Ecosystem Explorers, Kindergarten Study Guide

Overview of Program: Students will observe, analyze, and interpret patterns between what plants, animals, and humans need to survive. As they hike through our trails they will survey our meadow area to determine different types of food items animals eat in nature, build a model to demonstrate how animals and humans can change the environment, touch, smell, and taste different natural resource items, and enact how they can help reduce the impact humans have on the local environment. Students also have time to take in nature and learn ways to appreciate its beauty.

Objective of Study Guide: This study guide is offered to provide short and simple activities that can be completed in a classroom setting. These activities are designed to assist in preparing your students on content that will be covered in the Ecosystem Explorers program at The Environmental Nature Center.

Program’s Key Vocabulary Terms *See appendix for vocabulary cards with definitions
- Survival/Survive
- Nature
- Habitat
- Wasting
- Reusable
- Recycling
- Landfill
- Litter
- Observe

Survival Station
NGSS Standards Covered K-LS1-1, LS1.C
Section’s Vocabulary Terms:
- Survival/Survive
- Nature
- Habitat

Suggested Classroom Activity:
- Objective: Introduce some of the natural resources living things need to survive.
- Materials: An animal prop and a prop/picture of food that specific animal likes to eat, flower (fake or real), water in a container, picture of the sun, and miscellaneous objects (cell phone, marker, cup, etc.).
- Procedure:
  - With your students, go through the vocabulary cards associated with this station. See appendix for flashcards.
  - If I say I want my flower to survive what do you think that means? Take guesses. Yes, to live. Survive is another way to say wanting to live. What do I absolutely need in order to live? Take guesses. Thumbs up for yes or thumbs up for down, do I need to eat food to survive? Thumbs up for yes or thumbs up for down, do I need to watch movies in order to survive? I couldn’t survive very long without food but I could live if I didn’t watch movies. Let’s talk about what animals need to survive.
  - Show animal toy.
  - What is this? Take guesses. Yes, it’s a (say specific animal of the prop you are using). What does (say specific animal) like to do? What does (say specific animal) like to eat? Where can we usually find this animal?
  - Place animal down
  - Show flower/plant.
  - What is this? Take guesses. Yes, it’s a plant. Where do you think we can find this type of plant? What do you think this plant likes? What do you think this plant doesn’t like? Thumbs up for yes or thumbs down for no, do you think plants eat the same food we do- like lasagna and grilled cheese sandwiches?
Place plant down.
Hold up the other miscellaneous prop items and have your students say out loud what they are, (be certain to have pictures or props of the sun, animal food for the animal being used for this station, and water in a container.

I am going to give you (depending on class size can do in pairs or groups) an item. If you think that the (say specific animal) needs your item to survive I want you to place it near (say the specific animal) if you think a plant needs your item to survive I want you to place it near the plant (point to area). If you think both the animal and plant need it to survive place it in between (point to area in between the plant and the animal prop). Or if none of them need it in order to live place it in here (point to an area away from the animal and plant). If possible, create squares with tape or place out sheets of paper to distinguish the different areas where your students will place the items.

Have students do the activity.

Good guesses on thinking about what the (say specific animal) and plant needs to survive. Our animal needs food to survive (pick up the food prop for the animal). Our animal needs water to survive (hold up water). Everyone say, food and water. These are 2 items that animals need to survive.

Just like animals, plants need water to survive (hold up water). All living things need water to survive.

The plant doesn’t eat food like we do but they get a lot of their energy from light (hold up light picture). Everyone say water and light. These are 2 items that plants need to survive.

Other items are needed to help animals and plants survive but we got to learn about a few of them today. On our field trip to the ENC we will review what we learned today about what living things need to survive.

Change the Environment to Fit Needs Station-Humans:
NGSS Standards Covered K.ESS2-2, ESS2. E, ESS3.C

Section’s Vocabulary Terms:
- Survival/Survive
- Nature
- Habitat

Suggested Classroom Activity:
- **Objective:** Introduce how humans can change nature.
- **Materials:** Handout and markers.
- **Procedure:**
  - With your students, go through the vocabulary cards associated with this station. See appendix for flashcards.
  - Pass out handouts to each of your students. See appendix for this handout.
  - Does everyone see the two pictures? Everyone point to the picture on the top. This picture is how this nature space first looked without any humans. Everyone point to the picture on the bottom, this is how this nature space looks after humans moved into the area. You will take a marker and circle the things that changed in the bottom picture. For example, the car. Is there a car in the top picture? No. So, I would circle the car because that is something that looks different than from the top picture.
  - Have students do activity.
  - Have a few students share what they noticed in the pictures of how humans changed the way nature.
  - **Good observations!** You gave me great examples of ways humans change nature, like creating buildings and roads. On our field trip to the ENC we will learn more about how humans change the nature.
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Change the Environment to Fit Needs Station-Animals:

NGSS Standards Covered K.ESS2-2, ESS2

Section’s Vocabulary Terms:
- Survival/Survive
- Nature
- Habitat
- Observe

Suggested Classroom Activity:
- **Objective:** Introduce how animals can change nature.
- **Materials:** Handout and markers
- **Procedure:**
  - With your students, go through the vocabulary cards associated with this station. See appendix for flashcards.
  - Pass out handouts to each of your students. See appendix for this handout.
  - *Does everyone see the two pictures? Everyone point to the picture on the top. This picture is how this nature space first looked without animals. Everyone point to the picture on the bottom, this is how the nature space looks after animals enter the area. You will take a marker and circle the things that changed in the bottom picture. For example, the bird’s nest. Is there a bird’s nest in the top picture? No. That nest came from an animal. So, I would circle the bird’s nest on the bottom picture because that is something that looks different from the top picture.*
  - Have students do activity.
  - Have a few students share what they noticed of how animals changed nature in the pictures.
  - *Good observations! You gave me great examples of ways animals change nature, like building nests and digging holes. On our field trip to the ENC we will learn more about how animals change nature.*

Humans Use Natural Resources Station:

NGSS Standards Covered K-ESS3-1, ESS3.A

Section’s Vocabulary Terms:
- Wasting

Suggested Classroom Activity:
- **Objective:** Introduce the concept that humans use resources from nature and the importance of not wasting these resources.
- **Materials:** A banana and the banana shipping route visual (see appendix).
- **Procedure:**
  - With your students, go through the vocabulary cards associated with this station. See appendix for flashcards.
  - *Take a look around the classroom. Do you think anything came from nature? Would anyone like to share what they think comes from nature that is found in our classroom? Take suggestions. Those are good ideas. How about the food you will eat for lunch? Is any of that from nature? Take responses.*
  - Take out a banana. *This is a part of my lunch today. Thumbs up for yes or thumbs down for now, did this banana come from nature? Wait for responses. How do banana’s grow? Take guesses. Yes, on trees.*
  - *Everyone say, thank you nature!*  
  - *Where do you think this banana grew? In my back yard? Somewhere in California? Take guesses.*
  - *This banana actually came from a whole different country! It came from Ecuador. This banana traveled on boats, planes, and trucks about 4,000 miles just so I can eat it! (Show banana shipping route visual)*
  - *Sometimes what happens is someone will buy a banana and take one bite and throw it away! This fruit came from nature where it took the tree a lot of energy and water to make, it traveled from far away, and it then it got wasted.*
  - *Humans use things from nature which is okay but we should learn not to waste. Everyone say, no wasting.*
  - *On our field trip to the ENC we learn about other items humans use that are from nature.*
Make a Difference Station:
NGSS Standards Covered K-ESS3-3; ESS3.C, EST1.B
Section’s Vocabulary Terms:
- Reusable
- Recycling
- Landfill
- Litter

Suggested Classroom Activity:
- **Objective:**
- **Materials:** Trash from classroom, gloves (optional), picture of a landfill, a reusable water bottle
- **Procedure:**
  - With your students, go through the vocabulary cards associated with this station. See appendix for flashcards
  - Grab your trash can from the classroom (use dish gloves or garden gloves if needed).
  - If your trash is in a clear bag you can pull out the bag, or dump trash into a clear bin where all the students can see, or walk around and have the students look into the trash can so they can see the trash.
  - *Where do you think this trash goes after it leaves our classroom?* Take guesses.
  - *Our trash will end up in the landfill* (show “landfill” vocabulary card).
  - *A landfill is a place outside where our trash is buried. Our trash is taking up space somewhere where a coyote could live with her babies or where plants could grow. Instead, trash ends up in that space. This trash will sit in the landfill for hundreds of years as it slowly breaks down into smaller pieces.*
  - *What can we do to help make less trash?* Take guesses. Good ideas!
  - *We should try our best to make less trash! We can use things that can be used over and over again instead of just being used once and being thrown away into the trash. Everyone say reusable. Show a reusable water bottle. Instead of making a lot of trash by using plastic water bottles I use this bottle over and over again. I’m making less trash by using this reusable item.*
  - At our field trip to the ENC we will learn more ways help nature.

Enjoy Nature Station:
Section’s Vocabulary Terms:
- Observe

Suggested Activity:
- **Objective:** Give examples of how your students can notice nature that surrounds them every day.
- **Materials:** A sky with clouds or leaves
- **Procedure:**
  - *Nature is all around us, we just need to take time and enjoy it. We are going to go outside and notice something in nature that floats above us. Does anyone have a guess what we will be looking at?* Take guesses. Yes, clouds!
  - Lead students outside, depending on your location you may want the students to bring a jacket or take something for them to lay on while they are laying on the ground.
  - *Everyone point to your eyes and say “observe”. Observe is another way to say look. We are going to have quiet time and observe the clouds. You might observe the color and/or the shape of the clouds. Maybe the shape will remind you of something like an animal or a toy. We will share what we observe after we have our quiet time observing nature.*
  - Have the students look for a couple of minutes.
  - *Afterward have the students sit in a circle and share 1 thing they observed.*
  - Another option is to do the same activity but instead of clouds use leaves that have fallen on the ground. Remember to have the students return the leaves back to nature as everything in nature belongs in nature.
  - *We will take time and learn more about ways to notice how great nature is when we visit the ENC.*