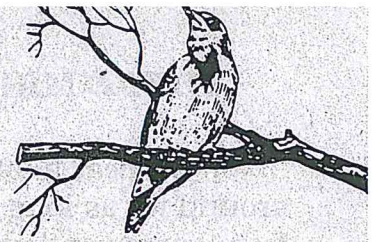


On T.R.A.C.K.S.



Teaching Resources Activities and Conservation to Kansas Students

VOL. 3 NO. 1

KANSAS WILDLIFE & PARKS

FALL 1991

The crisp fall air makes outdoor exploration especially appealing. This edition of On T.R.A.C.K.S. highlights woodlands, an ecosystem not commonly associated with Kansas. But Kansas does have trees -- 1.4 million acres, about 2.6% of the state (as of 1981). Woodlands are bursting with life and teeming with activity. Several activities on trees and woodlands can be found throughout this issue. A wide variety of wildlife can be found in and around the tree community -- check out bobcats on page five and the puzzle on page 13. Something's new in Kansas, turn to page 15 to find out. Want to classroom compost?? Look on page three.

Thanks to all of you who took the time to respond to our questionnaire. You'll notice we've used quite a few of your suggestions -- and we'll continue to do so. Results can be found on page 16 along with the names of the three lucky winners.

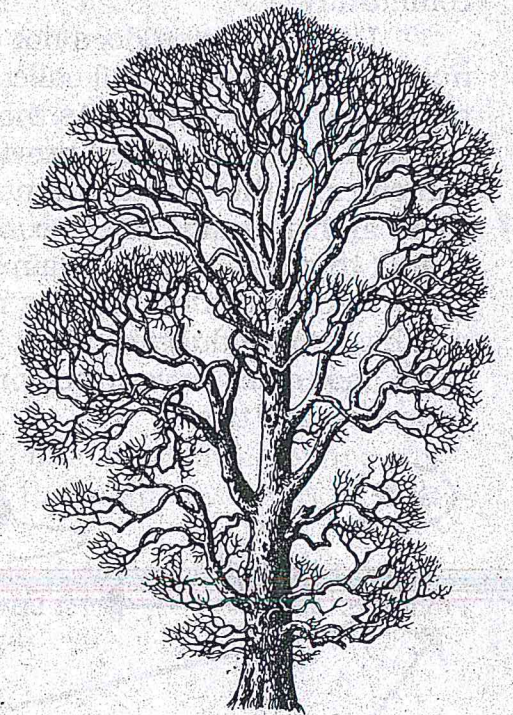
You may have noticed we have a new format, thanks to a new computer program. We think it looks even better and is easier to read. We hope you think so too.

Fall is calling. So make some tracks and explore!!

Mary Kay Ciall

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THERE MIGHT BE PART OF A DINOSAUR IN ME!! DECOMPOSERS

We hear a lot about recycling today like it was a new idea. But recycling has been around for as long as the earth has -- about 4 1/2 billion years!! Nature reuses everything from energy and water to the nutrients essential for life. Decomposers are the organisms that "recycle" organic material into inorganic nutrients (like carbon, nitrogen and phosphorus) through the biochemical process known as decomposition.

Decomposers act as nature's garbage crew by feeding on dead materials. Although they perform a very useful service, it is doubtful they will ever win a popularity contest or be listed among our favorite animals.

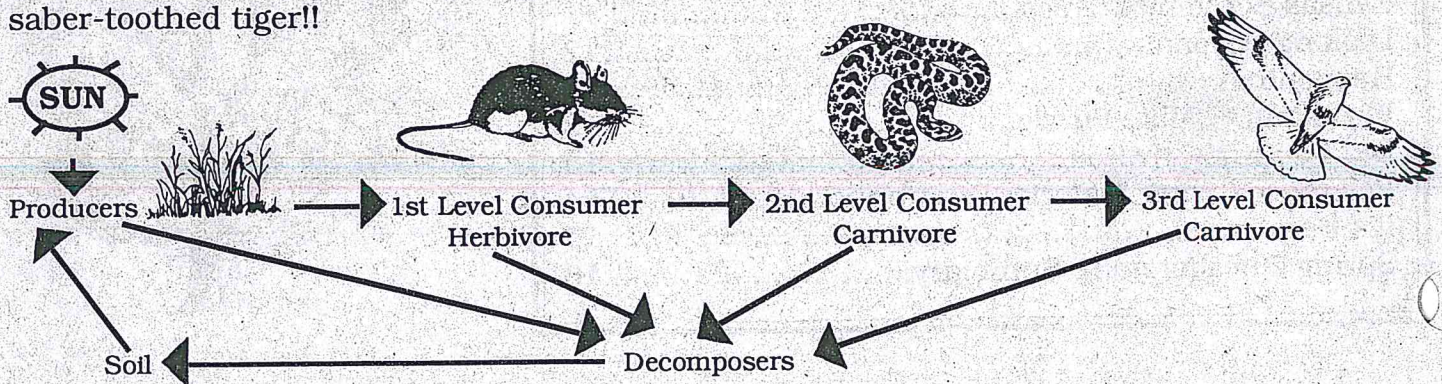
Decomposers are all around us. One group of decomposers is the scavengers which includes animals like vultures, snails, turtles and crayfish. Because they feed on already dead animals many people assume scavengers are dirty and carry diseases. This is not the case. As with all animals, they are uniquely adapted to their way of life. The featherless head of the vulture, for example, is well-suited for plunging deep into a carcass and saves the bird from having to clean bloody feathers. Vultures also spend many hours sunning themselves to help rid their bodies of parasites.

Scavengers feeding on fresh carrion differ little from predators feeding on a fresh kill. In fact, many "predators" will feed on carrion if it is handy. The bald eagle will scavenge for an easy meal -- they often feed on dead waterfowl and fish.

Most decomposers are tiny creatures and many cannot be seen with the naked eye. They include bacteria, fungi, and small arthropods like earthworms, millipedes, woodlice, termites, beetles and springtails. In many soils as many as 7 million earthworms may live in an area the size of a football field. These organisms feed mainly on plant remains. Surprisingly, most of the material available for decomposition comes from plants and not animals!! More than 90% of the leaves produced by deciduous trees (trees that lose their leaves) enter the food chain as dead material or detritus. During low periods of photosynthesis in the fall and winter, decomposition may be the major energetic mainstay of a forest community.

Decomposition does not occur overnight. It takes a long time to turn a tree into a nutrient rich layer of soil called humus. Sunlight, water, air and decomposers are the necessary components. As the fungi, bacteria, and wood-eating insects feed on the tree, they soften the wood and provide tunnels through which water and more fungi and bacteria can enter. Other animals contribute by building homes in the decaying tree or feeding on those animals using the tree. All of these actions help to break the tree down into the nutrients that can be used again by other green plants to continue the cycle of life.

Decomposition recycles nutrients -- from producers to consumers to decomposers and back to producers. Without it, life on earth could not continue. Think about it, some of the molecules in your body may once have been molecules in the body of a dinosaur or saber-toothed tiger!!



CLASSROOM COMPOSTING: A GREAT, ROTTEN IDEA **

About 30-42% of the garbage we throw out is organic and can be recycled by decomposers. Composting creates the optimal conditions for decomposition to occur. Try composting some organic waste material in the classroom. Here's how:

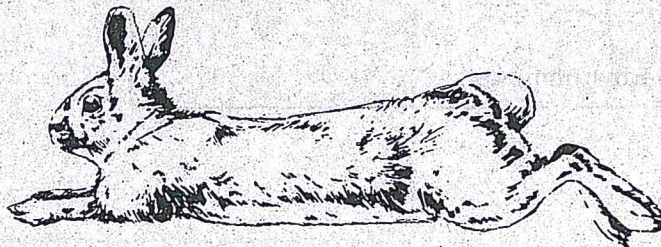
Materials:

1. Fish aquarium
2. Organic waste material (be sure to add a variety of materials, not all one kind, i.e. use sawdust, hair, wood, ash and leaves in addition to food scraps; avoid meat scraps, fats and oils, which inhibit decomposition and in outdoor compost piles can attract dogs, rats, raccoons and other animals)
3. Lawn fertilizer that contains nitrogen (but not herbicides or insecticides); manure and green grass clippings also contain large amounts of nitrogen
4. Soil
5. One to two dozen red earthworms (obtain from yard, garden, school grounds, or local bait shop)
6. Large kitchen spoon (for turning or aerating the pile)
7. Thermometer

Note: Air circulation is important to decomposition, thus the best compost bin is one made with wire or screen sides. Mass is also important, since approximately one cubic yard of compost is needed to generate good decomposition temperatures (104 - 170 degrees F.). Thus an aquarium with its small size and glass sides isn't the best compost container. Consider constructing an outdoor compost pile with wire sides.

Methods:

1. Chop the organic wastes into small pieces. You can leave some large pieces to compare rates of decomposition between large and small items.
2. Alternate layers of materials as follows: inch of soil, two inches of organic waste, sprinkle with fertilizer, sprinkle with water, repeat.
3. Cover with an inch of soil. Water the pile enough to make it moist but not soggy. It should feel like a damp sponge, moist but you can't squeeze water out of it.
4. Add the earthworms and observe their behavior.
5. Place your compost pile where it will be at room temperature (not in direct sun).
6. Place the thermometer in the middle of the pile. Wait an hour or so, then record the temperature.
7. Record the temperature from the same depth and location, and at the same time each day. Does the temperature change?? Make a graph to show your temperature results.
8. Gently mix the compost once a week to aerate it. A good time to turn the compost is after the temperature peaks and begins to drop. Record the temperature before you turn the pile.
9. Be patient. Check the moisture and add water if needed. It should probably take a month or two to turn your compost pile into humus.



Questions:

Which materials break down the fastest?? Slowest?? Why??
Are there any odors?? Why do you think decomposition has an odor??
Does the texture of the compost change?? In what ways??
How does composting reduce the amount of waste you throw out??
What happens to organic wastes that end up in the landfill??
Is the landfill a gigantic natural compost pile, or are there problems with placing large amounts of organic material in landfills??

Going Beyond:

Have students design experimental compost piles. Make one that is low in nitrogen, one that lacks moisture, another that has little air circulation and make one of a single ingredient, i.e. grass clippings. Also, create a good compost pile for comparison. Compare rates and temperature of decomposition between piles.

Fill flower pots with different soil types, including one type that has your humus mixed in. Plant seeds or grow seedlings in the pots. Make four to five pots with each soil type so you are not comparing one plant grown in each type. Do the plants in different soil types grow at different rates, with different vigor, colors, etc.?? (Be sure each pot receives the same amount of water and sunlight.)

**Adapted from the Wisconsin DNR Recycling Study Guide

RECYCLING Materials from the Reference Center

16mm Films

M-95 Life on a Dead Tree (Primary)

Filmstrips

FS-10 How Living Things Depend on Each Other (Grades K - 6)

FS-27 Energy and Nutrients in Ecology (Jr. - Sr. High)

Learning Kits

LK-34 Forests - OBIS

LK-45 Wildlife Community

LK-62 Natural History Leaflets (Primary - College)

Video Tapes

VT-36 Pond Life Food Web. (Jr. High - Adult)

Computer Disks

CD-4 Wildlife Series: Biomes and Food Webs (Jr. High - Adult)

Posters

PP-48 Wildlife in Different Environments



SPECIES SPOTLIGHT -- BOBCATS!!

Yes, we have bobcats in Kansas. Quite a few of them it seems. The bobcat is the only native feline left roaming the state of Kansas and its population has been growing steadily since the early 1970's. According to Lloyd Fox, furbearer program specialist for Kansas Wildlife & Parks, Kansas has tens of thousands of these furred hunters. Fox adds this is an estimate because it is impossible to get an exact count.

Named for their bobbed tail, this member of the cat family can be found virtually statewide. The greatest concentrations occur in the southeastern and central parts of Kansas. Bobcats even inhabit the more urban counties like Shawnee, Wyandotte and Johnson. Kansas is home to two subspecies, *Felis rufus rufus* in the east and *Felis rufus baileyi* in the west. Bobcats like to spread out. Males will develop a home range of approximately 40-50 square miles, while a female's home range will cover half that size, or 12-20 square miles.

Bobcats range from buff to reddish-orange in color. Black spots cover their white belly and their black ears have a white spot or band on the back. The short tail is tipped in black. Prominent black and white cheek tufts stand out. Bobcats are not long legged animals, they stand only 18-24 inches at the shoulder. Bobcats weigh around 20 pounds -- females can range from 14-20 pounds and males from 18-25 pounds. In the wild bobcats may live a maximum of 10-14 years. Those in captivity may live for more than 25 years.

As with most members of the cat family, bobcats possess keen senses. Their exceptional eyesight and hearing make these little cats expert hunters. Bobcats move silently on padded feet, stalking prey. In Kansas, the bobcat's favorite prey item is the cotton rat. Bobcats also pursue rabbits and will eat carrion if nothing else is available. Bobcats become most active when their prey animals are active.

Bobcats can breed anytime of the year, but in Kansas most breeding takes place from February through April. Bobcats generally have one litter. After a two month gestation the litter of two to three kittens is born. Kittens stay with the female until they reach 7-9 months old.

Although they occur statewide, bobcats tend to avoid people and are usually not seen. A fortunate few have observed bobcats in the wild, but to most of us they remain mysterious and elusive.

BOBCAT Materials from the Reference Center:

Learning Kits

LK-26 Replitracks

LK-50 Tracks and Tracking Game

Game Kits

GK-15 Yotta Know Mammals (Elem. - Adult)

Video Tapes

VT-25 Predators of North America (Int. - Sr. High)

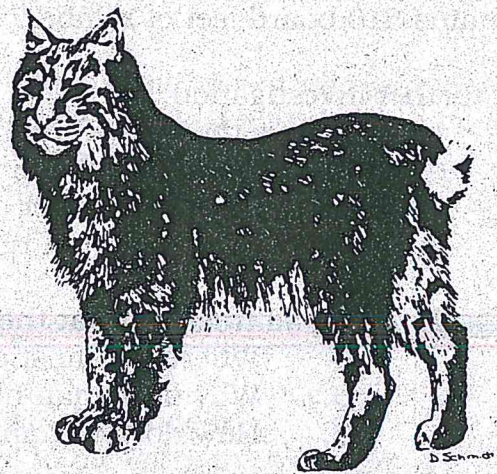
Books

4-1 Mammals in Kansas

4-2 Mammals

Posters

PP-55 Bobcat



HOW MUCH WOOD CAN A WOODCHUCK.....ESTIMATING BOARD FEET

Lumber obtained from trees is one of our most important renewable resources. We use lumber products in practically all aspects of our daily activities

By measuring a tree's diameter and height you can estimate the volume of lumber (board feet) for any standing tree. Use the following device to measure a tree's diameter:

Tree Diameter Tape: Obtain a piece of heavy paper or flexible cardboard at least one and one half inches in width and 45 inches in length. Starting at one end, mark off units 3.14 inches apart (approximately $3 \frac{3}{16}$ inches) numbering each unit consecutively as far as the tape will allow. This will give you readings in inches for the tree's diameter. (Since you can only measure the circumference of the tree, each 3.14 inch of circumference will equal one inch of diameter. You may wish to explain to students this underlying mathematical concept.)

Tree Height: To measure the height of the tree you can utilize a cardboard hypsometer (Figure 1, Page 7). Cut an 11 x 11 inch square from heavy cardboard. Starting one half inch from the bottom outside edge, mark off 10 units one inch apart. Secure the cardboard to a piece of scrap lumber. Attach a straw to the top edge of the piece of lumber. Attach a 12 inch, weighted piece of string to the piece of lumber directly in line with the zero on the bottom scale.

Hold the hypsometer close to your eye and sight through the straw where the main trunk branches or twists. Determine the number which the string crosses when this area of the tree is sighted. Now measure the horizontal distance from the tree to the spot at which the reading was taken. Multiply this distance by the number of the hypsometer scale and divide the product by 10. To this calculation add the height at which the hypsometer was held above the ground. The answer is the height of your tree from the ground to where it branches or twists.

Amount of Lumber: To determine the amount of usable lumber you must first determine the number of 16 foot saw logs the tree contains. Use the chart (Figure 2) on page 7. Divide the height reading from your tree by 16 to determine the number of saw logs your tree contains. Locate the number of 16 foot saw logs in your tree along the left column. The point where the column intersects the diameter column of the tree indicates the number of board feet of lumber in the tree. Example: a tree with $1 \frac{1}{2}$ logs with a 28 inch diameter contains 510 board feet of lumber.

For further investigation:

1. Obtain the cost of lumber from a local supplier and have the children compute the retail value of their trees.
 - A. Does all lumber cost the same?? Why not??
 - B. What different uses are there for different woods??
2. Do all trees grow at the same rate??
 - A. Where are most of our forests?? In Kansas??
 - B. Why does man have to plant thousands of trees each year??
 - C. How do you manage a forest??



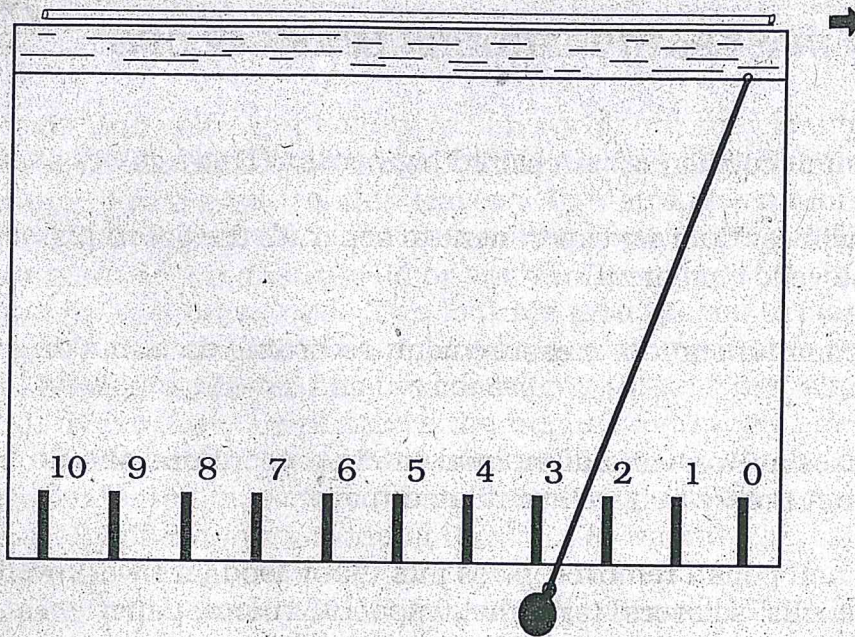


Figure 1

Figure 2

DIAMETER		10	11	12	13	14	16	18	20	22	24	26	28	30
NUMBER OF SAWLOGS	1	39	49	59	71	83	110	140	180	220	270	320	370	420
	1-1/2	51	64	78	96	112	150	200	250	300	370	440	510	590
	2	63	80	98	120	141	190	250	310	390	470	560	650	760
	2-1/2	72	92	112	138	164	220	290	370	460	560	660	780	900
	3	--	--	127	156	186	260	340	430	530	640	770	900	1050

LOOKING AT LEAF LENGTH

Do all leaves on a tree look exactly the same?? At first glance they may appear to be similar in shape and length. A closer look will reveal some differences. The length and shape of the leaves will vary remarkably -- even on the same tree!!

Procedure: Have each student gather ten leaves from the same tree at different locations. On graph paper or ordinary lined paper, place the base of the leaf (not the stem) on a bottom line and stretch the leaf out to its entire length. Place a dot on the paper where the tip of the leaf ends. Continue the same procedure across the paper with the nine remaining leaves. After you have finished connect all ten dots. (Chances are not a single dot will be at the same height as any other dot.)

Areas of Inquiry:

1. Why would the leaves on a tree differ??
2. Where might you find the largest leaves?? the smallest ones??
3. How many leaves do you think you would have to measure to come across two of the same length??

WHAT'S IN A LEAF?? HIDDEN LEAF COLORS



Concept: Green leaves often contain other colored pigments. (This activity shows yellow.)

Objective: The students will conduct an experiment to separate the green pigment in leaves from the yellow pigment.

Process Skills: Observation, communication, measurement, recording data, making inferences

Safety: This activity uses acetone and all normal safety precautions should be observed. Conduct it only in a well ventilated room.

Materials: Green leaves, nail polish remover, glass jars (baby food jars work well), coffee filter paper, pencils, scissors, tape, metal spoons, rulers, paper

Exploration:

Begin by having students, working in pairs or small groups, go out to collect various green leaves. Have students tear up the leaves into very small pieces and place in jars. The teacher should then add enough nail polish remover to cover the leaves. Smash the leaves into the liquid with a spoon and let the mixture stand five minutes.

Have the students measure and cut a strip of filter paper about 1 1/2 inches wide and long enough to touch the liquid in the bottom of the jar. Tape the filter paper strip to a pencil and lay the pencil across the top of the jar. Adjust so that the strip barely touches the liquid in the bottom of the jar.

Allow the liquid to go about halfway up the strip, then remove it and lay it on a clean piece of paper. When the strips have dried, allow students to look at yellow and green strips of color on the filter paper.

Ask students: What causes the green color?? (chlorophyll) Was the yellow color in the leaf all along?? Why couldn't you see it?? (The green color covered it.) What causes the colors to separate?? (Acetone)

Concept Invention:

The students should be led, through questioning, to the discovery that there are other pigments besides chlorophyll that are present though not always evident in leaves.

Taken With Permission From : Natural Science Activities, Science Network Model co-sponsored by Pittsburg State University, SE Kansas Education Service Center and Public Schools.

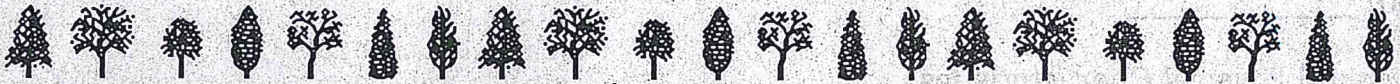
Looking Back.....Autumn Leaf Pigments, Fall 1990 On T.R.A.C.K.S.

PLASTER IMPRINTS OF LEAVES

Fall leaves add color and beauty to our world, but they last just a short time. You can capture the ornamental qualities of fall leaves with plaster imprints.

Procedure: From a tree, obtain leaves with a strong venation (the vascular veins that form the framework of the leaf which can be easily seen and felt). The form for your plaster imprint can be a margarine lid or any similar plastic lid. Mix a small amount of plaster with water in a paper cup. Two to three tablespoons of plaster to about one half inch of water in your cup should be right. Always add plaster to water to control the consistency. When the plaster has the consistency of a milk shake, place the plaster in the plastic lid. Make sure the plaster is thoroughly and evenly spread out. Place your leaf into the plaster with the veined side down (this is usually the dull side of the leaf). Gently tap the leaf into the surface of the plaster. This will remove water and air from under the leaf. By allowing a section of the stem to extend over the edge of the lid, you will be able to pull the leaf from the plaster after it dries.

The plaster will become dull in appearance when set. This is your signal to remove the leaf from the plaster. An imprint of the leaf should remain in the plaster. Handle the imprint with care until it becomes completely hard (in a day or two). After the plaster has hardened, you can paint the leaf imprint with fall colors -- yellow, orange and red. Water color paints work best, they do not cover the fine details of your imprint.



TREE INVESTIGATION

Exploration of a tree can take on added dimensions when children use more than one of their senses. Have the youngsters select a partner and pick a tree to observe. To begin the investigation have one member of the partnership describe the tree by using only the sense of sight. The other member records the adjectives or short statements being used to describe the tree onto the observation sheet (page 10).

The individual who was recording now closes his/her eyes and describes the tree using only the sense of touch. The other partner records the adjectives or short statements onto the record sheet. Complete the rest of the observation sheet. If the partners differ on an observation, record both onto the observation sheet.

Supplemental Activities/Expansion Ideas:

Bark texture shading -- you will need several plain, white sheets of paper, charcoal pencils, colored chalk or crayons. Have your partner hold the paper against the side of the tree while you rub the paper with either the charcoal, chalk or crayon.

Bark imprints -- flatten a piece of clay out to about the size of your hand and half of an inch in thickness. Place the clay slab against the tree bark and push hard. Carefully peel the clay off the tree. You should receive a reverse imprint of the bark.

Adopt-A-Tree -- have each class/grade adopt a tree on the school grounds or outdoor area and keep records on it during the school year. Keep track of height, circumference, condition, colors, etc., take photos, rubbings, make a leaf portfolio, or other activities.

TREE OBSERVATION SHEET

Adjectives/short statements describing the tree through sight only.

- | | | |
|-----------|----------|----------|
| 1. _____ | 2. _____ | 3. _____ |
| 4. _____ | 5. _____ | 6. _____ |
| 7. _____ | 8. _____ | 9. _____ |
| 10. _____ | | |

Adjectives/short statements describing the tree without sight.

- | | | |
|-----------|----------|----------|
| 1. _____ | 2. _____ | 3. _____ |
| 4. _____ | 5. _____ | 6. _____ |
| 7. _____ | 8. _____ | 9. _____ |
| 10. _____ | | |

General Physical Characteristics:

Color:

Same throughout tree?? yes no
If no, describe:

Size: Length--

(ground level to top)

Width--

(at the widest point)

Same throughout tree?? yes no
If no, describe:

Shape: Describe/draw the shape
of your tree:

Bark: Rough or Smooth??

Pattern - describe:

Odor?? yes no

Thick or Thin??

Do the cracks run up, down or sideways??

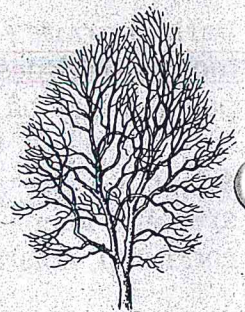
Is there a space between grooves?? yes no

Bark appears the same through-
out tree?? yes no

If no, describe:

Has your tree been injured?? yes no
If yes, describe:

Does your tree appear to be healthy?? yes no
If no, describe:



TREE Materials from the Reference Center:

16 MM Films

- M-67 More Than Trees (All Ages)
M-95 Life on a Dead Tree (Elem.)

Filmstrips

- FS-9B Exploring the Woodland (Grades 5 - 12)
FS-17D The Woods (Grades K - 4)
FS-20 The Seasons (Grades K - 4)

Slide Series

- SS-19 The Deciduous Forest - Tall Grass Prairie Ecotone (Int.- Sr. High)

Learning Kits

- LK-9 Neighborhood Woods - OBIS
LK-34 Forest - OBIS
LK-46 Succession
LK-63 Wonders of Learning Kit - Life in the Woods (Grades 3 - 6)
LK-66 Trees of Kansas Leaf Replicas (Grades 2 - 6)

Video Tapes

- VT-26 Plant-Animal Communities : Ecological Succession (Jr. - Sr. High)
VT-107 More than Trees (All Ages)

Books

- 13-2 Trees (Grade 5 - Adult)
13-3 Trees of North America (Jr. High - Adult)
13-8 Wild Edible Fruits and Berries (Int. - Adult)
14-18 Finder Guide to Trees (Int. - Adult)

Poster

- PP-61 Tree Identification Chart Series (All Ages)

Computer Disks

- CD-2 Woods and Wildlife (Jr. High - Adult)



KANSAS SCRAMBLED TREES

- | | | |
|-------------------|--------------------|----------------------|
| 1. ihewt koa | 2. gsrua plame | 3. eymsoare |
| 4. yekcbue | 5. nsape | 6. erd dacre |
| 7. waappw | 8. goaes reango | 9. ifgwrolen ogwoddo |
| 10. iceamnar umpl | 11. ockeh rycehr | 12. dlbxoere |
| 13. owtcodotno | 14. rtfangar msuac | 15. tanmuu lovie |

- | | | |
|----------------|----------------------|--------------------|
| 1. White Oak | 6. Red Cedar | 11. Choke Cherry |
| 2. Sugar Maple | 7. Paw Paw | 12. Boxelder |
| 3. Sycamore | 8. Osage Orange | 13. Cottonwood |
| 4. Buckeye | 9. Flowering Dogwood | 14. Fragrant Sumac |
| 5. Aspen | 10. American Plum | 15. Autumn Olive |

LOOKING BEYOND.....

TREES FOR LIFE

Trees play a very important role in our food chain. The greening of our planet is closely related to our long term food requirements.

Trees for Life (TFL) was organized to help people in developing countries to plant and take care of food-bearing trees. TFL acts as a catalyst for providing trees, management and know-how to voluntary organizations. Its initial work was started in India, Brazil, Guatemala and Nepal. Today more than 10 million trees have been planted. Plans call for the planting of 100 million fruit trees during this decade.

In the United States, TFL makes available a tree planting kit and educational materials for elementary students so that children can learn the role of trees in the ecological balance. More than 900,000 students in the United States have participated in this program.

For additional information or to learn how you can promote this important endeavor, write to:



Trees for Life, Inc.
1103 Jefferson
Wichita, KS 67203

PROJECT LEARNING TREE

The forest community provides an excellent opportunity to learn basic ecological principles, environmental ethics and a more responsive role regarding natural resources.

PROJECT LEARNING TREE is designed for educators to utilize the forest community as a means to assist young people in gaining knowledge and an awareness of their natural forest environment. The six hours of in-service, combined with the activity guides, which contain interdisciplinary instructional activities in all subject and skill areas, will enhance the knowledge, understanding and teaching abilities of any educator. Discover for yourself the over 175 activities which can improve your outdoor teaching skills. Become a part of the 200,000 educators and more than 10 million students who are utilizing PROJECT LEARNING TREE as a fun process for developing an environmental concern for interaction with the forest community.

For more information on the availability of PROJECT LEARNING TREE in your area, contact the PROJECT LEARNING TREE State Coordinator, John Strickler, State & Extension Forestry, 2610 Claflin Road, Manhattan, KS 66506, (913) 537-7050.

HAPPENINGS.....

National Hunting and Fishing Day. September 28th. Call your local Kansas Wildlife & Parks office for activities in your area.

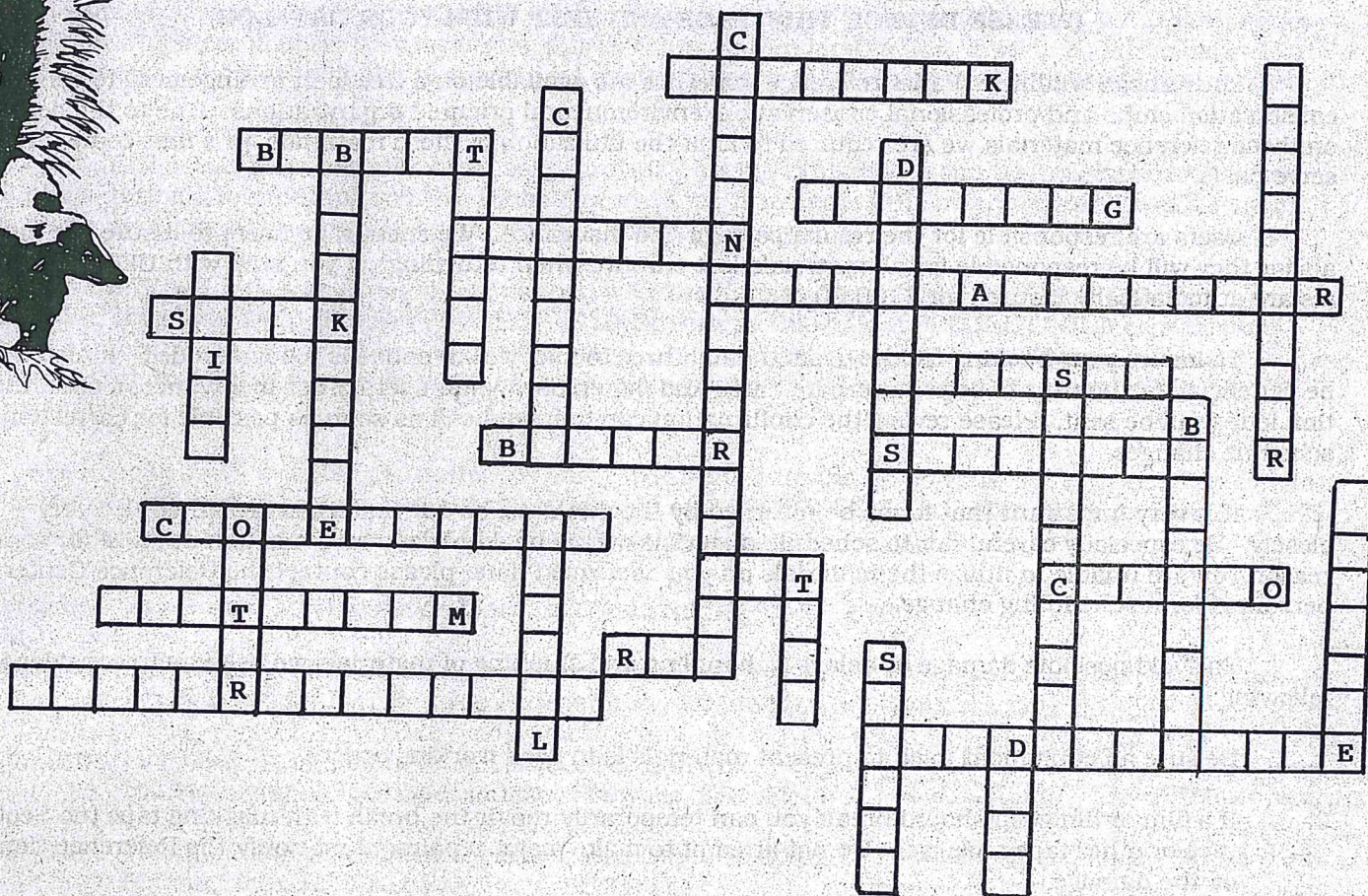
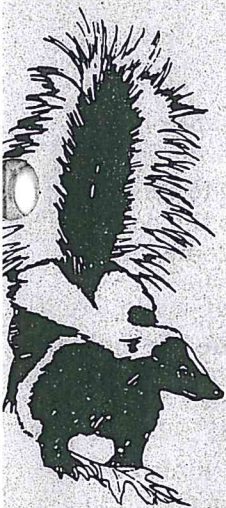
KACEE Environmental Education Workshop. Rock Springs Ranch. October 18th-21st. For more information, call John Strickler, State and Extension Forestry at (913) 537-7050.

Kansas Wildlife Federation's Hunting, Fishing and Furharvesting School. Rock Springs Ranch. October 26th and 27th. For more information call the Federation at (913) 266-6185.

Christmas Bird Count. Held in December. Call your local Audubon Club for information about counts in your area.

Kansas Winter Bird Feeder Survey. January 16-19, 1992. Call your local Kansas Wildlife & Parks office for details.

WOODLAND WILDLIFE PUZZLE



Bat
Beaver
Blackbird
Black snake
Bobcat
Chickadee
Cooper's Hawk
Cottontail Rabbit

Cuckoo
Deer
Deermouse
Earthworm
Opossum
Otter
Raccoon
Rat

Redeared Slider
Screech Owl
Skink
Skunk
Sowbug
Squirrel
Termite
Tiger Salamander

Toad
Tree Frog
Turkey
Weasel
Wood duck
Woodland Vole
Woodpecker

DID YOU KNOW??

It takes more than 500,000 trees to produce the newspapers Americans read in one Sunday.

Well positioned trees can shade buildings and reduce energy consumption by up to 50 percent.

A three and a half foot stack of newspapers sent to your local recycling station will save a 20 foot Southern Pine tree.

Reference Center Material Distribution

(PLEASE DETACH THIS PAGE AND KEEP WITH YOUR CATALOG)

The Kansas Wildlife & Parks reference materials are available on a free loan arrangement to schools, conservation clubs and professional conservation/environmental oriented organizations. Due to the demand on these reference materials we are required to limit the utilization of these materials on a first-come, first-serve basis.

Users are responsible for the return postage and insurance. We encourage users to insure the materials for they will be responsible for all materials lost enroute when returning. If you ship with UPS the materials are automatically insured for \$100.00.

To insure your booking for the desired date, three to four weeks notice is recommended. It also would be beneficial for the user to select alternate dates and materials. When users order in advance, a confirmation letter will be sent. Please review the confirmation carefully and call as soon as possible for corrections or schedule changes.

It is very important that items be returned by the due date, as our materials are scheduled very closely. Be especially careful not to schedule materials over school holidays and vacation days. If for some reason you are unable to utilize the materials on your confirmed date, please contact the Reference Center personnel for a scheduling change.

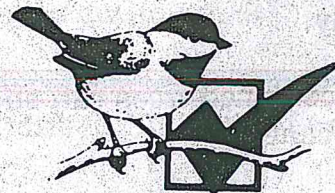
To avoid possible damage or delays in handling and shipping of materials we ask you to consider the following:

1. Be sure all equipment used to present materials is in good working order.
2. If a film or filmstrip should break you can temporarily repair the break with masking tape (no Scotch tape or other tapes, please). Do not attempt to make major repairs. Just notify the Reference Center of the damage.
3. Take a careful inventory of all the parts before returning games and learning kits. Notify the Reference Center of any missing or damaged parts.
4. Moisture and dirt are hard on many of the Reference Center's materials. Avoid these when using the materials.
5. Make sure the shipping containers are secured well before mailing them. The reverse side of the shipping label should be utilized when returning materials. Check to make sure you are sending the materials to the Wildlife & Parks Center and not to the company where purchased.

Please respect the copyrights of the producer and the policies of the Reference Center. The materials are not to be reproduced nor a fee charged for viewing or the utilization of the materials other than the purpose and audience so requested. We are pleased to be able to provide these educational materials for your use. We are confident that you will allow us to continue to provide this service by assuring that the materials are handled with care and returning them promptly in good condition.

The Reference Center address to order or return materials:

Kansas Dept. of Wildlife & Parks
Reference Center
RR2 Box 54A
Pratt, KS 67124
(316) 672-5911



PROJECT WILD IS HERE!!

We are excited to announce PROJECT WILD is now available in Kansas. PROJECT WILD is an education program which emphasizes an awareness, appreciation and understanding of wildlife. Participants learn the basic concepts about wildlife, its needs and its relationships, and importance to people and the environment.

PROJECT WILD demonstrates how easily outdoor learning experiences can be integrated into instructional plans during a fun and informative six hour workshop. It increases the awareness and confidence of its participants in utilizing the outdoors as an effective learning setting.

PROJECT WILD is sponsored in conjunction with the Kansas Department of Wildlife & Parks. Under the direction of Roland Stein, Kansas PROJECT WILD Director, a network of PROJECT WILD coordinators has been established in seven regions across the state. This network of regional coordinators will assist in the organization, planning and implementation of training sessions for facilitators/educators and other PROJECT WILD activities.

We hope you will be willing to assist PROJECT WILD in achieving its objectives and goals. Feel free to contact the coordinator(s) for your region or Roland Stein at (316) 672-5911, ext. 108; RR2 Box 54A, Pratt, KS 67124 for additional information regarding PROJECT WILD and its role in Kansas.

Region One Jay Burns, Ft. Hays State Univ., 600 Park St., Hays, KS 67601

Region Two Pat Silovsky, RR3 Box 304, Junction City, KS 66441
Laura Harmon, RR1 Box 55, Junction City, KS 66441

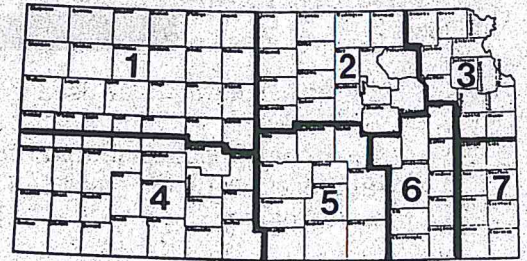
Region Three Mary Kay Crall, 9539 Alden, Lenexa, KS 66215
Bill McGowan, 17501 Midland Dr., Shawnee, KS 66217

Region Four Tommie Berger, 808 McArtor Rd., Dodge City, KS 67801
Roland Stein, RR2 Box 54A, Pratt, KS 67124

Region Five Kerry Wenzel, 322 N. Poplar, South Hutchinson, KS 67505
Rebecca Radford, 1512 Woodrow, Wichita, KS 67203

Region Six Kenny Whitehead, Box 37, Fall River, KS 67047

Region Seven Judy Pallett, RR1 Box 76, LaCygne, KS 66040
Cindy Ford, Pittsburg St. Univ., Biology Div., Pittsburg, KS 66762



Please send the following information to your regional coordinator(s) or Roland Stein.

I would be interested in becoming involved with PROJECT WILD by:

- attending a PROJECT WILD workshop
- becoming a facilitator for PROJECT WILD
- arranging for a PROJECT WILD workshop for interested groups
- providing information to promote PROJECT WILD to interested individuals and groups
- providing monetary assistance for PROJECT WILD activities and support materials

Name:

Address:

Phone Number:

SPRING QUESTIONNAIRE SUMMARY

Thanks to all who responded to the survey. Seventy-Five percent of those responding received their newsletter through the school mail, 3% by direct mailing. All elementary teachers and Junior and Senior High science coordinators should receive theirs in the school mail. Please let us know if you are not.

Out of the responses, 98% indicated they thought the publication was useful -- the other 2% didn't answer this question.

The features described as most useful were: informational articles, activity descriptions, species spotlight and reference center information.

Those features actually used: informational articles, puzzle and word games, species spotlight and activity descriptions.

Ninety-six found the newsletter easy to read and use.

Articles enjoyed the most were water activity descriptions, species spotlight, balancing act and all!!

Topics that respondents indicated they 'd like to see in the future include environmental issues, endangered species and Kansas birds.

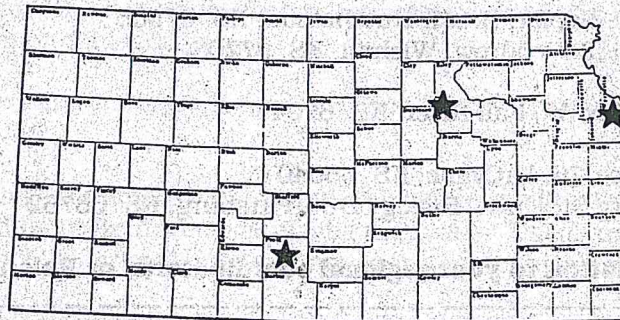
We appreciate the time you took to fill out the questionnaire. It will help us in the future. Thanks.

Winners of the drawing:

- 1st Germaine Taggart, Lincoln Elementary in Hays
- 2nd Paula Hill, Countryside Elementary in DeSoto
- 3rd K. McIntosh, Roosevelt Elementary in Hutchinson

Pat Silovsky, Museum Coordinator
RR3, Box 304, Junction City, KS 66441
(913) 238-5323

Roland Stein
Education Coordinator
RR2, Box 54A
Pratt, KS 67124
(316) 672-5911



Mary Kay Crall
Education Specialist
9539 Alden
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MARY KAY CRALL

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PAT SILOVSKY**



Equal opportunity to participate in and benefit from programs described herein is available to all individuals without regard to their race, color, national origin, sex, age, or handicap. Complaints of discrimination should be sent to Office of the Secretary, Kansas Department of Wildlife and Parks, 900 Jackson Street, Suite 502, Topeka, KS 66612.