



**FIELD EDGE**

<b>MATERIALS INVENTORY</b>	
<ul style="list-style-type: none"> <li>• Box of two nests</li> <li>• Tennis ball</li> <li>• Yarn</li> <li>• Box plastic fruit</li> <li>• Hula hoops</li> <li>• Cones</li> <li>• Camouflage game</li> </ul>	Laminated pictures depicting: <ul style="list-style-type: none"> <li>• Prey</li> <li>• Predators</li> <li>• Camouflage</li> <li>• Mimicry</li> </ul>
<b>ADVANCE PREPARATION</b>	
<ul style="list-style-type: none"> <li>• Verify all materials are in your kit</li> </ul>	
<b>MORNING SETUP</b>	
Set up Prey-Predator Game <ul style="list-style-type: none"> <li>• Put cones around perimeter of small area on soccer field</li> <li>• Distribute the 6 hula hoops within the area</li> </ul> Set up Camouflage Game <ul style="list-style-type: none"> <li>• Hide objects in woods along edge of road</li> <li>• Layout orange tape barrier</li> </ul>	

Objective:

- To discuss interrelatedness of species in an ecosystem.
- To highlight adaptations of predator and prey

**INSTRUCTION:**

Gather students at the edge of field. Welcome the students and chaperones to the station and introduce the adult leader and high school volunteers.

**Why do you think this habitat is called a “Field Edge”?**

Place where two different habitats merge – in this case forest meeting field.

**Our field is a little different than a field that occurs naturally. What is similar/different?**

Soccer field and natural field are open, sunlit areas; natural field would be filled with tall grasses and other plants. Succession occurs in meadow.

**Why would animals need a field habitat?**



Food – grasses and other food sources in abundance  
Called a “cafeteria” because many animals eat here or are eaten  
Nests – gather material to make their nests  
Water – rainwater and dew collects on leaves  
Sun

## **SHOW BIRD NESTS**

**We talked about why animals might come to the field. Why might animals need the forest?**

Cover – protection  
Places to build nest, burrow

**What kind of animals do you think live in Bird Park?**

Fungi and bacteria	Earthworms
Termites	Salamanders
Mice and shrews	Raccoons
Eastern cottontail rabbit	Gray and red squirrels
Bats	Woodchuck
Turtle	Deer
Snakes	
Chipmunks	
Birds: hawks, owls, wild turkeys, song birds, crows, pheasants	
Insects (many different kinds, carpenter ants)	

**Animals depend on plants and other animals in their habitat to survive. What is a food chain?** Transfer of food energy in sequence from the sun to plants to animals that eat plants to animals that eat animals.

Plants – converts sunlight to food through photosynthesis

Herbivores – eats plants (mice, birds, deer, rabbits, insects)

Carnivores– eats animals (Hawks, owls, snakes, birds, insects, cats)

Omnivores– eats both (moles, raccoons, squirrels, insects, people)

Scavengers – feed on dead bodies (crows, insects, opossums)

**What would happen if the food chain is broken?**



**FOOD CHAIN DEMONSTRATION:** Ask for four volunteers for various roles in the food chain. You will need one tennis ball to represent sun light and yarn to



represent food energy and three volunteers for to represent plants, herbivores, and carnivores as follows:

- Sun (Instructor or high school student)
- Student to represent plants –
- Student to represent herbivores – grasshopper
- Student to represent carnivores – spider, bird

Instructor has students stand in a circle. Instructor gives sun energy (tennis ball) to plants, plants convert sun energy to food energy (exchange tennis ball for yarn). Plant holds end of yarn and passes rest to herbivore (grasshopper). Herbivore (grasshopper) and passes to carnivores (spider) while plant and grasshopper also keep holding. Carnivore (spider) holds string and passes to carnivore (bird). With all volunteers holding string taunt point out that all creatures are connected. Ask what would happen if connection broken. For example, too little rain fall causes some plants to die. With less plant resources, fewer herbivores and carnivores can live in that location and must find new habitats.

(This activity is adapted from  
<https://www.epa.gov/sites/production/files/documents/weboflifeactivity.pdf>.)

**We have talked about how animals and plants depend on each other in an ecosystem and how the food chain can be disrupted. Changes in the environment can affect the number of number of animals that can live in an area.**



### **ECOSYSTEM BALANCE**

Ask for 8 volunteers. Divide children into two groups. One group will be plants, the other herbivores. Line two groups of children up across from each other. Give each plant one fruit, have herbivores slowly walk to plant and take fruit. This ecosystem has enough plants to support four herbivores.

Have plants and herbivores line up again, collect fruit. When herbivores are told to collect fruit on second round have instructor or high school students “steal” fruit from three of the plants while saying they are a new invasive species. This environment can now only support one herbivore.

Ask students about the impact of the invasive species (competed with native species). An example that can be used in this game is our native gray squirrel which is an invasive species in England where it outcompetes the native red squirrel.

**Animals spend much of their waking hours trying to get enough food to stay alive** – a task considerably more difficult when your food can run away or fight back, or there is a chance you might be eaten. Let’s talk a little more specifically about **predators** (animals that capture other animals for food) and **prey** (animals that are caught for food).

### **How can you tell a predator from a prey animal just by looking at its face?**

Predators have eyes on the front of their head enabling them to focus straight ahead to look for food, while prey have eyes on the side of their heads enabling them to see as much of their surroundings as possible.

### **SHOW PICTURE EXAMPLES PREY AND PREDATOR**

*Sort the pictures to show **prey animals first** – rabbit, deer, moth...*

*Show pictures of predators. – spider, bobcat, owl...*

### **How might prey animals protect themselves in an open field?**

Freezing

Hiding

Mimicry

Darting about (predators have trouble following)

Camouflage



### **PREDATOR AND PREY GAME**

The object is for the prey to cross the field without being eaten.

- Two lines are set up in the field with hula hoops as burrows in between.

Ask for 8 volunteers. Divide children into two groups – 4 predator and 4 prey. Have more prey than predators to illustrate situation in the wild. Prey can hold a red ribbon.

Line prey up behind line and predators about 6-8 feet behind prey.

Send herbivores into field to “eat”. Assign the prey to pick up 3 leaves or small twigs.

Prey can protect themselves from predators by freezing, moving about in zig zag pattern (Predators have trouble following), or jumping into burrow (freeze or



stay in the burrow no more than 3 seconds). ASK PREY/PREDATOR TO WALK.

Prey leave field if they when touched **gently** by predator.

Discuss how hard to search for food or keep from being eaten. Rabbits live an average of one year in the wild. 7-8 years in captivity. It is not easy being a predator either. The rabbit often gets away and then the predator is then tired and hungry. Or once the prey is caught, it may be stolen by a larger predator. Dinner is not guaranteed in the wild.

### **What is camouflage?**

Ability to use color, pattern, shape and texture to escape notice or capture. Cannot eat what you cannot see!!!!

Some animals have the ability to go change colors to blend in with their surroundings. For example, snowshoe rabbits and arctic foxes are brown in the summer and white in the winter. (The length of the day triggers hormonal changes, which cause the hair color to change.)

### **Why might predators need camouflage?**

Predators need to be able to surprise they prey without being detected.

### **SHOW EXAMPLES OF CAMOUFLAGE**

#### **Can you think of any time animals could use the “opposite” of camouflage?**

Birds. A lot of time the male bird is brightly colored (cardinals, etc.) while the female blends into their surroundings to protect their nests.

Zebra’s stripes make an optical illusion for predators causing them to misjudge distance to prey or even the number of prey.

Some animals that are poisonous or foul-tasting are brightly colored – frogs, monarch butterfly.

### **CAMOUFLAGE TRAIL GAME**

20 objects are hidden along edge of field. Put down a strip of orange tape in front of

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where the items are hidden so the kids know where to look. These objects are everyday items familiar to kids.

2 rules: Do not touch objects. Stay behind line to protect habitat

Give kids a couple minutes, discuss what was found and why. Was it because it blended in or did not blend in because of color, texture etc.?

### **Some animals use mimicry for defense.**

They have markings that make them look like other critters. Some moths can look like owls, caterpillars like snakes, flies like bees, frogs and poisonous frogs, etc.

### **SHOW EXAMPLES OF MIMICRY**

#### ***(Optional)***

Other ways animals have for defense:

Chemical weapons – some frogs, bees, and snakes use venom in hunting and for defense.

Skunks and insects emit foul odors as a warning or appetite deterrent.

Some animals are covered by inedible spikes and plates – porcupine or pangolin (a type of anteater).

Fleeing – white tail deer or cotton tail rabbits offer a clear marking (the white tail to follow during a chase. The predator focusing on the tail loses visual grasp on the rest of the animal so when it disappears (by stopping and turning or sitting on “target” and becomes confused.

Playing dead- most predators do not like eating “dead” food. Opossums play dead when threatened.

### **Wrap up by asking who the biggest predator is in Bird Park?**

Us. Emphasize “Respect, Replace and Recycle