

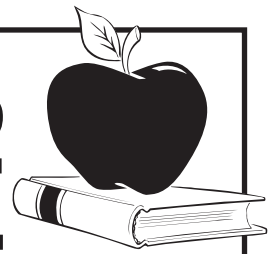
GRADE LEVEL: PreK

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

SKILLS: observing, gathering information, critical thinking, communication

OBJECTIVE: Students will learn that animals and the environment itself depend on the invisible work of trees.

TEACHER'S GUIDE



UNIT ONE ■ LESSON FOUR

A Little Help from Their Friends

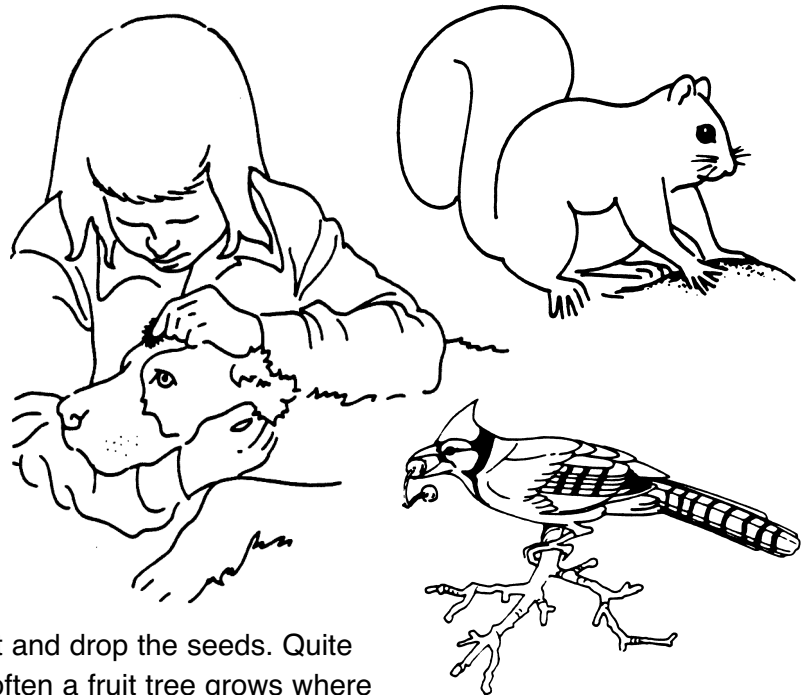
BACKGROUND

Trees can't move; they can only stand in one place. And yet they must move their seeds from place to place. If seeds just fell to the ground under the tree, they could not grow. There would not be enough light or water. The parent tree takes up too much room. But tree seeds don't just fall to the ground. They are moved to new locations in a number of ways.

Blowing in the Wind. Some tree seeds simply blow in the wind to new locations. Cottonwood trees, for instance, wrap their seeds in fluffy cottonlike material that easily blows great distances. Silver maple trees have seeds with wings on them like little helicopters. They twirl through the air and land some distance from the parent tree.

Other trees, willows for example, grow along stream banks. They may drop their seeds into the water so they are carried and planted downstream.

Animal Planters. Some seeds don't need the wind to fly. They just hitch a ride with a bird. Many trees, especially fruit trees, are planted by birds. The seeds of these plants are inside their fruit. Birds pick the fruit, fly away to eat



it and drop the seeds. Quite often a fruit tree grows where a seed has been dropped by a bird.

Squirrels are very important tree planters. Squirrels hide food away for the winter, especially acorns, walnuts and hickory nuts. Squirrels bury so many nuts that they don't find where they buried them. Inside every nut is a tree seed which, thanks to a squirrel, can become a full-sized tree.

Other animals plant seeds, too. Plant seeds can cling to the fur of a dog, a fox or a raccoon, only to fall off and grow in some distant location.

How We Plant Trees. People plant trees but not always on purpose. In nurseries, trees are started from seed in trays in greenhouses or outdoors in seed beds. Around our homes we usually plant trees once they have become healthy young

saplings. But people also plant trees accidentally. Like animals they may carry plant seeds that cling to their clothing. Like birds, people eat fruit and may leave the seeds behind to grow. Every student has probably picked up an acorn, an apple, a walnut, a buckeye or a pine cone and carried it to a new location. He or she may have planted a tree and not even known it.

PROJECTS AND ACTIVITIES

Inside every seed is a complete plant ready to grow. This is easy to demonstrate to the class with lima beans. Soak some dried lima beans overnight then peel off the seed coat. Have students gently open them. A curled plant can be seen inside, ready to emerge.

Plant some trees right in the classroom. Have students bring in tree seeds, nearly any kind, from maple seeds to apple seeds, to avocado or peach pits, will do. Plant them in small flower pots. Put a layer of pebbles in the bottom of the pot covered with about three inches of tamped soil. Add a seed and cover it loosely with soil. If you use potting soil, mix it half and half with sand. Water the soil and label the pot. Water again only when the soil becomes dry. Keep a piece of plastic over the top of the pot until the seed emerges. Keep the pots in a warm, sunny location. The plants that emerge can grow into full-sized trees.

Using a good guide to tree identification (see "References," page 49), take a neighborhood nature hike in late spring and identify as many tree seeds as possible. Be sure to check the tree as well as the ground around it. If you encounter a flowering tree, point out that the seeds are developing in the flowers. In the fall, bring as many seeds as possible back to class, identify them with an identification book, and discuss how they might be dispersed naturally.



As a class, read *Johnny Appleseed* by Steve Kellogg. The story provides excellent discussion points not only on planting trees, but also on the environment and the relationship between people and nature.

Using a collection of seeds (walnut, pecan, acorn, etc.), place each seed in a sock and ask the students to reach inside the sock and identify the seed by its size and texture.

Divide the class into small groups. Give each group of students a variety of seeds. Have the students come up with a classification system for the seeds. They may choose to sort them by size, shape or method of dispersal. Have the students discuss how they made their decisions about how and in which group to classify the seeds.

EVALUATION

Present students with a variety of tree seeds, either actual seeds or pictures, and have them describe as many ways as they can think of that each particular seed might be dispersed from the parent tree. Creative possibilities should be encouraged.

EXTENSION

Take a field trip to a nursery where trees are started from seeds or cuttings in a greenhouse or in an outdoor seed bed, transferred to fields, and balled and burlapped for replanting. Also have students view the different types and sizes of trees at the nursery. Take a field trip to a nature preserve or wooded park and observe the distribution of the different types of trees. Discuss how these trees may have been planted: by people, by animals, by birds or by the wind or water.

VOCABULARY

fruit	sapling
nursery	seed
nut	

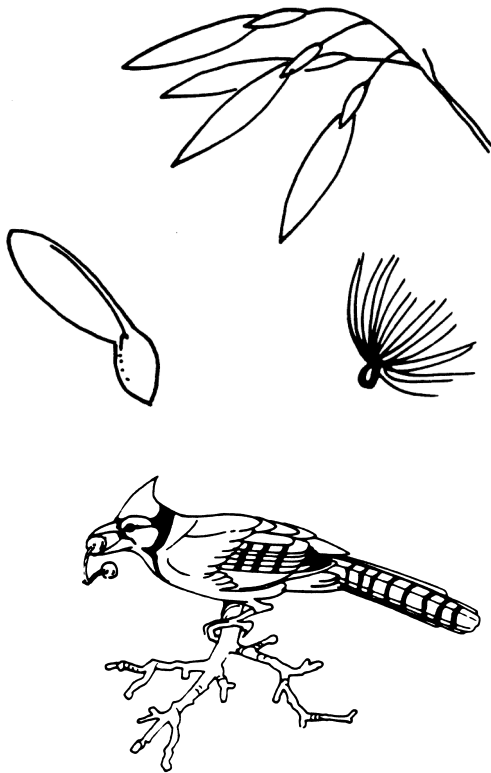
A Little Help from Their Friends

STUDENT'S GUIDE

Trees can't move. They can only stand in one place. But trees have friends that help them move their seeds to good growing locations.

Blowing in the Wind

Some seeds are carried by the wind. Cottonwood seeds can blow many miles. Maple seeds twirl like helicopters in the wind. Some seeds, such as those of the willow tree, float like little boats. New trees grow along the shore.



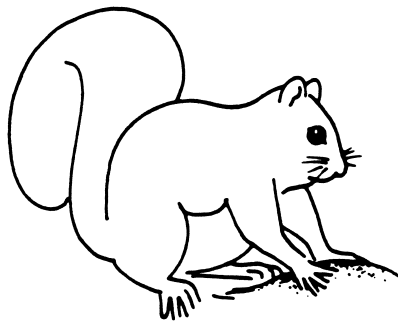
Animal Planters

Some seeds are carried by birds. Birds plant cherry trees when they eat the fruit and drop the seed in their wastes.

Squirrels plant trees when they bury nuts and don't dig them up. Furry animals can carry some sticky plant seeds to new places.

How We Plant Trees

People plant trees on purpose in their yards. Sometimes people plant seeds and don't even know it. Have you ever carried an apple core to a new place and left it on the ground? You may have planted a tree!



Who Will Plant This Tree?

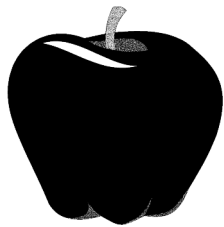
Here are six tree seeds/seedling and six tree planters. Draw a line from each seed/seedling to the most likely planter.



MAPLE



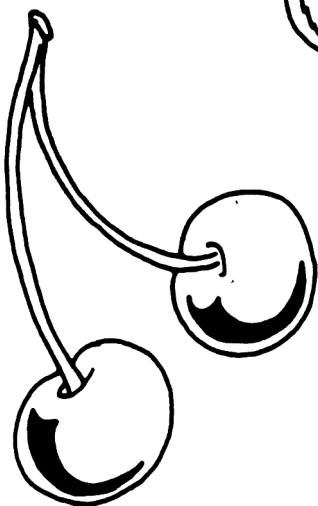
SEEDLING



APPLE



OAK



CHERRY



WILLOW

