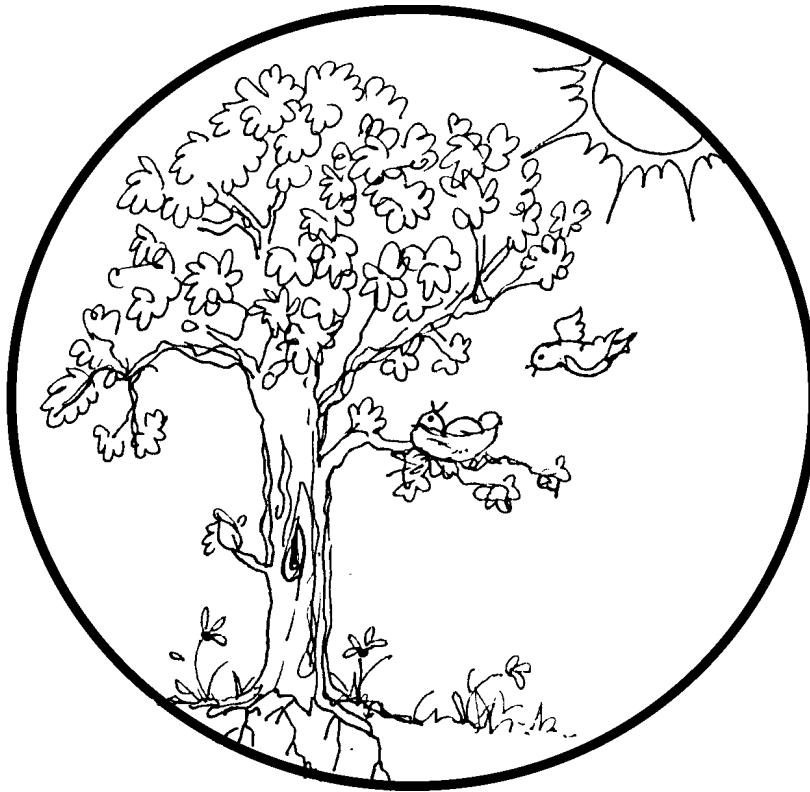




Life Cycle
Diversity in a Balance



KINDERGARTEN NATURAL ENVIRONMENT



2 WEEKS
LESSON PLANS AND
ACTIVITIES

LIFE CYCLE OVERVIEW OF KINDERGARTEN

ORGANISMS

WEEK 1.

PRE: *Comparing large and small organisms.*

LAB: *Classifying and investigating large organisms.*

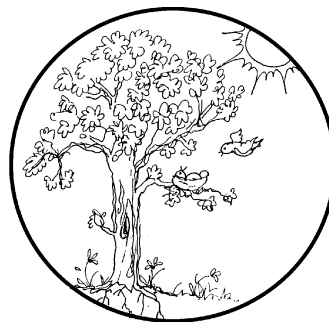
POST: *Comparing where large animals live.*

WEEK 2.

PRE: *Observing how and where organisms live.*

LAB: *Comparing shells.*

POST: *Comparing plants and animals.*



HUMAN BIOLOGY

WEEK 3.

PRE: *Discovering the different parts of the body.*

LAB: *Discovering and locating parts of the body.*

POST: *Distinguishing the function of external body parts.*

WEEK 4.

PRE: *Discovering why bones are important.*

LAB: *Comparing different models of skeletons.*

POST: *Exploring how teeth grow.*

PLANT LIFE

WEEK 5.

PRE: *Exploring how seeds grow.*

LAB: *Planting seeds.*

POST: *Exploring the uses of plants.*

WEEK 6.

PRE: *Defining the parts of a tree and flower.*

LAB: *Comparing seeds and the plants they produce.*

POST: *Comparing flowers, stems, and leaves.*

NATURAL ENVIRONMENT

WEEK 7.

PRE: *Exploring land and marine environments.*

LAB: *Comparing and contrasting environments.*

POST: *Describing a favorite environment.*

WEEK 8:

PRE: *Exploring the order of a natural community.*

LAB: *Dramatizing who eats whom.*

POST: *Characterizing producers and consumers.*

LIFE CYCLE - NATURAL ENVIRONMENT (KA)

PRE LAB

Students use a worksheet to determine land and marine organisms.

OBJECTIVES:

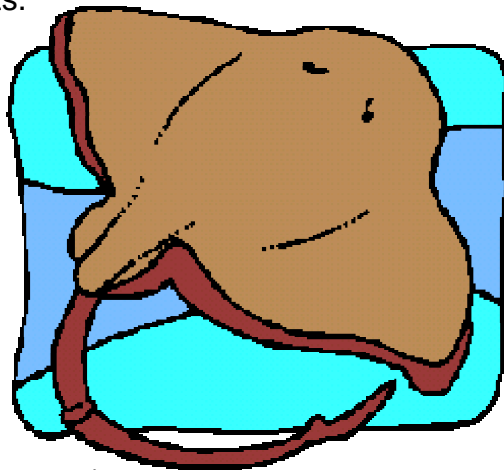
1. Investigating different environments.
2. Exploring land and marine environments.

VOCABULARY:

environment
land
marine
natural

MATERIALS:

worksheet
scissors
books on different animal environments (optional)



BACKGROUND:

Children can recognize that certain organisms live in certain communities. However many of them are a little confused at what is the real natural environment for many of these organisms. For instance if you ask students where can they find elephants or lions, most will say the zoo! Someone needs to explain that this is just not where you would find these organisms in nature.

In this introductory lesson on our natural environment, we suggest that you discuss with students environments where different organisms live. The best way to accomplish this is through several short books that discuss different environments and organisms. The major concept to emphasize is that certain organisms live with other organisms in a specific environment, naturally. The zoo is not natural, and only reflects humans' ability to "trap and show." However, on a positive note, zoos do help to preserve those species of animals that are endangered of becoming extinct.

The two major environments to illustrate to your students are those organisms that live on land and those that live in the marine environment. The marine environment can be divided into the shallow and deep salt water. The types of organisms that live here include small invertebrates like crabs, sea stars, and many other common seashore organisms. The land environment includes the forest, meadow, and fresh water. The forest is a lush community of plants. Fresh water on land includes small organisms that cannot tolerate salt. You may also want to point out that many animals that children see are "domesticated" which means that the animals are bred for use by humans.

PROCEDURE:

1. Discuss with students the difference between land and marine organisms. Ask them how the organisms are different. For instance land organisms have feet and marine have fins. On the land you see very large trees, but in the oceans you only see seaweed and microscopic plants. The land is dry with extreme temperatures from below freezing to very high. The oceans do not have these extremes of temperatures. So organisms in the marine environment tend to swim large distances, where land organisms, other than birds tend to stay in a restricted geographic area.

2. Give the students the pictures of the different organisms and have them discuss whether they think they live on land or in the marine environment. Instruct them to write the word marine or land in the appropriate space.

3. Have them save these animal cards for the Lab portion of this lesson.

4. Giraffes live on land and are found only in the grasslands of Africa.

Blue whales are found in the marine environment and are considered the largest animal. Note to students that the whale is a mammal, and if it lived on land its feet probably could not support it!

Sand dollars live in shallow marine environments. They have a 5 part symmetry and is related to the sea star.

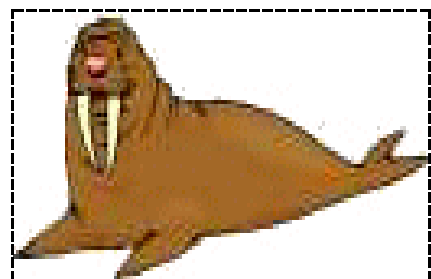
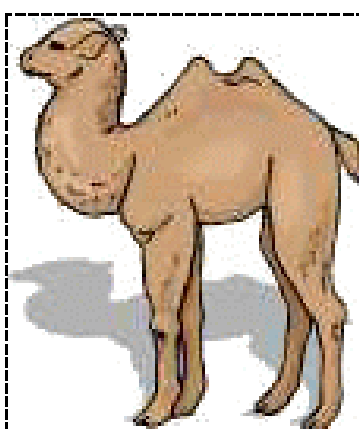
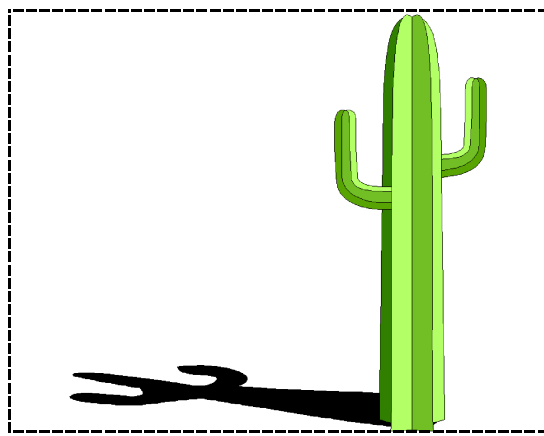
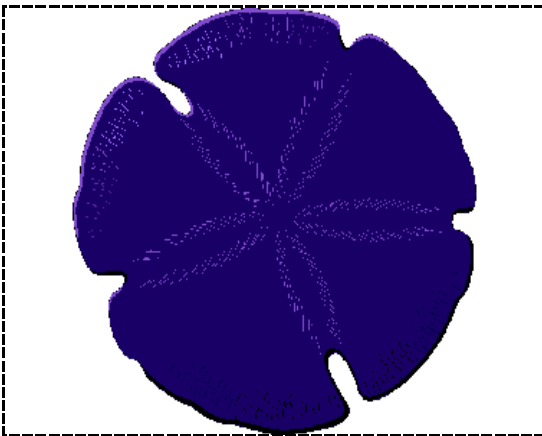
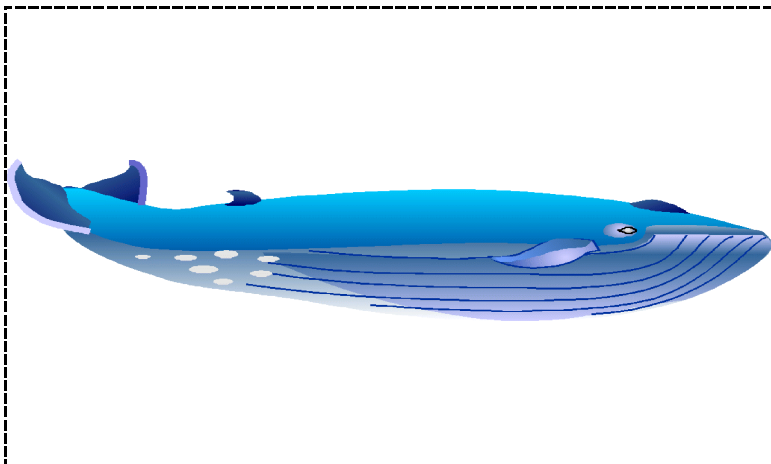
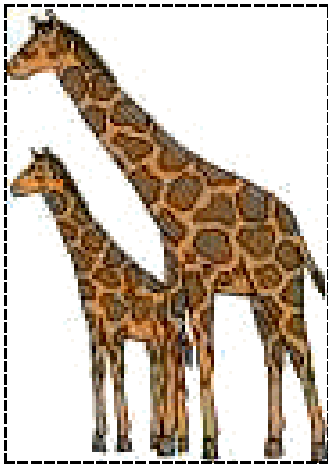
The cactus live on land and unlike most plants don't have leaves. In the hot temperature which it is accustomed to, leaves would evaporate too much water.

Fungi are on land, with only a few species living in the marine environment. They live fresh water and dark conditions.

A camel lives on land and is also adapted to living in extreme heat.

Walruses live in cooler waters in the marine environment.

LIFE CYCLE - NATURAL ENVIRONMENT (KA) PRE



GIRAFFE	
BLUE WHALE	
SAND DOLLAR	
WALRUS	
CACTUS	
MUSHROOM	
CAMEL	

WRITE LAND OR MARINE

LIFE CYCLE - NATURAL ENVIRONMENT (KA)

LAB

Students determine organisms' natural habitat.

OBJECTIVES:

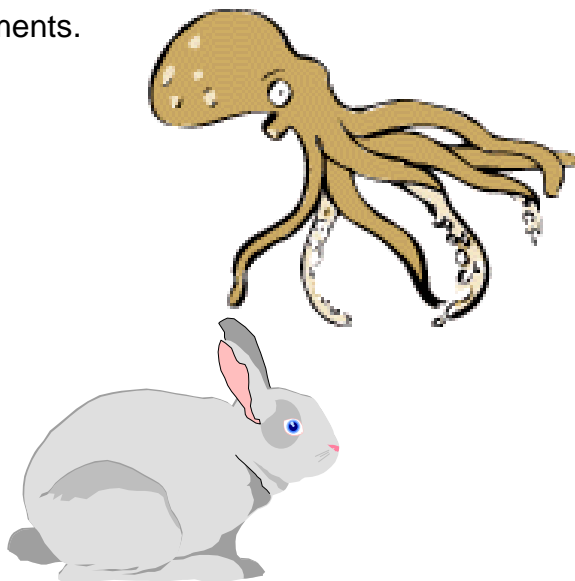
1. Exploring where organisms live.
2. Comparing and contrasting environments.

VOCABULARY:

environment
habitat
organism

MATERIALS:

Inflatable Animal Globes
Pictures from Pre Lab
Pictures of Organisms (optional)
Plastic Toy Animals (optional)
Animal Puppets (Optional)



BACKGROUND:

Students have learned that there are different types of environments, but mainly under two big divisions land and water. An environment in which an organism lives can be described by temperature, wind, and other physical components as well as the biological components. The term environment refers to all the external factors affecting the life of an individual organism or a population of organisms. All living (plants and animals) and non-living (air, water and land) things are part of the environment.

Studying the whole environment at once is an immense task, so the environment is broken into sections we call ecosystems. An ecosystem is a group or community of living things interacting with one another and with their non-living surroundings. However, to understand an ecosystem, students must learn about the different organisms and in what kind of habitat they live in. A habitat refers to the place where an organisms live. Young children need to learn how to describe the different habits.

PROCEDURE:

1. Students have learned about different animals, in this lab students will try to discover these animals' natural habitat. A habitat is where an animal lives with his friends and enemies. The habitat can be on flat lands, mountains, ponds, meadows, or oceans. The focus of this lab is for students to see different habitats and to determine where some

animals live.

2. Go over the organisms on the different cards the students made during the Pre Lab. It is important to discuss where they live.

3. Give groups of students an Inflatable Animal Globe and call out where the different animals live. Bear in mind each group will have to be shown on the globe where the different continents are. For kindergarten students we would use just the continent and ocean names.

4. If you have puppets or plastic animals, you can add or replace some of the animals. If your class is competitive, you can see who finds the area first (after a trial run, of course!)

LIFE CYCLE - NATURAL ENVIRONMENT (KA)

POST LAB

Students use a worksheet to describe their favorite environment.

OBJECTIVES:

1. Describing a favorite environment.
2. Comparing environments.

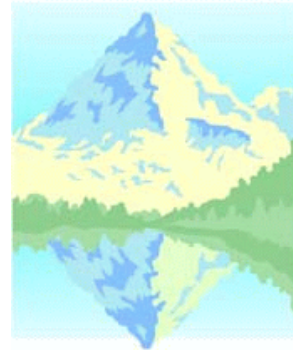
VOCABULARY:

environment

MATERIALS:

worksheet

Curious Creatures in Peculiar Places by A. Koss (optional)



BACKGROUND:

There are many different places on Earth where organisms can live. These areas can be called an organism's environment. Students may not be aware that humans and wildlife share environments. Many times humans intrude into the range of many wildlife, causing some of the wildlife to go extinct. Wildlife is present in or on nearly all areas of the Earth's surface. There are some areas like tropical rainforests that have more wildlife than other areas of the world.

Humans and wildlife all depend on the Earth for their living conditions. Humans and wildlife have habitats that include components like food, water, shelter or cover, space, and the arrangement of these in relation to each other. Any environmental changes in any of the habitats can affect the life of an organism.

PROCEDURE:

1. *Curious Creatures in Peculiar Places* by A. Koss is an excellent poetry book that introduces different animals from exotic lands around the world. "Toads with fire-engine red tummies, goggle-eyed tarsiers with sticky fingers and sloths who hang upside down from their toes are among the many creatures you'll find in this look at some of the nature's most bizarre animals and where they live. Lively rhymes provide oodles of facts to fascinate all readers (from the book)." Read some of the poems to the students and have the students locate the place where the animals are from. Note that in front of the book there is a map locating the different animals.

2. On the worksheet children need to describe their favorite environment. Instruct the students to circle the word that they feel best describes their favorite environment. For instance, the first environment can be green, brown, or blue. A student likes a blue environment (representing water), so he or she would use a blue crayon and circle the word. Green is for forest and brown is for the desert or dry mountains.

3. At the end of the activity, have students draw their favorite environment and see if it matches their descriptions. For instance, if a child draws the forest and traces brown, they might have a little explaining to do.

My Favorite Environment

circle the words that make your environment nice

1. green, brown, blue, yellow
2. Wet, dry, damp
3. Quiet, noisy, music
4. Hot, cold, warm, cool

Draw your favorite environment.



LIFE CYCLE - NATURAL ENVIRONMENT (KB)

PRE LAB

Students learn "who eats whom," by completing a coloring exercise.

OBJECTIVES:

1. Comparing who eats whom
2. Exploring the order of a natural community.

VOCABULARY:

community
consumer
food chain
nutrient
producer



MATERIALS:

worksheet
crayons

BACKGROUND:

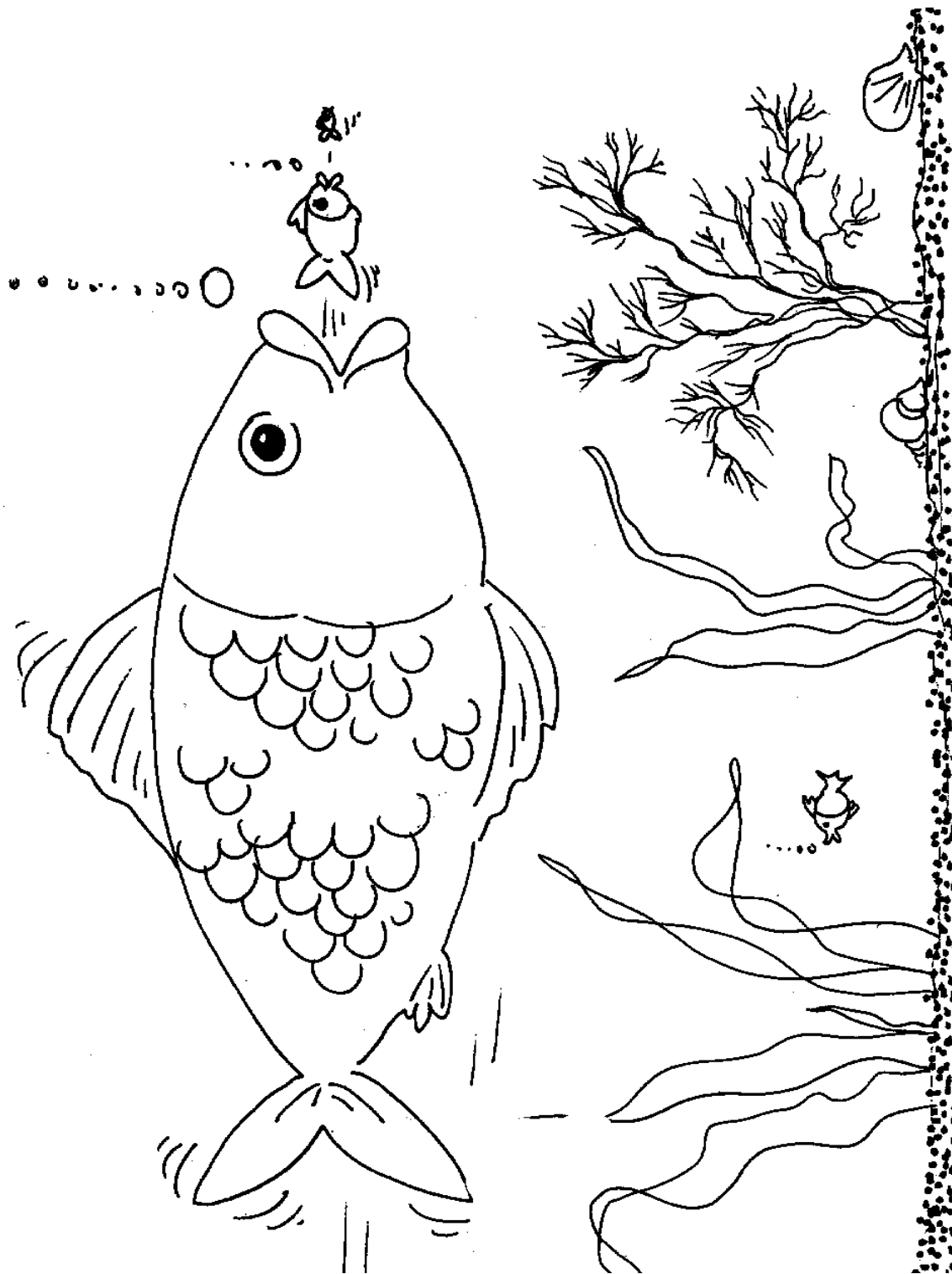
There is some type of order to any living community. Life is dependent on many interrelated factors in order for organisms to survive. This coloring exercise focuses on the food chain. Large organisms eat smaller organisms to obtain their nutrients. There must be more of the smaller organisms in order to sustain the larger ones. Here the larger fish (a consumer) is eating a smaller fish (another consumer) who in turn is eating the smallest fish (another consumer). Emphasize with your students that if the smallest fish die out, there will be no more food for all the smaller fish to eat. If all the smaller fish die, then all the big fish will have nothing to eat and will also die. This would cause a "chain reaction" of disastrous results.

PROCEDURE:

1. Ask students what the smallest fish is eating. The smallest fish eats little marine plants which make their own food using sunlight through a process called photosynthesis. Organisms that make their own food are called producers. All links in the food chain are important when it comes to keeping all the organisms alive.

2. All organisms have their own specific food chain, or who eats whom. You may want to go over some food chains that students may be familiar with. A human food chain may be: human: cow: grass. A cat's food chain may be: cat: bird: worm: microbes.

LIFE CYCLE - NATURAL ENVIRONMENT (KB) PRE



LIFE CYCLE - NATURAL ENVIRONMENT (KB)

LAB

Students dramatize a food chain with puppets.

OBJECTIVES:

1. Dramatizing who eats whom.
2. Exploring the food chain.

VOCABULARY:

consumer
food chain
producer

MATERIALS:

Dinnertime by Jan Pienkowski
Animal Puppets



BACKGROUND:

There are many different food chains in a given area. If an organism relies solely on one organism for food, the first organism will be in trouble if the second dies out. The food chain refers to "Who eats whom" relationship. For instance, humans eat hamburger which comes from the meat of a cow, which eats only grass (herbivore). But humans don't only eat meat, they eat many other items that come from both animals and plants (omnivore). A lion may eat an antelope, which in turn eats grass. But a lion also eats many other smaller mammals, fish, and birds, so the food chain gets complicated.

If you plotted the entire food habits of an organism this would be called a food web.

PROCEDURE:

1. Read *Dinnertime* by Pienkowski to students. It is a short (and slightly inaccurate) story about who eats whom. Students like this book to be read over and over again, mainly because of the wonderful pop-up pictures. This book is not only a good introduction to the lab, but can be used as a conclusion.

Dinnertime represents a hypothetical food chain of different degrees of consumers. A consumer is an animal that eats its prey; a producer makes its own food. In *Dinnertime* there are no producers.

2. In this exercise, introduce students to different types of animals by using puppets. We recommend Folkmanis puppets because they are realistic. Discuss each of

the puppets that you will be using, showing the students how to work the puppet. Tell a small story about where the animal lives (you may want to have maps, to show students where they live). You can have the students in groups look and play with the puppets, telling them that they are going to have to develop a story about the puppets and if they would be eaten in the real world.

3. Get the students in a group and have certain students become the "animal" by portraying the animal using the appropriate puppet. For instance, if you have a ladybug puppet, have a student play the ladybug. That student will dramatize how the ladybug lives, then from the other puppets the class finds the animal next on the food chain. The frog can eat a ladybug, so you have the student who is the frog come up to the front of the class and "eat" the ladybug. Then continue the story. You will find that not all of the puppets fit in a food chain. For instance, if you have a Koala Bear, they don't eat other mammals, they just eat leaves, so it has a different food chain.

4. Have students use their imaginations. You may have to control the "eating" sessions, young children can be very dramatic.

LIFE CYCLE - NATURAL ENVIRONMENT (KB)

POST LAB

Students determine if organisms are producers or consumers.

OBJECTIVES:

1. Characterizing producers and consumers.
2. Defining a simple food chain.

VOCABULARY:

food chain
producer
consumer



MATERIALS:

different pictures of producers and consumers in the classroom
consumer/producer cards

BACKGROUND:

In order for people to live in harmony with nature, we must understand the delicate and complex biological, physical, and chemical systems that exist in the world we share with all living and non-living things. The goal of this unit is to make children aware of the intricate balance that exists between all levels of life and more importantly, how any break or change of a "link" will affect the "chain" as a whole, including the human species.

Consumers eat producers, but how can you distinguish the differences between them. Producers tend to be green because they produce their own food. They are usually green because they have chlorophyll-A which is used by plants to produce food through photosynthesis. Consumers are everything else.

PROCEDURE:

1. Put pictures around the room and have students label them as producers or consumers. Give each child a few of the consumer/producer cards. Have the students compare the inside of the classroom with outside. They will notice that there are more producers outside. Why is this? Because the outdoors has natural sunlight that allows producers to produce. You won't find vegetables growing in a cellar, because there is no sunlight.

2. After the students have identified different producers and consumers talk about each of the pictures that you may have out and if they are consumers discuss what that animal would eat.

LIFE CYCLE - NATURAL ENVIRONMENT (KB) POST

PRODUCER	CONSUMER
PRODUCER	CONSUMER
PRODUCER	CONSUMER
PRODUCER	CONSUMER
PRODUCER	CONSUMER
PRODUCER	CONSUMER
PRODUCER	CONSUMER