

**GRADE LEVEL:** PreK, 2

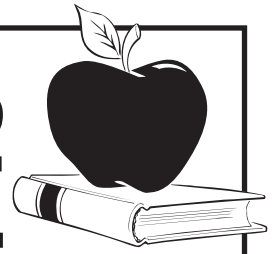
**NEXT GENERATION SCIENCE STANDARDS:** 2-LS4-1

**ILLINOIS EARLY LEARNING STANDARDS:** 11.A.ECa, 11.A.ECb, 11.A.ECd, 11.A.ECf, 11.A.ECg, 12.A.ECa, 12.A.ECb, 12.B.ECa, 12.B.ECb, 12.C.ECa, 13.B.ECa, 13.B.ECb

**SKILLS:** observing, gathering information, reading, communication

**OBJECTIVE:** Students will learn that in the forest, and in all of nature, there are millions of living things and that each one has a unique role to play.

# TEACHER'S GUIDE



## UNIT TWO ■ LESSON THREE

# Bugs, Beavers, Birch Trees and Birds

### BACKGROUND

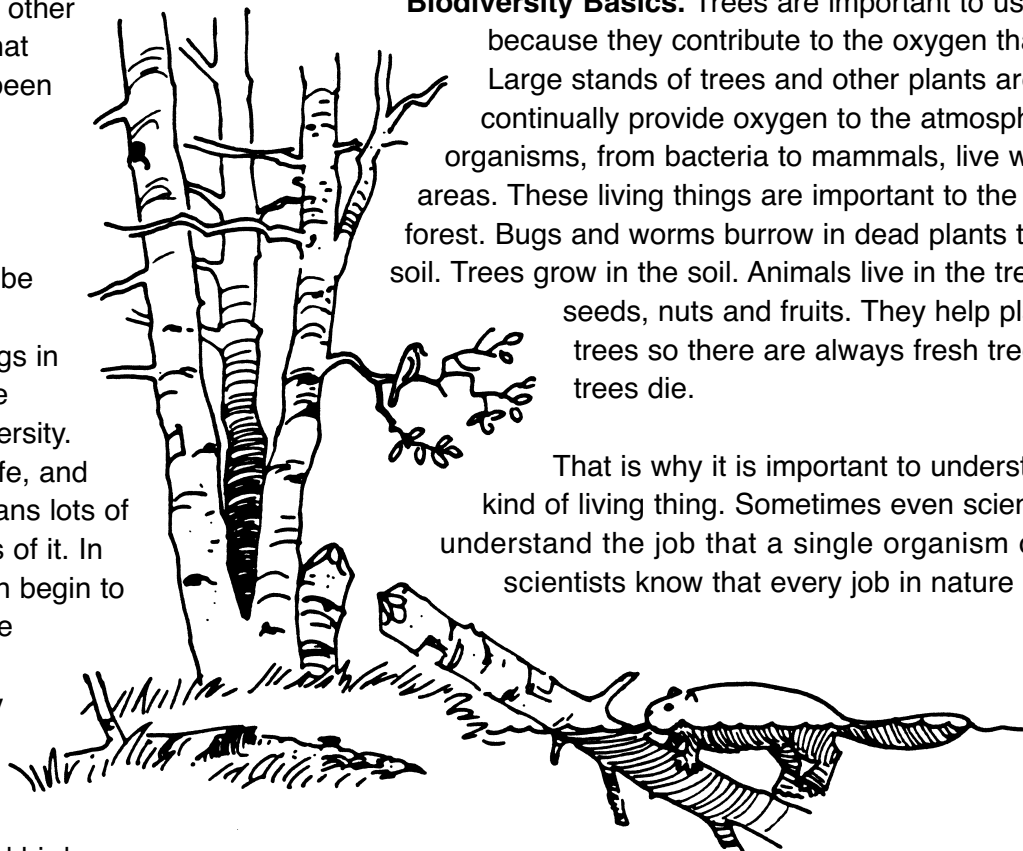
How many types of living things are there in the world? Believe it or not, no one knows. Scientists have identified more than a million and a half different kinds of living things: animals, plants, fungi and others. More than 54,000 species live in Illinois. But scientists also know that there are millions of other living things that have not yet been identified or named.

There is a big word to describe the fantastic variety of things in this world. The word is biodiversity. "Bio" means life, and "diversity" means lots of different forms of it. In Illinois you can begin to understand the importance of biodiversity by studying bugs, beavers, birch trees and birds.

**Working Together in the Woods.** In even a small wooded area there is an amazing variety of life. Every living thing in the woods has its own unique role to play. If there were no bugs or worms, we would not have soil to grow food and forests. If there were no good soil, there could be no trees. If there were no trees, there could be no beavers or birds. Bugs and worms are major contributors to the foundation of our forests.

**Biodiversity Basics.** Trees are important to us also because they contribute to the oxygen that we need. Large stands of trees and other plants are needed to continually provide oxygen to the atmosphere. Many organisms, from bacteria to mammals, live within forested areas. These living things are important to the health of the forest. Bugs and worms burrow in dead plants to help make soil. Trees grow in the soil. Animals live in the trees and eat seeds, nuts and fruits. They help plant more trees so there are always fresh trees when old trees die.

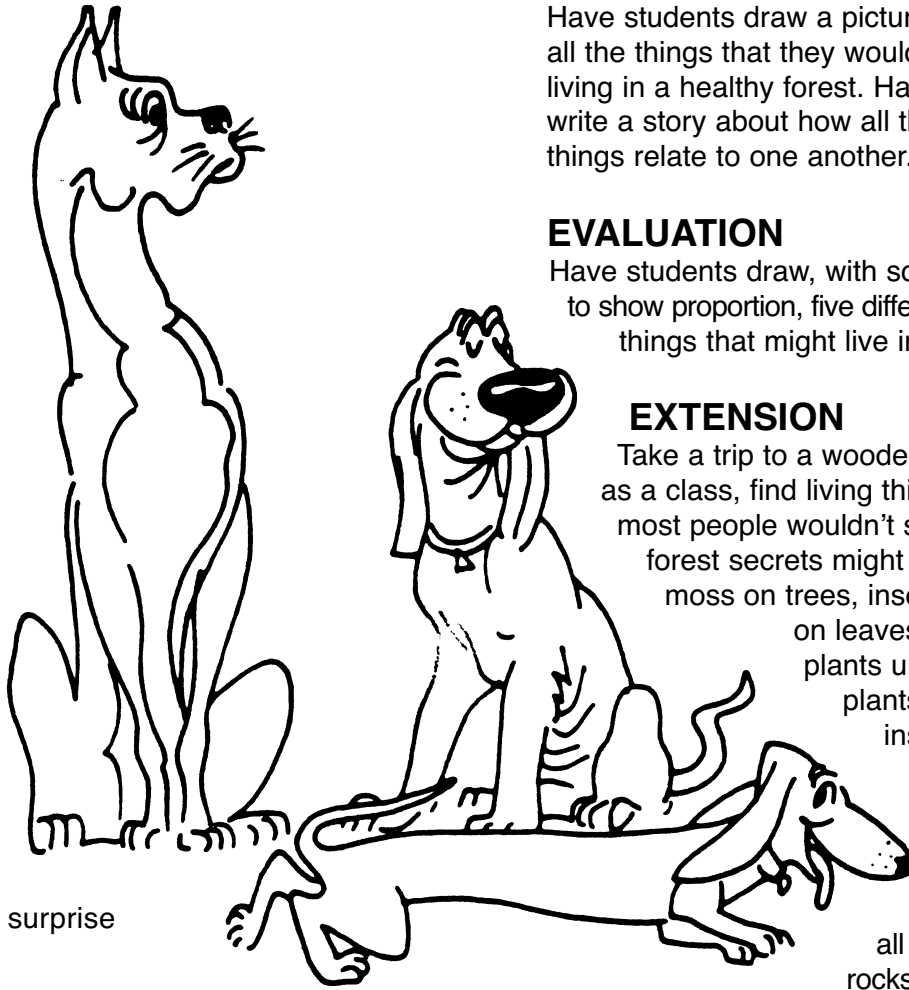
That is why it is important to understand every kind of living thing. Sometimes even scientists do not understand the job that a single organism does. But scientists know that every job in nature is important.



## PROJECTS AND ACTIVITIES

Take the students on a walking trip around the school grounds or the block. How many kinds of living things can they identify? Keep a list. Have them take their time, and since they are looking for diversity, be as specific as possible. Include people, different kinds of animals, plants, fungi and other organisms. If they see dogs, list different kinds. Look for differences in trees and shrubs. Don't forget grasses and insects. Even in an urban setting, the length of the list should surprise students.

Divide the class into five groups. Each group should be assigned to draw or bring to class pictures of different things that live in the woods. One group should be assigned to trees, one to smaller plants, one to mammals, one to birds and one to insects. Offer a prize to the group that can find the largest number of living things.



Have students draw a picture to include all the things that they would like to see living in a healthy forest. Have them write a story about how all these living things relate to one another.

## EVALUATION

Have students draw, with some attempt to show proportion, five different-sized things that might live in a forest.

## EXTENSION

Take a trip to a wooded area and, as a class, find living things that most people wouldn't see. Such forest secrets might include moss on trees, insect larvae on leaves, small plants under large plants and insects under logs or rocks. (Be sure to return all logs or rocks to their original positions. It

is wise to use a hoe to pull back logs or rocks before reaching under them.) Keep a list of the things you find and, in the classroom, discuss the role that these hidden life forms might play in the woods.

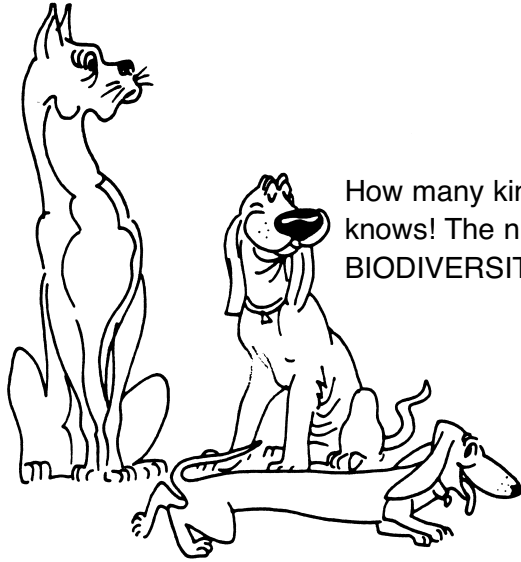


## VOCABULARY

biodiversity  
species

# Bugs, Beavers, Birch Trees and Birds

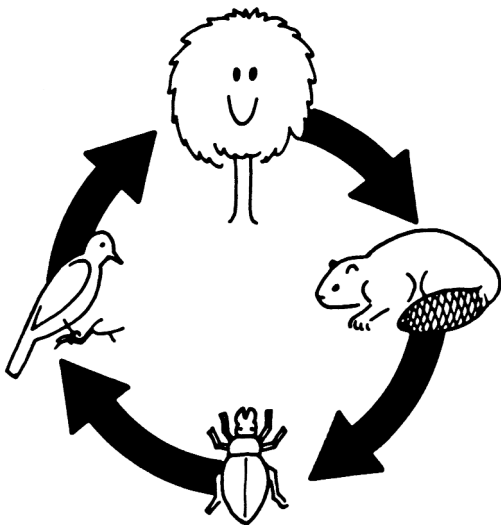
# STUDENT'S GUIDE



How many kinds of living things are there in the world? No one really knows! The number is so big, there is a very big word to describe it . . . BIODIVERSITY.

## Working Together in the Woods

There are lots of living things in every woods. And they all work together. Bugs and worms dig in soil to help make it better. Trees grow in the soil. Some animals live in the trees. If there were no bugs, there could be no woods.



## Biodiversity Basics

In Illinois, there are very big forests and smaller forest areas, too. Forests help make the oxygen that we breathe. Millions of plants, animals and other living things live in the forests. Each of these organisms has a job to help the forest survive. If there were no bugs, there would be no forest. There would be less oxygen. Every job in nature is important.



# Forest Secrets

Lots of different animals live in every forest. In this one there are 14 different kinds of mammals, birds and insects.

Can you find them all?  
Color each animal as you find it. Then color in the woods, and they will be hard to find again!

