

# First Grade

## Pre and Post Field Trip Teacher Resources

### TEKS Objectives:

- 1.2.A - Ask questions about organisms, objects and events
- 1.2.B - Plan and conduct simple descriptive investigations.
- 1.2.C - Gather information using simple equipment and tools to extend the senses.
- 1.2.D - Construct reasonable explanations and draw conclusions
- 1.2.E - Communicate findings about simple investigations
- 1.4.A - Collect information using tools including hand lenses, clocks, computers, thermometers, and balances.
- 1.4.B - Record and compare collected information
- 1.5.A - Sort objects and events based on properties and patterns
- 1.6.A - Sort organisms and objects according to their parts and characteristics
- 1.6.B - Observe and describe the parts of plants and animals
- 1.6.C - Manipulate objects such as toys, vehicles or construction sets so that the parts are separated from the whole which may result in the part or the whole not working.
- 1.8.B - Compare living organisms and nonliving objects.
- 1.9B - Compare and give examples of the ways living organisms depend on each other for their basic needs.

### HISD Objectives:

- SCI.1.5A - Sort and classify objects and events based on their properties and patterns such as rocks by color and weather changes by season.
- SCI.1.4B - Record and compare collected information
- SCI 1.2A - Ask questions about organisms, objects, and events.
- SCI 1.2B - Plan and conduct simple descriptive investigations.
- SCI 1.2C - Gather information using simple equipment and tools to extend the senses.
- SCI 1.2D - Construct reasonable explanations and draw conclusions.
- SCI 1.2E - Communicate explanations about investigations.
- SCI 1.8A - Group and record observations of living organisms and non-living objects.
- SCI 1.8B - Compare, contrast, and record observations of living organisms and non-living objects.
- SCI 1.9B - Compare and give examples of the ways living organisms depend on each other for their basic needs such as in a food chain including corn, mice, and owls.
- SCI 1.6B - Observe and describe the parts of plants and animals according to their characteristics

**Program Overview:** All living things have important roles/jobs in an ecosystem.



**Key Vocabulary Terms:** organism, producer, consumer, decomposer, decay, photosynthesis, food chain

**Objectives:** Students will learn that organisms are organized by their job in an ecosystem. Students will differentiate organisms as producer, consumer, or decomposer.

**Time Allocation:** 45 minutes for each activity.

### Background Information:

An ecosystem is the system of links between living and non-living things in an environment. Each of the organisms in the ecosystem has a niche or job to do. Producers are the organisms that can convert the energy of the sun into food energy by photosynthesis. Consumers are organisms that get their energy by consuming or eating other living things. When plants and animals die, decomposers begin their work. Organisms such as bacteria and fungi dissolve dead plants and animals and return nutrients to the air and soil to be used again by plants and animals. Decomposers don't eat dead plants or animals to get energy they absorb them. Your students might define those jobs as the Food Makers (Producers), Food Eaters (Consumers), and Soil Makers or Recyclers (Decomposers).

# Pre-Field Trip Activities:

## Activity One (Flip Book)

1. Begin a discussion of the jobs that the students' parents have. Create a word wall of the various jobs such as fireman, doctor, waiter, teacher, etc.
2. Hold up a plant and ask the students if they think the plant has a job.
3. Hold up the classroom pet (if available) or a stuffed animal and ask if they think this animal has a job to do.
4. Hold up a mushroom and ask if they think the mushroom has a job to do.
5. Explain to the students that all organisms (living things) have jobs to do. Write down three headings on the chalkboard. Producer, Consumer and Decomposer and place pictures of a plant, classroom pet or other animal and mushroom under the 3 headings.
6. Ask the question, "What are the jobs that plants and animals have"? Are they like the jobs that our parents have? (NO). In nature or in natural habitats, plants and animals have very important jobs called producers and consumers.
7. Give a saltine cracker to each child and have them eat it. Explain that another word for eating is "consume". Tell the children that they are all consumers. They consume food. Have a discussion of the various foods animals consume. (Squirrels eat nuts, caterpillars eat plant leaves, snakes eat mice, etc.)
8. Have the children create a flip book entitled "Crackers for Consumers" The first page should be a self-portrait of the student eating a cracker. The subsequent pages are various animals and the foods they eat. Have the student write a sentence at the bottom of each page describing what it is consuming. The \_\_\_\_\_ is consuming a \_\_\_\_\_. For example: The bird is consuming a worm.

## Activity Two (Photosynthesis Experiment)

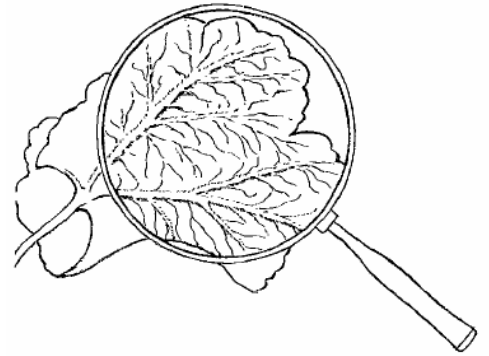
1. To help students understand why plants are called producers, it is important for them to understand that plants can make their own food in the green parts of leaves using sunlight, water and air. Plants make or "produce" their food instead of "consuming" their food.
2. Hold up the green plant in front of the children. Ask, "How does a plant get its food if it doesn't have a mouth?" Most students will answer through their roots. Students typically understand that plants get water through their roots. Explain that plants use sunlight AND water AND air to make (produce) its food. It transforms these three things into sugar for the plant to use for energy.

3. Write the word photosynthesis on the board. Explain to the students that when a plant changes sunlight into its energy (food) this is called photosynthesis. This is why plants are called producers. They can produce their own food. They don't eat it.
4. Since we can not see photosynthesis, this will not be a concrete concept for children to grasp. Explain that we can do an experiment to show its happening inside the green leaves of the plant.



5. Get a clear plastic bag and put it over the plant. Tie the bag around the stem at the bottom of the plant. Water the plant and put it in the sun. Wait one hour.
6. Students will see that water has collected inside the bag. When the plant makes its food it gives off water through tiny holes in its leaves. This water collects inside the bag that you can see.

7. Using a magnifying glass, look at the many small holes on the underside of the leaf. This is where the plant takes in air and puts out water and oxygen. Illustrate this in their science journal and describe what has happened in the experiment.



8. Ask the questions, "What would happen if you covered up these holes with Vaseline? What would happen after one week? What would happen after two weeks? (The plant could die because it would interfere with the process of photosynthesis by limiting the carbon dioxide the plant could take in) Is there anything outside that can cover the leaves of a plant and make them die? (yes, pollution, smoke, smog,)"

### Activity Three (Decomposer Demonstration)

1. Using blocks have the students work in pairs to build a tower.
2. Tell the students to "break down" the tower.
3. Now have students build the tower again, but use the word "compose". Compose a tower using the blocks.
4. Again, tell the students to break it down, but use the words "decompose" "Decompose the tower or break down the tower".

5. Explain that decompose is a word that means to break down. In nature it means to decay or to rot.
6. Ask, who are the decomposers in nature? (Fungi, mushrooms, bacteria) What do they break down? (dead plants and animals)
7. Show the students pictures of mushrooms growing **on the side of a log**. Explain that they have an extremely important job because decomposers recycle the nutrients back into the earth. Decomposers break down dead leaves, plants, and animals and turn it into rich soil for our plants (producers).
8. Ask the students to write and illustrate the terms producer, consumer and decomposer in their science journals.

## Post Field Trip Activities

### Activity One (Producer and Consumer Review)

1. Review with the students all the plants and animals that they saw at the Arboretum.
2. Make a T chart on the board and label one side Producer and the other side Consumer.
3. List the names of plants and animals that were seen. Some producers that may have been seen are pine trees, lily pads, poison ivy, etc. Some consumers that may have been seen are squirrels, blue jays, butterflies, etc.
4. Further classify the consumers into groups such as:
  - insects, reptiles and amphibians,
  - forest and pond animals
  - plant and meat eaters.
  - day and night animals

### Activity Two ("Go Pick" Game)

1. Print out the **"Go Pick"** cards onto cardstock and cut out the cards.
2. Play Game "Go Pick". The rules of this game are exactly like the card game, "Go Fish" except the cards are pictures of producers, consumers and decomposers instead. Students play in groups of 3 or 4. Each student is dealt 7 cards and the remainder of the deck lays face down in the middle. Each student takes turns asking the person to their right if they have any producers, consumers or decomposers. If the student does he or she gives student number 1 the card. If the other student does not have the card he or she says "go pick" and the first student draws one card from the center pile. When a student gets 4 of a kind, then he has that hand. The winner is the one with the most hands.

## **Cross-Curricular Activities**

### **Math:**

Take the children on a walk on the school grounds or a neighborhood park. Ask the children to collect 10 leaves from different types of producers. When you return to the classroom classify the leaves according to patterns, textures, size, etc. Create a collage with the leaves in each grouping.

### **Language Arts:**

Go on an "ABC" scavenger hunt. Search for things on a walk that begin with each letter of the alphabet. For example, A is for ant. B is for Beetle. C is for Cactus and so on.

Create a class chart of all the animals that were seen at the Arboretum. Pick one animal from the list to do further research to create a class book. Assign each student to research one fact about the animal. Collect facts to create a class book.

Write a thank you letter to the naturalist or docent who led your walk during your field trip. Ask students to describe a favorite plant or animal and its habitat. Did it live in the forest or at the pond? The address for the Houston Arboretum is 4501 Woodway Drive, Houston, TX 77024

### **Social Studies:**

Compare various plants from around the world. Have the class research plants that live in a desert, a rainforest, or a wetland. Compare the plants and how they are different to each region.

## **List of Suggested Readings**

Dr. Seuss . 1971. "The Lorax". Random House.

Lauber, Patricia. 1995. Who Eats What? "Food Chains and Food Webs." Harper Collins.

Mazer, Anne. 1994. "The Salamander Room" Dragonfly Books.

Page, Robin. 1995. "I See a Kookaburra! Discovering Animal Habitats Around the World"  
Houghton Mifflin

Peet, Bill. 1970. "The Wump World." Houghton Mifflin.

Press, Judy. 2005. "Animal Habitats! Learning about North American Animals and Plants through Art, Science and Creative Play". Williamson Books

Relf, Pat. 1995. "Magic School Bus Hops Home: A Book About Animal Habitats" Scholastic Paperbacks.

# List of Suggested Websites

National Wildlife Federation -

<http://www.nwf.org>

The Children & Nature Network -

<http://www.cnaturenet.org/>

Acorn Naturalists-

<http://www.acornnaturalists.com/>

Specializes in nature-related educational materials for kids.

Texas Park and Wildlife-

<http://www.tpwd.state.tx.us/learning>

Hooker Oak Elementary School-

<http://www.csuchico.edu/%7Epmaslin/nature/honature.html>

Here is a wonderful example of what one group of parents and teachers did at their school! It's truly turned into a community project. The page has links at the bottom to some other very useful information and teaching materials, all hosted by California State University at Chico.

