

GRADE LEVEL: PreK-1

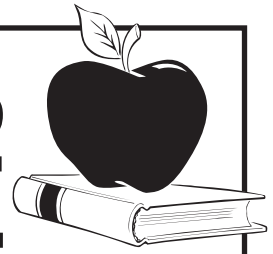
NEXT GENERATION SCIENCE STANDARDS: K-ESS3-1, K-ESS3-3, K-LS1-1, 1-LS1-1

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

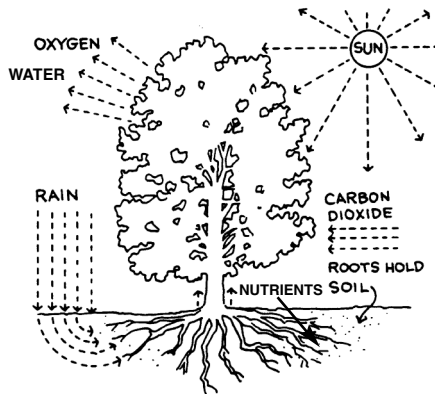


UNIT ONE ■ LESSON ONE

Trees at Work...Just Look!

BACKGROUND

It may look like trees just stand around and do nothing. Actually, they are very busy doing a variety of jobs that are essential to animals and the environment.



product that comes from trees. Every part of a tree is used to make some important product. Ground up wood is used to make paper for note pads, newspapers, candy wrappers and cereal boxes. Sap, the liquid that flows in trees, is used to make maple syrup, chewing gum, crayons, paint and soap. Bark is used to make dyes and medicines. Leaves and roots provide oils for cosmetics and medicines.

Tree Houses. Some animals spend most of their life in trees—many birds, for instance, as well as squirrels, raccoons, opossums and several types of insects. These animals are born in trees, live in trees and raise their young in trees. For these animals, trees provide shelter from the weather and from enemies. Trees provide food in the form of fruits, nuts, leaves, bark and roots. Even dead trees provide shelter and food for many species.

What's a Tree Done for You Lately?

Very few people actually live in trees, but many of us live in wooden houses made from trees. Many of the items inside our homes are also made from wood, including furniture, floors, toys, musical instruments, kitchen utensils and much more.

In fact, there are many other household items, because wood is not the only

Just as important, trees provide jobs for people—foresters and nurserymen, for example. All of the products made from trees create many more jobs. Have you ever wondered who makes crayons or chewing gum?

Trees provide food for people, too. Fruits like apples, pears, peaches and cherries come from trees. So do nuts like walnuts and hazelnuts. Trees make our world a nicer place. Imagine your neighborhood without trees. Parks and campgrounds would certainly not be the same without trees. Trees are just beautiful to look at.

Clean Air, Clean Water—Thank the Trees. The quality of the world around us, the air, soil and water, depends on the roles trees play in our environment. Trees help cause rain because they return moisture to the atmosphere: their roots extract it from the soil and their leaves return it to the air. Trees clean the air we breathe because they take in carbon dioxide through their leaves and give off the oxygen we need to breathe. If trees didn't breathe, neither could we. Tree roots hold soil in place to prevent erosion which not only saves soil but also helps keep our streams and lakes cleaner. Water is much cleaner when there are lots of trees around. Trees provide shade in the summer to help keep our homes cool.

They block the wind in the winter which makes it easier to warm our homes.

PROJECTS AND ACTIVITIES

Have students draw or collect from magazines pictures of animals that live in or around trees, along with corresponding pictures of food they might eat. Older students could compile two matching lists of animals and tree foods. Lists could be combined on the chalkboard as the basis for a participatory classroom matching exercise.

Have each student bring in or draw in class a picture of his or her favorite product that comes from a tree. You may want to discuss some foods that students would not suspect are tree products such as cinnamon (bark) and olives (fruit). Students could also provide pictures of the food in its natural state and as part of a finished product—apple pie or peach ice cream, for example.

Make a chalkboard list, elicited from students, of items that are made from trees. Don't overlook nonwood products such as crayons (from sap), cork (from bark) and suntan lotion (from cellulose). Discuss the parts of the tree that the products may have come from or the number of jobs that may have been required to produce the product. Have the students copy the list and take it home to survey their home for those and other wood products.

Explain that we make products from wood because it's strong, durable and easy to work with. Discuss with students useful things they could make with string and twigs or branches they find on the ground. Lead the students on a twig search, then actually construct some useful item or items (pencil holder, picture frame). Students could also do this individually or in groups. Have each student describe or draw his or her favorite place where trees grow, favorite tree or favorite activity involving trees.

Have students discuss or actually plan a project with trees that could improve the environment. Discuss how even an individual student could accomplish some part of this project.

Have a tree party where everyone eats tree snacks!

EVALUATION

Why do people plant trees in their yards? Are there any places in the world without trees? What are they like? How are they different from where you live? Would you want to live there? Why? How do people depend on trees?

EXTENSIONS

Divide the class into three groups. Individuals in the first group draw or collect pictures concerning the relationship between trees and wild animals. The second group focuses on trees and people. The third group is concerned with trees and the environment. When the pictures have been collected, the groups should assemble them into three poster-sized collages with titles of their choice.

Have individual students, or a group of students, pick a single tree and observe it closely for a period of time—fifteen minutes, for example. Students should then draw or compile a list of all of the evidence of animal activity that they found: actual activity involving birds, squirrels and other animals; observed nests; evidence of animals eating (holes in leaves, piles of sawdust, bare branches or empty fruit pods); and others.

Have students, as individuals or groups, create and answer their own "what if" questions. Examples might include: "What if birds didn't have trees; where would they live?"; "What if we didn't have wood; what would we make chairs from?"; or "What if there were no trees; what would be in parks?"

Construct a classroom terrarium (see "References," page 49, *Bottle Biology Resources Network*) with small treelike plants to demonstrate how trees return moisture to their environment. Add water, seal the terrarium, then have the classroom observe how the moisture is recycled.

VOCABULARY

carbon dioxide
environment
erosion
oxygen
sap

Trees at Work... Just Look!

STUDENT'S GUIDE

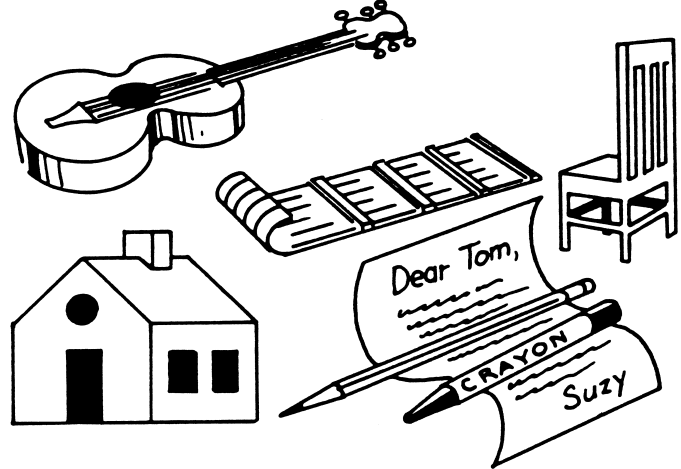
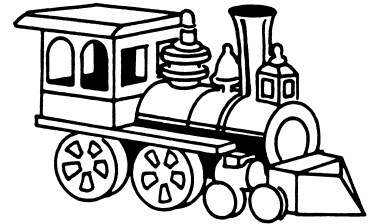
Tree Houses

Trees don't just stand around. They do many jobs that are very important to animals and the environment. Some animals spend most of their life in trees. Birds, squirrels, opossums, raccoons and insects find shelter from the weather and enemies in trees. They get their food from trees, too. Dead trees provide shelter and food for many animals.



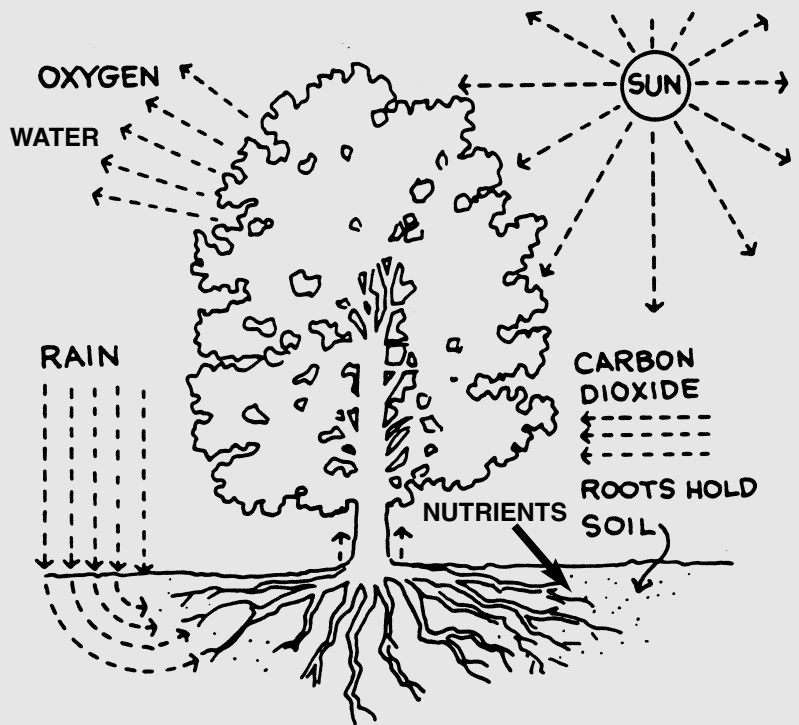
What Trees Do for You

Many people live in wooden houses. Many products in our houses are made from wood. Every part of the tree can be used to make something including paper, crayons and medicine. Trees provide jobs for people. Trees give us food. And trees make our world more beautiful.



Trees at Work Make a Better World

Trees help cause rain. Trees clean the air we breathe. Tree roots keep soil from washing away. Trees provide shade in the summer and block cold winds in the winter.



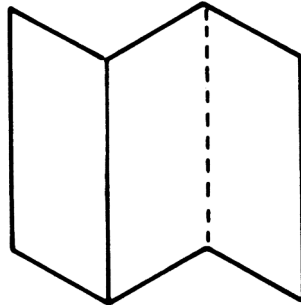
Trees at Work

What you will need

- heavy white construction paper
- scissors
- crayons or markers
- tape (optional)

1

Fold a piece of 9" x 12" construction paper into three panels, as shown.

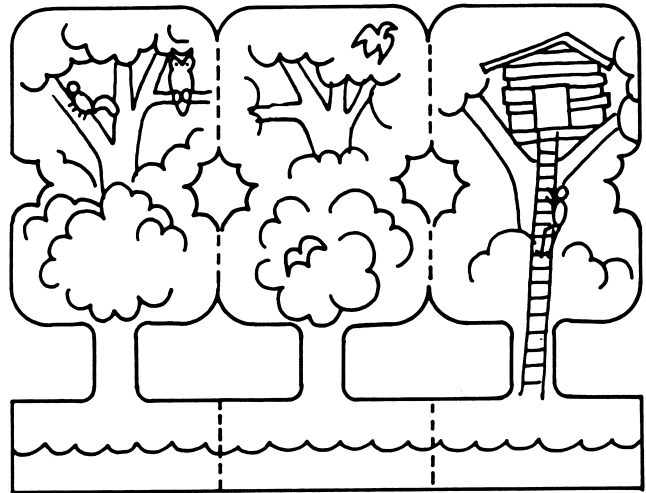
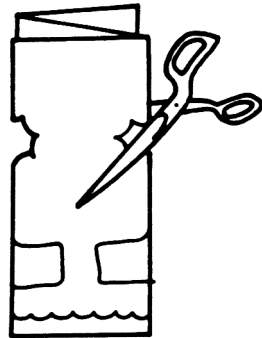


2

Unfold the paper so there are three trees. Decorate the trees to show they are important to animals and the environment. Your trees could show differences between seasons of the year.

2

Draw the tree shape on the front panel. Carefully cut out the shape.



4

Make more than one set of trees and tape them together to make an entire forest.

