

## Signs of Life [MC]

\*Adapted from Learn NC\*

**Grades:** 3-5

**Time:** 45 minutes to 1 hour

**Goals:** To understand ecosystem dynamics by surveying a habitat for signs of life.

### **Objectives:**

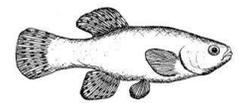
Students will be able to: define ecosystem; define habitat; discuss ways species use their habitat to survive; understand human-species interactions; and develop an understanding of conservation of habitats.

### **Materials:**

Digital cameras  
Survey sheets (provided)  
Clipboards  
Pencils

### **Procedures:**

1. Pre-Activity (introduction): Explain how scientists can better understand ecosystems and habitats by taking a survey of the wildlife of a particular area. Have the students define ecosystem and habitat and give examples of each (e.g. a forest as an ecosystem, hardwood trees as a habitat for birds). Explain that this is also a good way to figure out how humans have impacted an ecosystem and they are going to perform a survey to demonstrate this.
2. Activity: Take the class to a wetlands area. This can be close to a pond, a lake, a river, or an estuary. Divide the class into groups of 3-4 students and pass out their student survey sheets. Once they locate a habitat, they are to use their digital cameras to take photographs of any signs of life. These can be tracks on the ground, nests, holes/burrows, etc. They are also to take pictures of any signs of human interaction within these habitats. They can be pieces of trash, human footprints, carvings in trees, etc. Once they have collected enough evidence of habitat use and signs of life, you can return to the classroom or gather the students to complete the review and discussion.
3. Post-Activity (review): Discuss with the class what signs of life in their ecosystem they found. What animals might have created nests or burrows? Were they mammals, birds, reptiles, amphibians, etc.? How many of each did they find? Create an understanding from your students that humans have impacted this ecosystem in some way by asking them to describe the signs of human interaction and where they found them. How have humans impacted the ecosystem? Ask the students to brainstorm ways in which we, as humans, might impact the ecosystem less or create a better habitat for the other inhabitants.

**Key Words:**

Habitat

Avian

Plants

Burrows

Ecosystem

Amphibians

Human impact

Anthropogenic

Mammals

Reptiles

Nests

**Background Information:**

\*Adapted from Dialogue For Kids\*

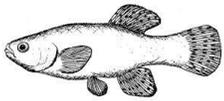
Just like our homes, species require a place to live. Some of our homes are as small as a loft or as large as a mansion; the same holds true for other species. Their homes, or habitats, can be as small as their den or burrow, or as large as a whole ocean. Within our habitats, we all require certain things to survive: food, water, oxygen, and a place to live or shelter.

Where we can go to a supermarket to purchase our food, other species have to hunt and gather their own, so a main requirement of their habitat would be an abundance of a food source. For herbivores, or primary consumers, their food source would most likely be found in an open meadow, a field, or a dense forest floor. In the marine ecosystem, their food source would be phytoplankton, algae, eelgrass, seaweed, or kelp. For omnivores, or secondary consumers, their habitat would be wherever their primary food source was located. This is a main reason for many secondary consumers migrating into and out of large habitats, to follow their food source.

Since all species have the same basic requirements, it is not uncommon to find many different species occupying the same habitats. All of these species will interact with each other, as food sources, potential mates, rivals for territory, or groups such as flocks, pods, or herds. Together, they create a community within their habitat.

When we look at species diversity, we are looking at the number of individuals within a species as well as the number of different species within one habitat. When we say that a habitat has high biodiversity, it means that there are a lot of different species and individuals occupying that one habitat. But, when a habitat exhibits low biodiversity, it could mean something is wrong within that habitat. Sometimes low biodiversity can be caused by habitat destruction from humans, decreasing the amount of space and food sources available to the species that occupy it.

When there is low biodiversity, we often will designate an area as a “critical habitat” that must be protected and conserved by law to prevent any further damage. Sometimes though, it is too late for species to survive in such low numbers and without proper food and shelter, and they go extinct. By surveying different habitats, we can understand how species interact with each other, how many individuals are located within the habitat, and whether the habitat needs to be protected from further human interference.



## Signs of Life Student Survey

Date: \_\_\_\_\_ Survey Team Name: \_\_\_\_\_

Survey Team Members: \_\_\_\_\_  
\_\_\_\_\_

Which habitat did you choose to survey? \_\_\_\_\_

Signs of life: (circle what you found)

### BIRDS

Nests

Feathers

Seeds

Songs

Tracks

Live birds

### AMPHIBIANS

Splashing

Croaking

Water source

Fallen tree logs

Insects/worms

Live amphibians

### REPTILES

Holes

Rustling

Wood boards

Sandy soil

Skin/scales

Live reptiles

### MAMMALS

Burrows/dens

Footprints

Tree scratches

Fur

Poop

Live mammals

### HUMANS

Trash/litter

Footprints

Carved trees