Talk About Trees
Third Grade Hands-on Program

This program can be conducted in the regular classroom. Children will work in cooperative groups of no more than six (i.e. in a classroom of 24, there would be 4 groups of 6 children each.) (Make sure to prepare adequate materials.) Each class will spend approximately an hour engaged in activities to reinforce the concepts of: 1) Tree Identification/Classification; 2) Life Cycle; 3) Forest Health; 4) Trees as a Resource

Introduction

Introduce yourself and the program. Tell students that they will be reviewing four aspects of trees (listed above). Divide the class into groups of 6 or fewer students. (You may want to ask the teacher to assist with this.)

Part I - Tree Identification/Classification

Materials: **5-6 Tree key charts (attached, copy, color and laminate)**
5-6 conifer branches or pictures of conifers
5-6 broadleaved branches or pictures of broadleaved trees

Trees all have similar traits or characteristics. Ask students to verbally list them. Trees, however, also have dissimilar traits. Explain that students will be categorizing and making choices about trees by observing needles, leaves, and if time permits, cones, seeds and fruit. Define the term "keying out" trees. Define "**broadleaved**" and "**coniferous**".

Pass out laminated chart for each group. Have students go to the bottom of the chart, define and review the two categories. Pass out needles and leaves. As a group, have students "key out" samples on each level of the chart. If time, have students key out cones, seeds and fruit.

Extended learning (if time permits). As a whole group, use a "kid key" chart. Each child writes his or her name on a post-it note. Key out the students starting at the bottom of the trunk and workout toward the edges. Explain to kids that trees can be keyed out to many levels. (See Ranger Rick's Naturescope, Tree's Are Terrific, Copycat Page 21, "Keying Out Trees".)

Part II - Life Cycle

Materials: **5-6 Laminated stages of a tree's life (attached) ***
1. Seed 2. Sprout 3. Sapling 4. Mature Tree 5. Dead Tree 6. Rotting Tree

Children stay in small groups.

Define and discuss "**life cycle**"

Explain life cycle game. Rules: 1) Each child may only touch his or her own card. 2) Cards must lay face up on table or floor.

Pass out life cycle cards. (Hint: Each child takes the top card and passed the remainder of the cards to the next person.)

Have the group arrange the cards into the tree's life cycle (remember, they can only touch their own card). Check on each group; make sure the cycle is in a circular, not linear pattern.

Ask all groups: "Where does the cycle start? Where does it end? What is the least important part of the cycle?" Eventually, the children will figure out that the life cycle is circular and there is no end or no beginning and that all stages depend upon the preceding stage.

Conclude the activity by drawing a circle on the board. Erase part of the circle to illustrate that a circle is only a circle when it is continuous.

*Adapted from Project Learning Tree's Environmental Education Pre-K-8 Activity Guide, page 302-303. Activity #79, "Tree Lifecycle"

Part III – Forest Health

Materials: **Fungus Conk or Diseased Wood**
Insect Damage
Beaver stick or picture of a beaver
Burned piece of wood or picture of a forest fire
Extra samples for larger groups
5-6 sets of cards: Card one: "Does this hurt the forest?" Why?"
Card two "Does this help the forest?" Why?"

Children stay in small groups.

Explain that each group will get an item came from the forest and has an effect on the trees in the forest. Show items briefly and describe each one.

Distribute one sample to each group. (Have extra samples for larger groups.)

Appoint a spokesperson for each group. Pass out two cards to each group. Have the students discuss the questions.

Ask for the group reports and discuss the following:

Fungus/Disease – Decays the wood
Used by artists
Kills the tree
Devalues wood
Puts nutrients back into the soil

Animals - Thins the forest
Fun to look at
Eat insects that hurt trees
Disperse seeds
Kill trees and plants

Insects - Pollinate trees
Eat the cambium-kills the tree
Provide food for animals
Create openings for diseases

Fire - Destroys forests and animals
Lodgepole pinecones open
Puts nutrients back into the soil
Kills diseases
Kills dead and dying trees
Creates open spaces for seedlings

Conclude with an explanation of why we reforest.

Part IV – The Forest as a Resource

Materials: **Brown bags with Tree Products***
Bingo Card (attached)
List of items (attached)
Homework-optional (attached)

Children stay in small groups.

Define "**resource**" Discuss trees as a resource. Explain than inside each bag is a tree product.

Play "Tree Products Bingo" Choose one child from each group to start the game. That child sits with her or his back to the group. He or she is the "Tree Products Host". Pass out bags to each host and bingo cards to all children.

"Tree Products Host" describes the item in the bag, without naming it. The rest of the group call out guesses. When the right answer is given, everyone writes it on his or her bingo card.

The item in the bag then goes to a central place in the room ("The Tree Product Table").

Pick a new host and repeat until everyone has had a turn. (Hint: Host becomes the next person in the circle.)

When finished, look at the "Product Table" and finish filling out the Bingo card.

Play bingo now or later with the teacher if time doesn't permit.

Conclude the program, thank the teacher and students and leave "homework" if appropriate.

*Note: Choose products that can be easily spelled by 3rd graders, or attach labels.

Broadleaved

Coniferous

Activity: Grades 3-6
Variation: Grades Pre-K

Science, Language Arts, Performing Arts

Organisms change their lifetimes. Species of organisms change over long periods of time.(13.1)

While every organism goes through a lifecycle of growth, maturity, decline, and death, its role in the ecosystem changes. (13.3)

Ecosystems change through patterns of succession. They are influenced by other phenomena such as disease, insects, fire, weather, and human intervention. (13.4)

Ordering and Arranging, Representing, Identifying Relationships and Patterns

Students will ① diagram the lifecycle of a tree ② compare the lifecycle to a human lifecycle ③ describe the role each stage of a tree plays in the forest (or other) ecosystem.

art materials, copy of student page 305.

Preparation: 15 minutes
Activity: 50 minutes

Background

One of the best ways to learn about trees is to look at their life history. Trees, like all living things, have a lifecycle that includes birth, growth, injury and disease, aging, and death. As trees go from birth to death, their physical form changes, as well as their role in the forest ecosystem. You can learn about past changes in environmental conditions by looking at the growth rings in a cross section of a tree. (See "Tree Cookies" on page 291.) Even more can be learned about the tree's lifecycle by observing the tree from birth as it grows and develops throughout its life.

Most trees begin as seeds. Generally, trees are put into flowering and non-flowering categories. The angiosperms are flowering plants, including wildflowers, shrubs, and many trees. Angiosperms are pollinated by insects, bats, birds, and the wind. Plants that have flowers also protect their seeds inside a fruit. Maple, oak, and all other broad-leaved trees are angiosperms. Gymnosperms (from Latin "gymno-," meaning "naked") have seeds that are not enclosed in fruit or flowers. Rather, most gymnosperms produce their seeds in cones and are pollinated by the wind. The most common type of gymnosperms is the cone-bearers, or conifers, like redwoods, firs, pines, and other trees with needle-like leaves.

If a seed lands in an area with favorable soil, climate, and nutrient conditions, it will germinate (some remain dormant for long periods before sprouting). Usually, many more seeds will be produced than can possibly survive. Most seeds will be destroyed by fungi or other decomposers, or eaten by birds or mammals, leaving only a few sprouts to survive and become mature members of the forest community.

As part of the understory, young saplings must compete with other trees and plants for sunlight, nutrients, water, and space. In dense forests, many young trees must wait for years for older trees to fall and leave openings in the canopy for them to grow into.

The length of time it takes a tree to reach maturity depends on the species of tree.

Trees have many different roles in the forest community depending on their age and size. Their leaves, bark, seeds, flowers, fruit, and roots provide food for many kinds of animals. Trees also provide roosts, shade, and shelter to many living things. For example, holes in older trees and around their roots provide shelters for nests and dens.

Like all living things, trees are subject to disease and injury. Physical damage may not kill the tree, but may provide holes and openings in which animals and insects can live and feed. Eventually, trees weakened by injury and disease will die, fall down, and be decomposed. When they die, trees return their nutrients and other elements back into the soil to be recycled through the forest ecosystem.

Getting Ready

Select a few books on trees from the school library including field guides and stories. (See Bibliography on page 385 for suggested titles). Start a "Tree-Source" center, so the students have easy access to materials for researching trees. Make a copy of page 305 for each student.

Doing the Activity

1. Discuss the idea of lifecycles by asking students to describe the lifecycle, or history of a person. Make sure students include childhood, teenage years, young adulthood, and so forth.

in the discussion. Write these stages on the chalkboard. Ask students to identify the different jobs, roles, or things that a person might do in each stage of the lifecycle. Next, ask them to describe the lifecycle of a tree in similar terms (see diagram below).

2. Distribute art materials and ask students to create the lifecycle of a tree, from birth through death and decomposition. Students should include at least three stages or events in their lifecycles (e.g., a forest fire or insect invasion). Encourage them to research a particular species of tree for accuracy in life characteristics, climate, and environment. Remind students that one event that affects the tree (e.g., insect damage) is likely to clear the way for another event (e.g., a hole for nesting birds). The lifecycle could be represented by a circle on the page, with illustrations and a label for each stage or event, or could be shown in a line on a long, narrow piece of paper taped together at the ends.

3. Students should fill in the details for at least three stages or events on the "Tree Lifecycle" student page. Some items may stay the same throughout the tree's life.

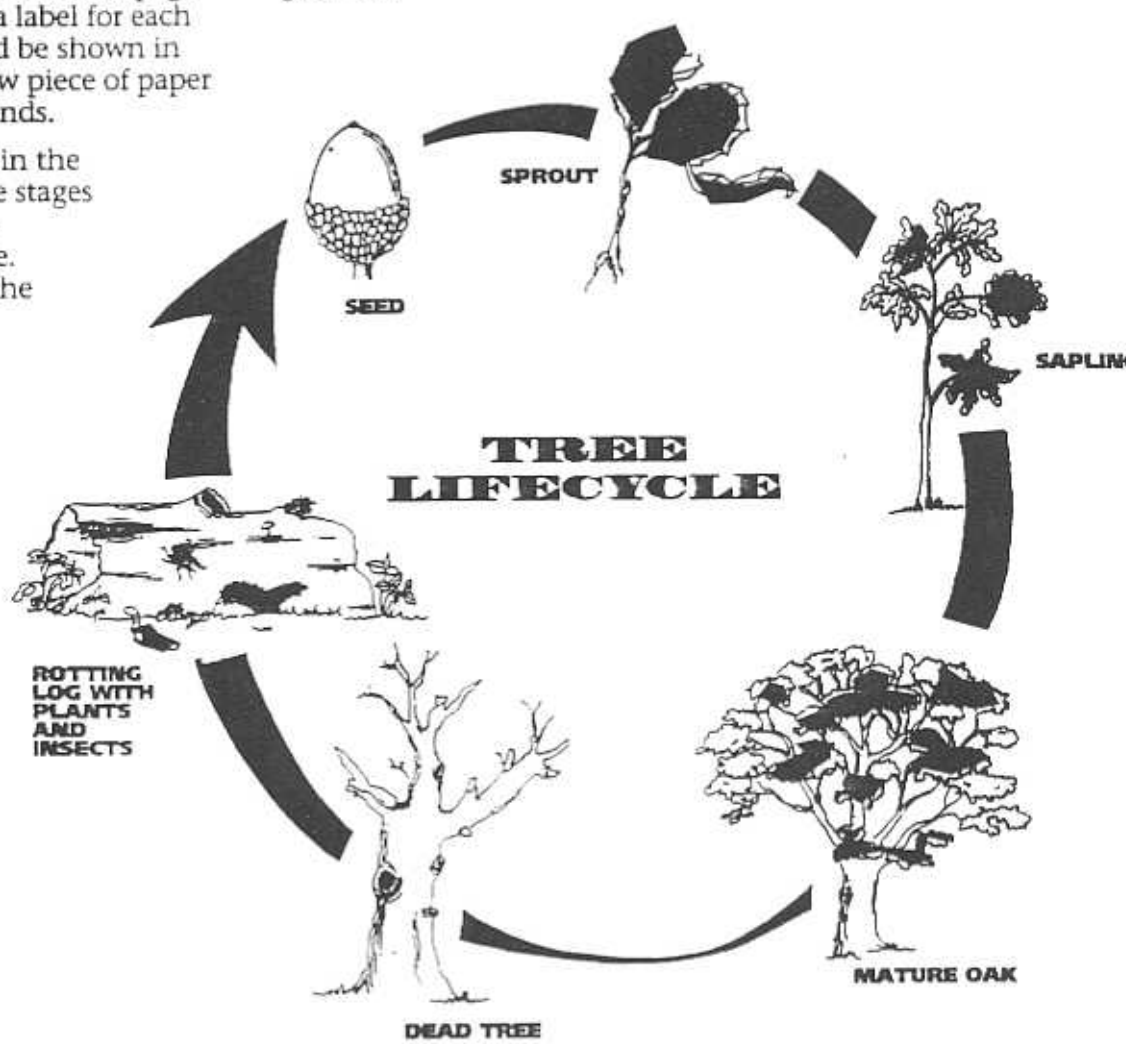
4. Give students the opportunity to share their lifecycles in small groups or with the entire group. Create a "History of the Forest" exhibit by mounting all the lifecycles around the classroom.

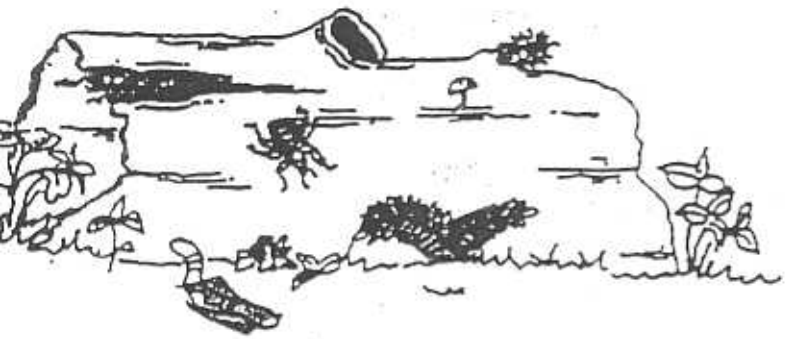
VARIATION—PLANT PERSONIFICATION

1. Ask students if trees are alive. How do they know? (They grow.) How are trees born? (from a seed) Do they die? (Yes, but they can live a long time.)

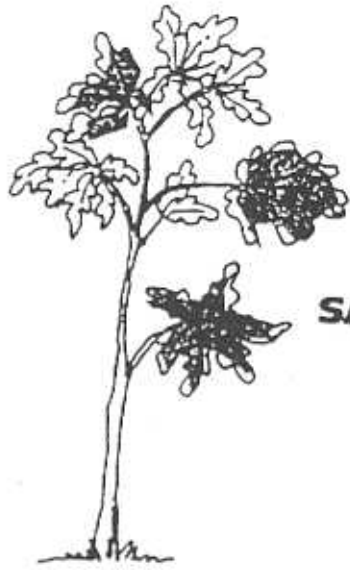
2. Ask students to imitate your movements as you enact the life of a tree.

- Curl up in a tight ball—you're a seed.
- Uncurl and kneel—you've sprouted.
- Stick up one arm (fist clenched)—you've grown a branch.
- Stick up the other arm—you've grown another branch.
- Wiggle your fingers—you grow lots of leaves.
- Stand up (feet together)—you grow tall.





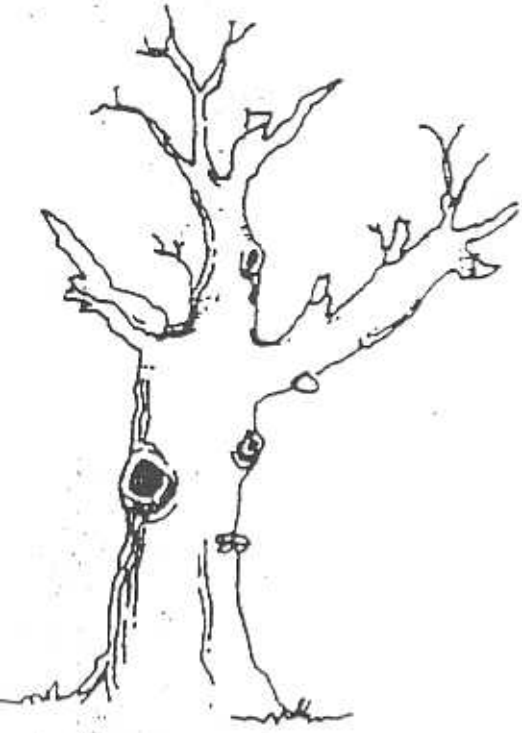
ROTTING
LOG WITH
PLANTS
AND
INSECTS



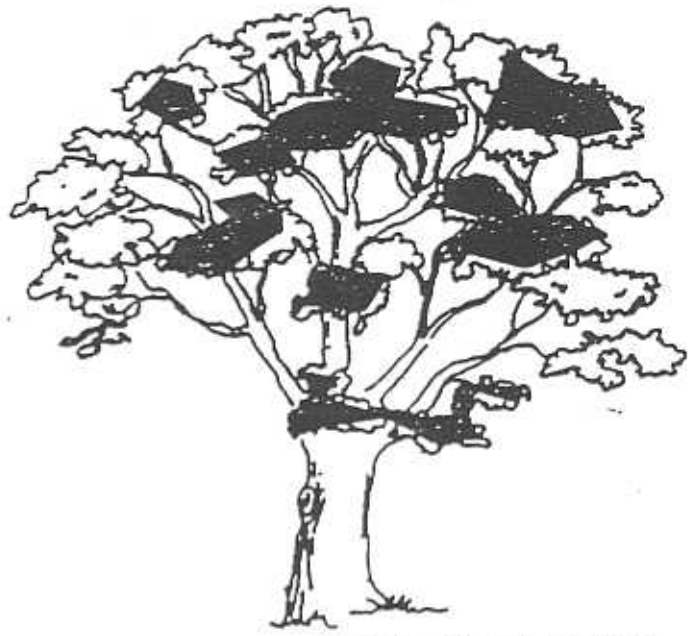
SAPLING

SPROUT

SEED



DEAD TREE



MATURE OAK

#79 - TREE LIFECYCLE
(3 - 6)

Science/Unifying Concepts and Processes:

CCG: Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception, and fundamental entities.

CS: Use concepts and processes of change, constancy and measurement.

BM 3: Arrange parts of a cycle.

BM 5: Diagram and explain a cycle.

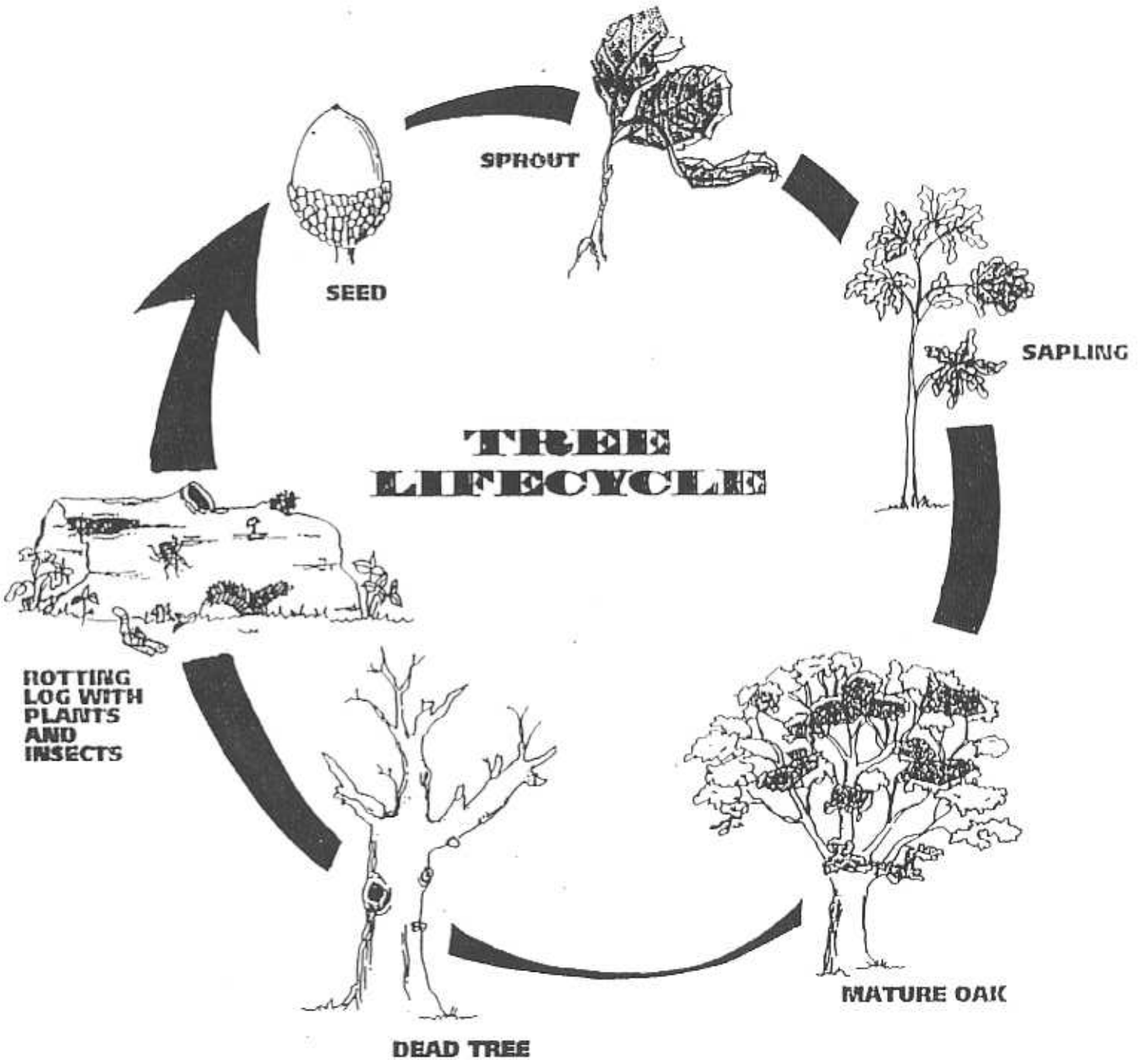
Science/Life Science/Heredity:

CCG: Understand the transmission of traits in living things.

CS: Describe the transmission of traits in living things.

BM 5: Describe the life cycle of an organism.

****Teacher Note:** This activity is more content dense than appears above. If you are using the modification taught in most workshops that includes the writing of the tree's story, then look carefully at the writing content standards, especially if you carry out the full writing process. You can arrange the activity to meet several writing content standards and benchmarks.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TALK ABOUT TREES™

TREE PRODUCTS BINGO

		TALK ABOUT TREES		

Tree Products Bingo Items

golf ball	canned fruit	rubber stamp
"hotel-sized" soap	pencil	film
cellulose sponge	gum	cork
rayon fabric	small toothpaste	packet of cocoa
baby shoe	rubber band	nuts
apple	wooden toy	carpet square
cone	peach pit	shampoo or gel
playing cards	eraser	tire
paper bag	tennis ball	cinnamon stick
coffee bean	book	bookmark

name_____ date_____

Homework

Make a list of twenty products that are made from TREES. Think creatively ! Include some unusual ones.

1.

2.

3.

4.

5.

6.

7.

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11.

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18.

19.

20.