help them meet their needs. Develop and use models.

- K.L.2A.4 Activities on the Five Senses (See appendices) Obtain and evaluate information about the five senses.
- K.L.2A.5 Animal Observations (See appendices) Record animal observations about class pets. Obtain and evaluate information about animals to determine what they need to survive and how they meet their needs.
- K.L.2A.6 Is this a good place to live? (See appendices) Construct explanations as to why animals are suited to live in certain locations.

Resources

- Use the Education tab and click on “The Fungus Files” to find grade-specific activities on fungi. This resource can be found at: http://www.namyco.org/lesson_plan.php
- Great interactives! This is free, but you have to join. This resource can be found at: <http://www.watchknowlearn.org/>
- List of possible books you may want to include in your lessons. This resource can be found at: <http://commoncore.dadeschools.net/docs/science/Elementary%20Science/PPSFavoriteBooksK-6.pdf>

Sample Formative Assessment Tasks/Questions

Additional sample formative assessment tasks/questions for grade bands are located at the end of each of the SEP Support Doc (http://ed.sc.gov/scdoe/assets/File/instruction/standards/Science/Support%20Documents/Complete_2014SEPsGuide_SupportDoc2_0.pdf)

- K.L.2A.2 Students will be given several scenarios involving amount of water, light, and nutrients. Students will assess which plant will most likely show the most growth and justify their answers.
- K.L.2A.2; K.L.2A.5 Students will create a model that depicts a plant (or animal) including items that are required by that organism to show that all of its needs are being met.

- K.L.2A.4 Students will be given a description of events taking place around them (example: smell something burning, see dark grey smoke, hear a siren). They must analyze and evaluate the information to draw conclusions about what is happening and what they need to do in order to remain safe.
- K.L.2A.5 Students will be asked to create a fictitious animal for a given habitat. They must include structures that ensure that the animal can survive in this habitat.
- K.L.2A.6 Students will be assigned a habitat and given two pictures of animals. Students will assess which animal is best suited for living in that habitat and justify their answers citing evidence such as structures/adaptations that increase the chances of survival.

References

Ansbury, K., & Morgan, E. (n.d.). *Picture Perfect Science: Favorite Children's Picture Books for Teaching Science Grades 1-6*. [PDF]. Retrieved August 3, 2016, from <http://commoncore.dadeschools.net/docs/science/Elementary%20Science/PPSFavoriteBooksK-6.pdf>.

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North American Mycological Society (2016). The Fungus Files. Retrieved August 3, 2016, from http://www.namyco.org/lesson_plan.php

US Department of Education. (n.d.) Now You See Me. Now You Don't! PBS.org. Retrieved August 3, 2016, from http://www.pbs.org/parents/catinthehat/activity_exploring_animal_camouflage.html

Kindergarten – Exploring Organisms and the Environment

Hula Hoop Activity

Materials:

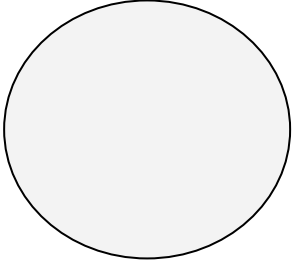
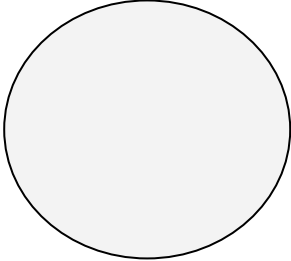
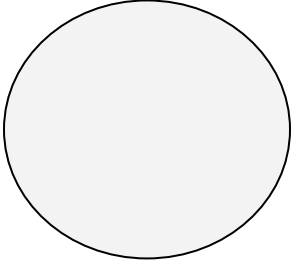
- Hula Hoops
- pencils

Procedures:

Observe and classify organisms by how they meet their needs. Set up three stations using different Hula Hoops outside. Explain to the students that they are going to look for different types of plants, animals, and fungi within the different Hula Hoops. First make a prediction of which Hula Hoop will have the most living things. They will draw what they find on their Student Lab Worksheet. The teacher can take a photo of each Hula Hoop for classroom discussions. The key vocabulary in this activity include: organism, environment, plant, animal, and fungi.

As a class, compare the plants, animals, and fungi found in each Hula Hoop. Sort these by number. As an extension activity with literature connections, students can read and discuss various plant, animal, and fungi books from the school library or from internet resources.

Student Lab Worksheet

1	2	3
		

Kindergarten – Exploring Organisms and the Environment

Hula Hoop Activity

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators

K.L.2A.1 [Obtain information](#) to answer questions about different organisms found in the environment (such as plants, animals, or fungi).

Science and Engineering Practices

[K.S.1A.8 Obtain and evaluate](#) informational texts, observations, data collected, or discussions to (1) generate and answer questions about the natural world, (2) understand phenomena, (3) develop models, or (4) support explanations. [Communicate](#) observations and explanations using oral and written language.

Cross Cutting Concepts

1. **Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). [Observe and classify organisms by how they meet their needs.](#)
2. **Cause and Effect:** The National Research Council (2012) states “events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts” (p. 84). [During investigations determine the needs of organisms by limiting resources. Observe and explain why organisms live in particular areas.](#)
6. **Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). [Observe and describe the structure of organisms that help them meet their needs, grow, and survive.](#)

References

South Carolina Department of Education. (2015). South Carolina Academic Standards and Performance Indicators for Science 2014. Retrieved from http://ed.sc.gov/scdoe/assets/file/agency/ccr/StandardsLearning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf

Kindergarten – Exploring Organisms and the Environment

Seed Germination Lab

Materials:

- several different types of seeds
- plastic sandwich bags (zipper type)
- paper towel
- Water

Procedures:

Place several different types of seeds on a damp paper towel. Close the bag and place in a sunny area. Let students observe their bags of seeds each day and record what they notice. You may want to have students measure the plant as the seeds sprout.

Activity Summary: As a class, discuss what they notice about the different types of seeds. Discuss how they are alike and any differences they notice.

Student Lab Sheet:

	Observations		
	Seed 1	Seed 2	Seed 3
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			

Kindergarten – Exploring Organisms and the Environment

Seed Germination Lab

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators

K.L.2A.2 [Conduct structured investigations](#) to determine what plants need to live and grow (including water and light).

Science and Engineering Practices

K.S.1A.3 With teacher guidance, [conduct structured investigations](#) to answer scientific questions, test predictions and develop explanations: (1) predict possible outcomes, (2) identify materials and follow procedures, (3) use appropriate tools or instruments to make qualitative observations and take nonstandard measurements, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.

Cross Cutting Concepts

- Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). [Observe and classify organisms by how they meet their needs.](#)
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- Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). [Observe and describe the structure of organisms that help them meet their needs, grow, and survive.](#)

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Kindergarten – Exploring Organisms and the Environment

Plant Experiment

Materials:

- seedlings
- cups for various plants
- soil
- areas with light and a box for no light
- water

Procedures:

After germinating seeds, place the seedlings in three situations for growth; soil, water, and light. Each group will consist of 4 seedlings.

- *Group 1* will test the effects of soil; two seedlings with soil and two with no soil. Group 1 will be given the same amount of water and light.
- *Group 2* will test the effects of water; two seedlings with water and two with no water. Group 2 will be given the same amount of soil and light.
- *Group 3* will test the effects of light; two seedlings with light and two with no light. Group 3 will be given the same amount of water and soil.

Using the Student Observation Sheet, students will place a check in the box they predict will grow the best. Have students observe the plants in each group different days during the unit.

Activity Summary: As a class, on chart paper, write a letter to advise people on what they should do to grow a plant and keep it healthy.

Student Lab Sheet: Put a check in the box of the plant that is growing.

	Group 1		Group 2		Group 3	
	Soil	No Soil	Light	No Light	Water	No Water
My Prediction						
1st Observation						
2nd Observation						
3rd Observation						
4th Observation						

Kindergarten – Exploring Organisms and the Environment

Fungi Experiment

Materials:

- bread
- plastic sandwich bags (ziploc)
- paper towels
- areas with light and a box for no light
- water

Procedures:

Place slices of bread in different situations for mold (fungi) growth.

- Place one slice of bread inside a plastic bag with a dry paper towel. This slice will be left in the light.
- Place another slice of bread inside a plastic bag with a dry paper towel. This slice will be placed inside a box.
- Place a third slice of bread inside a plastic bag with a damp paper towel. This slice will be left in the light.
- Place another slice of bread inside a plastic bag with a damp paper towel. This slice will also be placed inside the box.
- Using the Student Observation Sheet, students will place a check in the box they predict will grow mold the fastest. Have students observe the bread over several days to several weeks.

Activity Summary: As a class, on chart paper, write a letter to advise people on what they should do to prevent their bread from getting moldy.

Student Lab Sheet: Put a check in the box of the bread that is growing mold.

	Group 1	Group 2	Group 3	Group 4
	Dry and in the light	Damp and in the light	Dry and in the dark	Damp and in the dark
My Prediction				
1st Observation				
2nd Observation				
3rd Observation				
4th Observation				

Kindergarten – Exploring Organisms and the Environment

Plant/Fungi Experiments

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators:

K.L.2A.2 [Conduct structured investigations](#) to determine what plants need to live and grow (including water and light).

Science and Engineering Practices

K.S.1A.3 With teacher guidance, [conduct structured investigations](#) to answer scientific questions, test predictions and develop explanations: (1) predict possible outcomes, (2) identify materials and follow procedures, (3) use appropriate tools or instruments to make qualitative observations and take nonstandard measurements, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.

Cross Cutting Concepts

- Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). [Observe and classify organisms by how they meet their needs.](#)
- Cause and Effect:** The National Research Council (2012) states “events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts” (p. 84). [During investigations determine the needs of organisms by limiting resources. Observe and explain why organisms live in particular areas.](#)
- Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). [Observe and describe the structure of organisms that help them meet their needs, grow, and survive.](#)

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Kindergarten – Exploring Organisms and the Environment

How Do I Meet My Needs?

Materials:

- various images of animals with different structures found in the support documents (shells, gills, webbed feet, different beaks, scales, etc.)

Procedures:

As a class show students images of animals that are familiar to them. Discuss the structures on the animals that aid in meeting the needs of food, water, air, and shelter (you may want to include protection and movement in the discussion as well).

Break students into groups with several different images and monitor group discussions about how the animals in the new images have structures that help the animals meet their needs. Have students create a model of a “new animal” that they have discovered. Students should explain how they meet their needs (food, water, shelter, air, movement, protection).

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators

K.L.2A.3 *Develop and use models* to exemplify how animals use their body parts to (1) obtain food and other resources, (2) protect themselves, and (3) move from place to place.

Science and Engineering Practices

K.S.1A.2 *Develop and use models* to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others.

Cross Cutting Concepts

1. **Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). [Observe and classify organisms by how they meet their needs.](#)
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Kindergarten – Senses Activities Exploration of Organisms and the Environment

Activities on the Five Senses:

Taste Test

Materials:

- salt
- sugar
- lemon juice
- bags for dipping
- base piece for tasting (Possible examples: cube of raw potato, small fruit with a similar consistency, a small piece of drinking straw/coffee stirrer)

Procedures:

Discuss how the tongue helps people to identify various tastes such as sour, salty, and sweet. Let students conduct a taste test of materials. You can use chunks of apples, potatoes, or small straw dipped in water to moisten them. Dip the items into sugar (Test A), salt (Test B), and lemon juice (Test C). Test D will be the item itself. Have students conduct a taste test. In order for students to collect data, have them record their observations in a table or on chart paper as a class. Lead a discussion about what students observed. Discuss the data that they gathered. Be sure to include how this sense helps them.

Student Lab Sheet

	Salty	Sweet	Sour
Test A			
Test B			
Test C			
Test D			

Kindergarten – Senses Activities Exploration of Organisms and the Environment

Activities on the Five Senses:

Scent Activity

Materials:

- small opaque containers (like film canisters)
- cotton balls
- various household items with distinguished scents

Procedures:

Prepare small containers (film canisters or other small, opaque containers) by punching tiny holes in the lids. Add small amounts of familiar household items such as toothpaste, vinegar, lemon juice, liquid smoke, vanilla, etc. and cover the substances with a cotton ball before closing the lid. Pass the containers around and let students guess the scent. You may record guesses and have students explain their guesses. Lead a discussion about what students observed. Discuss the data that they gathered. Be sure to include how this sense helps them.

Student Lab Sheet

Containers	Draw or write your guess:
Container 1	
Container 2	
Container 3	
Container 4	
Container 5	

Kindergarten – Senses Activities Exploration of Organisms and the Environment

Activities on the Five Senses:

Sight/Touch Activities

Materials:

- handkerchief or paper/string blindfolds
- sorting items
- stopwatch/timer

Procedures:

Blindfold students and have them sort items using their sense of touch. You could have them sort items based on shape, texture, size, etc. You may want to time students with and without the blindfold to gather data on how sight affects their sorting abilities. Discuss what would happen if the items were sorted based on color? Lead a discussion about what students observed. Discuss the data that they gathered. Be sure to include how this sense helps them.

Student Lab Sheet

	Time with blindfold	Time without blindfold
Sort 1		
Sort 2		
Sort 3		

Kindergarten –Exploration of Organisms and the Environment

Activities on the Five Senses:

Sound Activities

Materials:

- small opaque containers (plastic Easter eggs)
- various small materials that can be used to create different sounds

Procedures:

Prepare plastic small containers (can be plastic Easter eggs) by putting different objects in them that students are familiar with such as uncooked rice, pebbles, sand, erasers, marbles, coins, etc.. Pass the containers around and have students guess what the items are in the container. (You may want to create a chart for students to mark what they think is in each container.) Lead a discussion about what students observed. Discuss the data that they gathered. Be sure to include how this sense helps them.

Student Lab Sheet

	Rice	Marbles	Erasers	Pebbles
Container 1				
Container 2				
Container 3				
Container 4				

Possible questions:

- Which was the hardest sound to identify?
- Which was the easiest sound to identify?
- Which containers had sounds that were alike? Why do you think they sounded alike?

Kindergarten –Exploration of Organisms and the Environment

Activities on the Five Senses:

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators

K.L.2A.4 [Analyze and interpret data](#) to describe how humans use their senses to learn about the world around them.

Science and Engineering Practices

K.S.1A.4 [Analyze and interpret data](#) from observations, measurements, or investigations to understand patterns and meanings.

Cross Cutting Concepts:

1. **Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). [Observe and classify organisms by how they meet their needs.](#)
2. **Cause and Effect:** The National Research Council (2012) states “events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts” (p. 84). [During investigations determine the needs of organisms by limiting resources. Observe and explain why organisms live in particular areas.](#)
6. **Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). [Observe and describe the structure of organisms that help them meet their needs, grow, and survive.](#)

References

South Carolina Department of Education. (2015). South Carolina Academic Standards and Performance Indicators for Science 2014. Retrieved from http://ed.sc.gov/scdoe/assets/file/agency/ccr/StandardsLearning/documents/South_Carolina_Academic_Standards_and_Performance_Indicators_for_Science_2014.pdf

Kindergarten – Exploring Organisms and the Environment

Animal Observations

Materials:

- Animals to observe
- Journal

Procedures:

Students should keep a daily journal about the animal they are observing. (You may want to borrow additional class pets from other teachers, perhaps collect grasshoppers or other “safe” animals to keep temporarily in a closed aquarium for this activity.) As part of the journal, you may want to include the following table for students to record data as they observe the animals meeting their different needs.

Student Lab Sheet

Need	How does the animal meet its needs?
Air	
Water	
Nutrients (food)	
Shelter	
Movement	
Protection	

Kindergarten – Exploring Organisms and the Environment

Animal Observations

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators

K.L.2A.5 Construct explanations from observations of what animals need to survive and grow (including air, water, nutrients, and shelter).

Science and Engineering Practices

K.S.1A.6 Construct explanations of phenomena using (1) student-generated observations and measurements, (2) results of investigations, or (3) data communicated in graphs, tables, or diagrams.

Cross Cutting Concepts

1. **Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). Observe and classify organisms by how they meet their needs.
2. **Cause and Effect:** The National Research Council (2012) states “events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts” (p. 84). During investigations determine the needs of organisms by limiting resources. Observe and explain why organisms live in particular areas.
6. **Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). Observe and describe the structure of organisms that help them meet their needs, grow, and survive.

References

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Kindergarten – Exploring Organisms and the Environment

Is This A Good Place To Live?

Materials:

- Images of various animals from different ecosystems (desert, forest, ocean, tundra, etc.)
- Chart or sheet with different ecosystems for the sort

Procedures:

Start by having students classify familiar organisms into the ecosystems in which they live. Then take each group and talk about those structures that help them survive in their ecosystem (similar to the “How do I meet my needs?” sort). Next provide students with an example of an ecosystem and a less familiar animal - ask students “Is this a good place to live?” Have student groups answer if it is a good place for that animal or not and have them justify their answers. Provide some sets that are a good match and some that are not. As a summary have students select an animal and an ecosystem of their choice and explain why it is a good place to live or not a good place to live.

Standard

K.L.2 The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.

Conceptual Understanding

K.L.2A The environment consists of many types of organisms including plants, animals, and fungi. Organisms depend on the land, water, and air to live and grow. Plants need water and light to make their own food. Fungi and animals cannot make their own food and get energy from other sources. Animals (including humans) use different body parts to obtain food and other resources needed to grow and survive. Organisms live in areas where their needs for air, water, nutrients, and shelter are met.

Performance Indicators

K.L.2A.5 *Construct explanations* from observations of what animals need to survive and grow (including air, water, nutrients, and shelter).

Science and Engineering Practices

K.S.1A.6 *Construct explanations* of phenomena using (1) student-generated observations and measurements, (2) results of investigations, or (3) data communicated in graphs, tables, or diagrams.

Cross Cutting Concepts

1. **Patterns:** The National Research Council (2012) states “observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them” (p. 84). [Observe and classify organisms by how they meet their needs.](#)
2. **Cause and Effect:** The National Research Council (2012) states “events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts” (p. 84). [During investigations determine the needs of organisms by limiting resources. Observe and explain why organisms live in particular areas.](#)
6. **Structure and Function:** The National Research Council states, “the way in which an object or living thing is shaped and its substructure determine many of its properties and functions” (p. 84). [Observe and describe the structure of organisms that help them meet their needs, grow, and survive.](#)

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