

.....OUTDOOR

CLASSROOMS

Produced In Cooperation With:

Natural Resources Conservation Service
(formerly the Soil Conservation Service)
Kansas Conservation Districts
State Conservation Commission

1995

*"Tell me, I'll forget,
Show me, I may remember;
But involve me and
I'll understand."
..... Chinese Proverb*

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PREFACE

With the growing concern and interest in the environment, the time is right to develop an outdoor classroom. Educators are looking for effective environmental teaching methods to incorporate into their existing curriculum. Outdoor classrooms can be the answer by providing unlimited learning opportunities.

The purpose of this publication is to provide an easy to follow process for creating an outdoor classroom. Those developing this guide have had rewarding, first hand experiences working with school districts in the development of outdoor classrooms. Although the overall experience was very positive, it was found somewhat frustrating tracking down helpful information to use and pass along to the interested schools.

There are several excellent publications addressing the subject of outdoor classrooms, if you know where to look. Furthermore, most of them specialized in only a few aspects of outdoor classrooms. Therefore, we have combined and expanded desirable excerpts from multiple resources in the creation of this publication. A resource section has been provided for obtaining additional reading and resources when more information is desired.

As you refer to the table of contents, consider it as a general step-by-step process that would be followed from initial planning, to construction, to actual use of the outdoor classroom.

We hope you enjoy getting "down 'n dirty" as much as we do, as you venture into an outdoor classroom. Feel free to copy all or portions of this publication as needed.

Our committee would like to thank everyone who provided input and proofreading skills and especially to Mary Gale and Marsha Pohl for their special assistance.

With Best Wishes,

The Natural Resources Conservation Service (formerly the Soil Conservation Service) Area I Outdoor Classroom Committee

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NATURE'S CODE OF ETHICS

Our environment is an interdependent web of natural resources. These resources are soil, water, air, plants and animals. When we use any one of these resources there is a cause and effect relationship on one or more of the other resources. A balanced use of these resources and in some cases preservation, ensures these resources will be sustained for the future. The outdoor classroom is an excellent "environment" for teaching the respect and wise use of natural resources.

Following are a few items that should be taught so students can get the most from their outdoor classroom activities.

- * Respect the habitats of wildlife. You are a guest in their home when you explore the outdoors. Observe wildlife from a distance when possible so as not to alter their normal behavior.
- * Observe, examine, but don't take or destroy. Return study specimens back the way you found them.
- * Do not destroy or disfigure plants and animals unnecessarily or against environmental laws.
- * Do not litter. Pack it in, pack it out. Keep the outdoors clean. If you find litter, put it into receptacles.
- * Hike only on designated trails to reduce potential destruction of surrounding areas.
- * Follow the laws that protect and conserve our natural resources for future generations.
- * Do take pictures as memories of a day.



SO YOU WANT TO START AN OUTDOOR CLASSROOM

"Why Outside?"

"Imagine eight-year old students in a typical school classroom. You are trying to teach them the importance of conserving nature and impress them with the beauty of the world around us. You are trying to instill a respect and appreciation of the earth which will last through their adult years, so that each generation understands its responsibility. Where would you prefer to do this? Would you rather be in the typical classroom using textbooks or in a natural setting outdoors? Conventional classes have their place, but when it comes to teaching about the environment there is no better place than outside. Out where you can smell, hear and touch the world."

(Reprinted from the Oklahoma County Conservation District newsletter.)

INTRODUCTION

Acquainting children with the natural history of their local plants and animals is a significant part of sound environmental education. Often children learn about environmental problems of distant places or learn concepts only through analogy in classroom situations.



Yet, outside the walls of every Kansas classroom exists a flourishing world of animals and plants going about their daily business, eating and being eaten, producing offspring or helping to produce another's offspring, flaunting bright colors or hiding in shady corners. Where? The zoo? The local nature center? The nearby state park or other protected areas? Closer yet. Without leaving the school grounds, you can find many examples of ecological interactions among animals and plants than can be seen on television nature shows.

Most schoolyard animals and plants occur and interact naturally. They do not depend on a zookeeper or gardener to nourish and protect them. Even planted trees, shrubs and flowers attract the attention of a schoolyard's naturally occurring animals. Schoolyard organisms are accessible to you every day, on short notice, for a few minutes or an entire afternoon.

Better yet, you and your students can investigate them at any level, from "let's just see what we have in our schoolyard," to sophisticated studies in science and mathematics. Most of these plants and animals are hardy enough to survive your investigations. Many educators want to acquaint their students with their own natural environment, but do not know how. Through the use of a permanent outdoor classroom, students can learn about their natural resources and their importance.

Outdoor Classrooms -- What Are They?

Outdoor classrooms can be defined by describing what they are not. They are not: just undisturbed natural areas, just trails with carefully labeled points of interest, or just a place where resource speakers come to teach conservation lessons. Outdoor classrooms may contain almost all of the above, but that is not all they should be.

Outdoor classrooms are unique as an extension of the indoor classroom. Outdoors, the books become alive and students experience highly motivated learning experiences through the use of their senses of feeling, tasting, touching, smelling, seeing and hearing.

As students use their outdoor classroom they begin to see patterns and relationships between books, themselves, and their environment, and thus they have a greater desire to learn.



It does not matter whether the outdoor classroom is 40 acres of rambling meadow, forest, stream; a gravel infested grass lot; or a few square feet of soil beyond the black top under the fire escape. Students can acquire the same basic understandings of soil-water-air-plant-animal relationships and the need for intelligent management of all our natural resources.

Outdoor Classrooms -- Why Have Them?

An outdoor classroom is not another subject to be added to the curriculum. It is a tool that integrates many subject areas as students explore, discover, and investigate their environment. Outdoor classrooms offer unlimited opportunities for teachers to solve teaching problems that may arise when instruction is only provided from books.

Many teachers feel a heavy responsibility for teaching content subject matter. They know there is validity in the old saying that "a picture is worth a thousand words." Outdoor classrooms provide the opportunity for the picture, plus the words, plus "hands on" reinforcement experiences to enhance the learning. Therefore, it becomes a part of the learner for many years.

The outdoor classroom expands the learning environment. It is readily accessible to students and teachers. Its use requires no special permit, no time-consuming arrangements for transportation, lunches, comfort facilities and no shifting of class schedules. More important, it is immediately available for continuous studies, an unexpected observation, supervised individual study projects, and for capitalizing on the "teachable moment." Students learn how their decisions and behavior affect their environment. As they acquire knowledge and understanding from and about the environment, they also develop knowledge to evaluate alternatives for using and managing resources.

Outdoor classrooms reinforce basic skill subjects and provide opportunities to develop an attitude of caring for and protecting the environment while using it in intelligent ways to meet human needs.

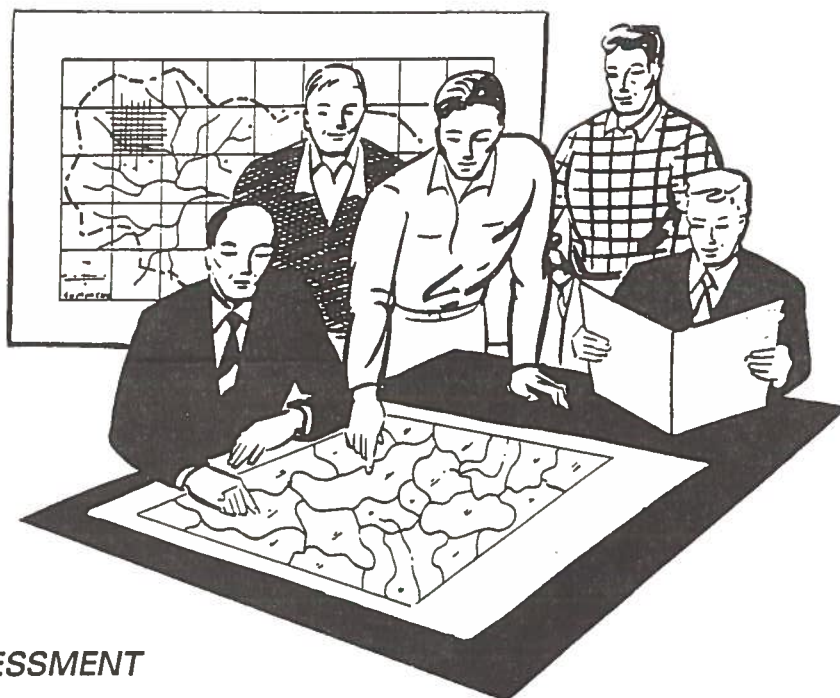
HOW TO BEGIN

Our target audience is the people who work with students: elementary, middle or high school teachers, environmental educators, college teachers, and persons engaged in informal outdoor education.

The decision to develop an outdoor classroom usually comes long after school buildings and facilities are in place. Thus, each classroom is an individualized project. It must be planned according to the size and shape of the available area and its topography, the climate, geologic features, geographic location, and special resource problems of that site.

A prerequisite for development of any outdoor classroom, is at least one enthusiastic teacher. Many outdoor classrooms have been attempted by one or two people who take it on as a personal project without the assistance of fellow teachers, administrators or others. The most successful classrooms observed are those guided by a standing committee composed of teachers, administrators, building and grounds personnel, community members, students, PTA members and any others showing an interest.





SITE ASSESSMENT

Excellent learning activities can be designed around many natural and constructed parts of the school grounds. Invite the local conservation district and Soil Conservation Service personnel, educators, administrators and students to assist with an inventory of the school property. A site inventory checklist is included with this publication. Use it to help assess resources during the inventory process.

Of course this checklist is only the beginning step when you take inventory of the school property. This list will be expanded upon with more items and detailed notes of the diversity that you have discovered within the potential outdoor classroom. The results of this checklist and inventory should be presented to the site planning committee for discussion and appraisal.

Just as you would not construct a building without specific plans based on solid objectives, an outdoor classroom should not be developed without forethought of how it will be used. Before the first nail is driven or the first tree planted, considerable thought must be given to how activities in the proposed outdoor classroom will fit into the existing curriculum. How will the outdoor classroom help students improve their proficiencies in all subject areas? Have teachers in all subject areas been consulted as to how they will make use of the outdoor classroom and what features would be useful for them to include in the plan? Have teachers received any in-service training in conservation education so they can become familiar with methods of using the outdoors in their teaching? Unfortunately, outdoor classrooms have often been developed with only the science subjects in mind; this is like allowing students to use a dictionary only in English class. Outdoor learning experiences are inter-disciplinary.

OUTDOOR CLASSROOM STEERING COMMITTEE AND DEVELOPMENT

Qualities that good committee members possess are: ambition, creativity, willingness to work, commitment to conservation and education. A broad base of support and expertise is critical to success. Committees should have representation of teachers from each grade level, principal, building and grounds personnel, students, parents and natural resource specialists.

The steering committee will be responsible for the planning, development and proper usage of the outdoor classroom facility. To make this committee work efficiently, subcommittees should be organized. Three subcommittees are recommended as a minimum.

Site Development And Maintenance Subcommittee

will be responsible for overseeing the development of the facility. This begins with gathering information on features (physical, cultural, historical, etc.) already existing around the school that might be used in the outdoor classroom. Using school grounds' blueprints (if available) or by taking measurements, a map of the school grounds should be made and a plan for the outdoor classroom drawn up. Assignments for special tasks would be made by this committee and assistance by local resource specialists.

Curriculum And Library Subcommittee

will be responsible to establish an environmental education resource library that may include curriculum material, text references, and field guides for teacher and student use. The subcommittee will also work with the school administration to schedule conservation education in-service training for teachers.

Funding And Public Relations Subcommittee

will be responsible for developing a budget for the outdoor classroom and gathering funds to meet the budget (see Funding Sources for Outdoor Classrooms). The committee would also be instrumental in providing information about the outdoor classroom activities to local organizations, newspapers, radio and TV stations.

Subcommittees will vary from time to time; but when the need arises, each should be ready to meet the challenge.

HUMAN RESOURCES FOR OUTDOOR CLASSROOMS - WHO WILL HELP?

It has been found that help will come from the classrooms and local civic groups. Are bird houses or wooden benches needed? Consider the wood working shop class. They are always looking for practical projects to teach students how to build and work with wood. The art or drafting class would be a natural for creating signs. Need some heavy equipment to get started? Local contractors may donate their time and equipment use. You develop a need, people will be there to help.

FUNDING SOURCES FOR OUTDOOR CLASSROOMS

As previously mentioned, a subcommittee should oversee the funding of the outdoor classroom. Be creative and confident. In most cases gathering funds will not require grantwriting skills, it will just require the ability to ask.

First, you will need a list of items required for each outdoor classroom feature/project. Use the Feature/Project Worksheet (Exhibit 3) included in this publication to assist in making that list. If you are not able to obtain those items through informal requests, then develop a formal proposal. This proposal should include a budget for the remaining items and a project installation schedule.

Once this has been developed you are ready to begin a fund drive. As you conduct this fund drive, tell prospective donors exactly what you want, how much it costs and how you will use it to benefit the students. You may be more successful if you ask for portions of the funds instead of asking for everything from one source. A request for materials such as plants, gravel, lumber, or services, such as printing or sign making, are often easier for a company to donate than money.

A List Of Possible Funding Sources And Activities

Funding Sources

School PTA/PTO	Local Service Clubs and Organizations
Individual School Budget	School Corporation Board
Conservation Districts	County Farm Bureau Group
Endowment Program	Environmental Organizations
Local Foundations	Local, State or Federal Grants
Corporations	Local Businesses
Kansas Department of Wildlife and Parks OWLS Program	

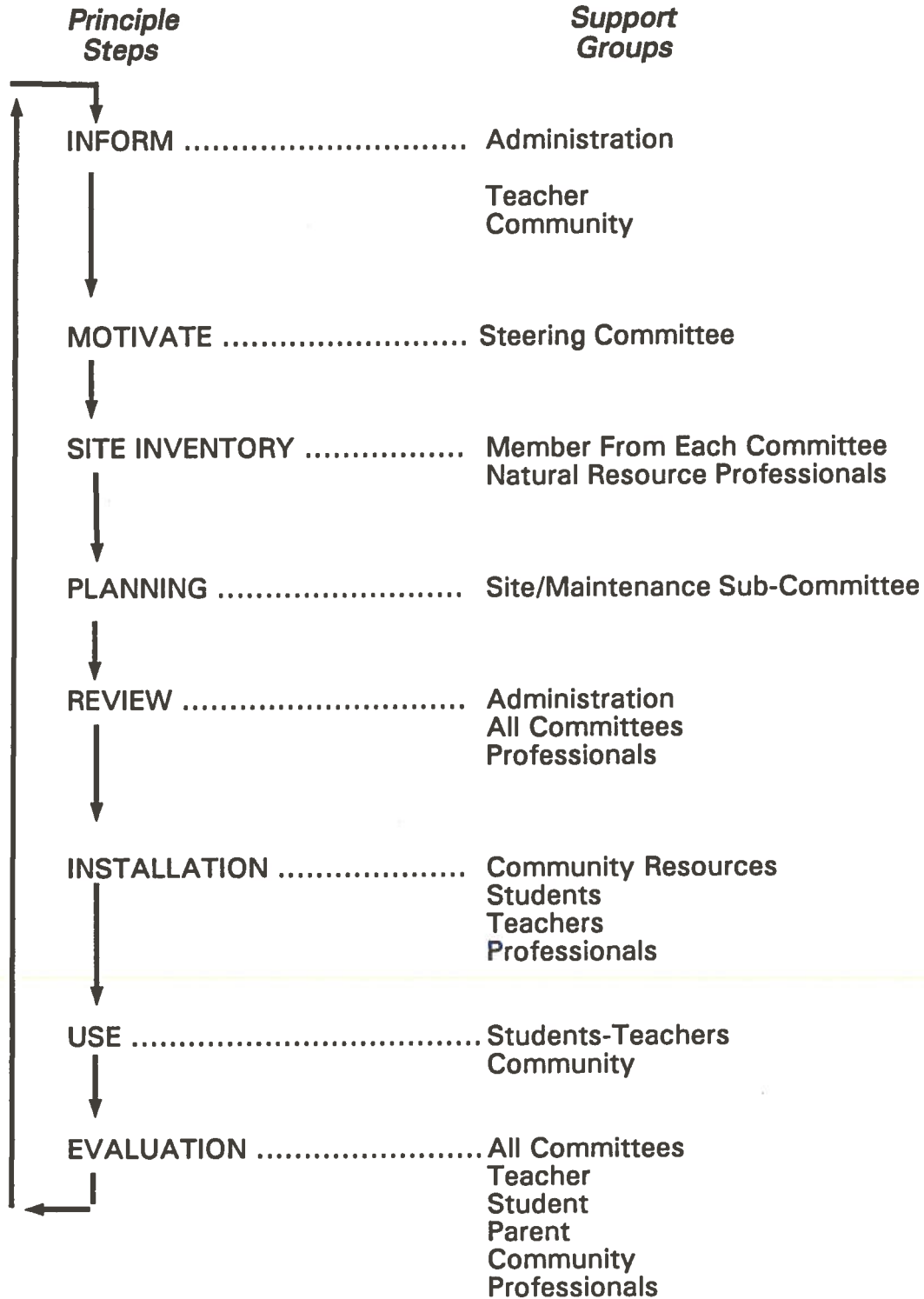
Activities

Collect Recyclable Products	Fish Fry	Bake Sales
Seedlings and Plant Sales	Raffles	Concessions Stand

When a group gives you funds, give them some publicity whether it be a sign in the classroom, newspaper article, personal letter, or just by word of mouth. They will appreciate and remember it the next time you ask for something.

OUTDOOR CLASSROOM FLOW CHART

Use this flow chart for the general development of your outdoor classroom and later as a guide for planning individual projects.



OUTDOOR CLASSROOM FEATURES/PROJECT IDEAS

Just as outdoor classroom sites will vary in size and character as each is tailored to the school grounds or area, features should be developed according to the available landscape and desires of the outdoor classroom committee. Each feature should be designed to achieve specific learning objectives and encompass many discipline uses. Consultation with local natural resource personnel or construction specialists will be necessary in planning and constructing certain features. The following are examples of possible features that may be incorporated into an outdoor classroom. Also included are sample activities associated with a specific feature, but remember with a little imagination and creativity, every feature has unlimited learning opportunities.

Remember, "Rome wasn't built in a day" and neither is an outdoor classroom. Resist the temptation to hurriedly build an outdoor classroom. Planning should be long-range and open-ended. Begin with the desired main features and add additional ones later. Proper planning and construction of features and projects are time consuming, but the end result is well worth the extra effort. Nature will continually make changes in your outdoor classroom and as time goes on, your committee may choose to make some changes by adding or deleting certain features. **TAKE A PHOTOGRAPHIC RECORD OF YOUR OUTDOOR CLASSROOM STARTING WITH PHOTOS OF THE SITE BEFORE ANY WORK BEGINS.**

Summary of Features/Project Ideas:

Agricultural Crops	Animal Tracking Plot
Aboretum or Specimen Tree Planting	Archaeological Dig Site
Butterfly/Hummingbird Garden	Compost Pile
Elevated Walkway	Feeding Stations
Erosion Control Demonstration Area	Farm/Domesticated Animals
Fence Row	Fencing
Flower Beds	Geology Rock Wall or Rock Pile
Grass Plots	Groundwater Monitoring Hole
Herbaceous Wildlife Planting	Herb Garden
Historical Areas	Insect Traps
Horticulture Demonstration and Test Plots	Island
Litter Barrels	Native Prairie Areas
Natural Succession Areas	Nesting Structures
Observation Blind	Observation Platform
Orientation Course	Outdoor Seating Area
Pioneer Garden	Rock Garden
Shelter House	Snow Fence Demonstration
Soil Profile Area	Soil Studies
Storage Building	Stream or Creek
Sundial	Time Capsule
Trails	Tree Plantation
Water Resources	Weather Station
Wildlife Brushpiles	Wildlife Food Plots
Windbreaks	Woodland Management

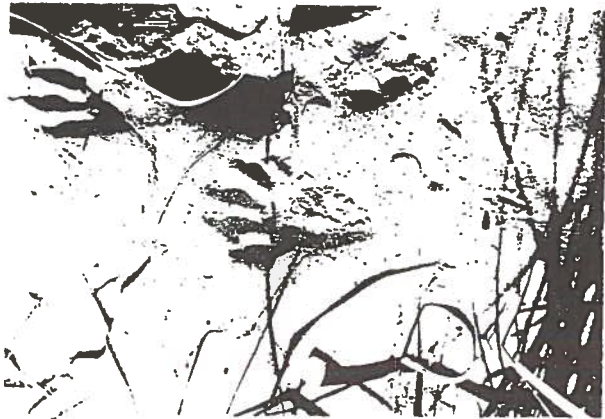
FEATURES/PROJECT IDEA DESCRIPTIONS

Agricultural Crops -

Corn, milo, wheat and soybeans can be grown in small fields or plots. Use as many conservation practices on the land as possible, such as residue management, crop rotations, terraces and contour farming. A local farmer might be able to provide you with seed. Harvest your small crop and then add it to the farmer's harvest. Students will learn first hand how their food is grown and the importance of conservation practices.

Animal Tracking Plot -

Whether your school is located in a rural or urban area, an animal tracking plot can yield some interesting tracks to study. Mudflats and sandbars are good places for studying animal tracks or clear an area 3 x 3 feet of all vegetation and fill with clay. Food scraps, grain or other "bait" should then be placed near the plot regularly to attract wildlife to the area. Wet the plot if necessary, smooth it over, and come back the next day to see what has been there. Tracks can be preserved and collected by making plaster casts of them. Permanent tracks for comparison and identification can be made by pressing either rubber or plastic casts of various tracks into clay or cement.



Arboretum or Specimen Tree Plantings -



Have students plant a variety of tree and shrub species that include those native to Kansas and that are adapted to the soils and climate of the area. Planting projects begin with an understanding of the soil, root structure and proper care of the seedlings as they grow. In addition to lessons on tree identification, students will gain an appreciation of trees for all the benefits they provide to people, wildlife and the environment.

Archaeological Dig Site -

This area can be developed in a plot of bare soil where students can learn the techniques used in archaeological digs, while unearthing "planted" artifacts. Such an activity can also be tied into historical studies and soils investigations.

Butterfly/Hummingbird Garden -

Certain wildflowers, cultivated flowers, trees, shrubs and vines are nectar sources or serve as host plants for butterflies to lay their eggs. Plantings such as salvia, butterfly weed, phlox, petunia, honeysuckle, clematis, and trumpet vine will attract butterflies, moths and hummingbirds. Students will be able to observe and collect many species of butterflies and moths.



Compost Pile -

A compost pile can be set up on almost any site. Leaves, grass clippings, kitchen scraps (except meat, fats and oils) and other organic debris can be turned into a nutrient-rich, soil-like product in a relatively short time. Since some communities have or are considering banning yard wastes from landfills, composting is an excellent way to handle large amounts of waste. Use your finished compost as an organic fertilizer or as a mulch for gardens, shrubs, or trees. Commercial compost bins can be purchased for a modest cost or a compost area can be constructed for even less.

Elevated Walkway -

A board walk supported by driven poles can be used to carry observers over a pond, wet area or the water's edge. This permits easy access for collecting water samples and allows visitors the opportunity to explore the aquatic world without damaging the area.

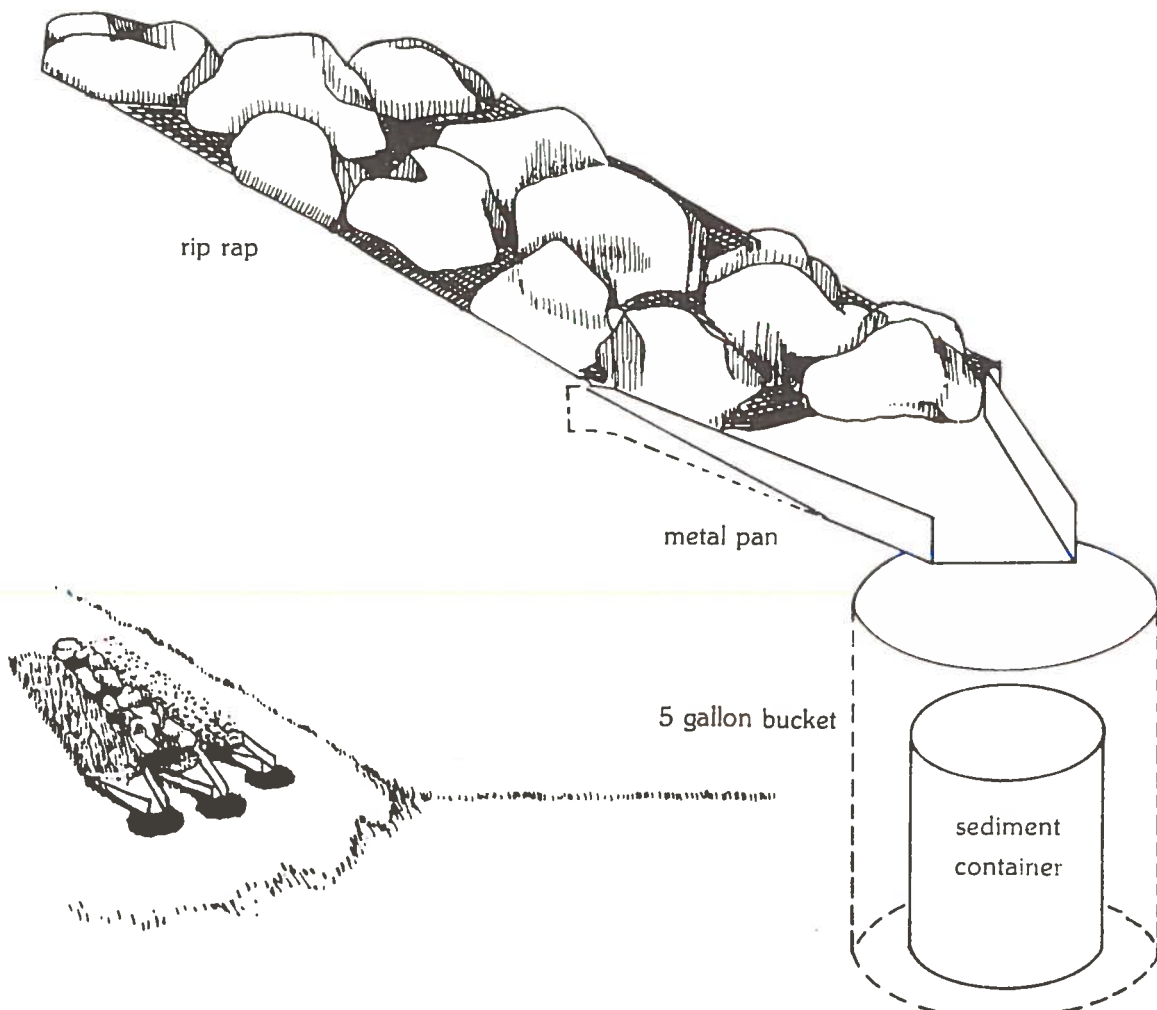
Erosion Control Demonstration Area -

To demonstrate the effects of erosion and some measures used to control it, first select a site on your school grounds with a moderate slope. This can be an area as small as about 10 feet wide and should be no wider than about 30 feet. If a suitable slope does not exist, one can be created by mounding and compacting soil in a hill about 3 to 4 feet high.

Next, strip all grass and other vegetation from the area, leaving only bare soil exposed. Divide the area into three equal parts and separate the plots by boards. Leave one plot alone, cover another section with rip rap (large stone) and plant a ground cover such as crownvetch in the final section. Now students can study the effects of erosion on the bare soil, while seeing how effective the control measures are on halting or minimizing erosion.

A collection pan can be installed at the base of each section to funnel runoff water and sediment into a container to quantify how much erosion is taking place in each section. The amount of sediment collected in each container can then be measured.

If more space is available, additional plots could include grass, row crop and one with a mulch cover using straw or wood chips.

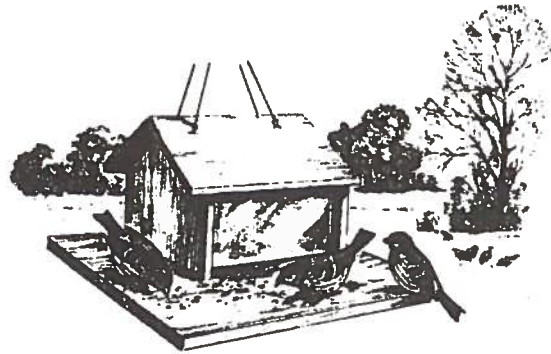


Farm/Domesticated Animals -

A calf, sheep, pig or duck can be used effectively to provide unique learning experiences for students. Your school can keep a ewe that bears a lamb each spring. Later the ewe can be sheared by an experienced farmer. The wool can be carded and actually spun into thread on a spinning wheel. Other domesticated animals such as birds and rabbits can provide interesting comparison studies with their "wild" relatives. Students can help feed and care for the animals. Adequate supervision and humane treatment are required.

Feeding Stations -

Attracting birds, squirrels and other wildlife to the school grounds is easily accomplished by establishing feeding stations around the school. Even school yards with severely limited space have areas where feeding stations can be integrated. Feeding stations will bring wildlife into view where they can be identified, observed, counted, and recorded.



Since different animals and birds have different feeding habits and food preferences, it is best to set up several kinds of feeding stations. A wide variety of feeders are commercially available, although there are several types that could easily be built for a great class project.

It is important that once you establish feeders on your school site they are kept supplied with food (that includes over winter break), because birds, particularly, will become dependent upon that food source.

Fence Row -

An old, woody fence row contains many environmental lessons. Often a fence row is an undisturbed area. In other words, it is unlikely that a plow or dozer blade has ever turned its soil. This makes an old fence row a valuable soil study area. Students can also study the types of vegetation and animals they find in the fence row. A fence row is a good wildlife "travel lane" and is an excellent location to place nesting boxes, food plots, brushpiles and shrub plantings.

Fencing -

A fence consisting of sections of various types can be used for history and art. Sections of post rock, stone fence, split rail, barbed wire, and jack leg fences add interest to the area.

Flower Beds -

Flowers add beauty, fragrance, and color to the landscape. Students can gain practical landscaping experience by planning, planting and caring for their flower bed. Planting of bulbs, corms, and tubers will result in many years of colorful spring flowers. Wildflowers and other ornamental flowers will attract many species of insects and birds for study by the student.



Geology Rock Wall or Rock Pile -

Various rocks and minerals may be cemented to the top of a low stone wall. An alternative to making a stone wall is to simply start a rock pile using large rocks that are too heavy to be thrown. The rock pile will provide habitat for snakes, lizards, toads, and insects. It will also provide suitable conditions for moss and lichens to grow for observation study. Students can bring a sample rock from the different areas they visit or from their home. After a few years, a great variety of rocks will be accumulated for study.

Grass Plots -

Establishing grass plots using several different varieties of native, tame and/or turf grasses allow students to learn what the different grasses look like. Railroad ties can be used to separate the different species of grass.

Groundwater Monitoring Hole -

This will provide students with an opportunity to see how the groundwater table fluctuates throughout the year. If recorded on a regular basis, a graph can be charted to show the monthly and seasonal levels of fluctuation. If your school site has more than one soil type, your students will be able to compare their findings for each soil.

To make a groundwater monitoring hole, a hole is dug 5 to 6 feet deep into the ground using a post hole digger or an auger. A length of PVC pipe is then cut about 1 foot longer than the hole is deep. Drill numerous one-eighth inch holes up and down the length of the PVC pipe. Place the pipe in the hole and fill soil around the pipe until the soil is heaped around the pipe. A calibrated stick is now used to monitor the rise and fall of the groundwater level. Place a PVC cap over the top of the pipe when not in use.

Herbaceous Wildlife Planting -

Herbaceous covers of legumes such as sweet clover, red clover, alfalfa, and grasses such as orchardgrass, timothy and bluegrass are one of the best ways of attracting small wildlife to your school site. There are many good educational reasons for planting herbaceous cover. Students will see and study more wildlife that feed and nest in the strips. Bees, butterflies, beetles and other kinds of insects will be found. Students will learn to identify and recognize characteristics of various grass and legume cover crops.

The herbaceous plantings can be planted in strips 15 to 20 feet wide in a fallow area of the school grounds. The strips can be spaced to alternate and allow strips of natural vegetation to grow in between.

Herb Garden -

A small area of the school grounds can be designated as an herb garden. This area can be located within a school courtyard, along a sidewalk next to the school building, or just about anywhere there is a little space and sunlight. Herbs used for cooking and those with alleged medicinal qualities can be grown for study.

Historical Areas -

Old stone fences, Indian mounds, or any other remnant of bygone days should be preserved. Bringing in old farm equipment, replicating pioneer buildings or erecting Indian council pits, totem poles, wigwams or other memorabilia will serve the purpose.

Horticulture Demonstration and Test Plots -

Measure a grid of small 10 x 10 feet plots. These plots can be used for various agricultural crop demonstrations, ground covers and/or grasses. The plots can also be used for chemical testing, water testing, erosion studies, etc.

Insect Traps -

Insect traps can be used to collect insects so students may study and learn more about these interesting creatures. Depending upon the types of insects to be collected, traps can range from a mashed banana placed in a jar to a commercially purchased insect trap containing a sex pheromone to attract a specific insect from great distances. In addition to learning about the body structure and habits of the insects collected, students can also develop math skills by estimating local populations of a given insect.

Island -

If you are planning to construct a pond or wetland, you might want to consider including an island in it. Plant succession can go undisturbed on the island and birds and other small animals can use it under natural, easily observed, conditions.

Litter Barrels -

Every outdoor classroom should have a place to properly dispose litter. Art classes can decorate metal barrels or have a contest where students could enter their design ideas.

Native Prairie Area -

Prairie grasses and forbs were the dominant vegetation in Kansas before the plow. A prairie area can be established by planting a seed mixture of native grasses, forbs, and wildflowers in a properly prepared firm seedbed. The choice to drill or hand seed will depend upon the size of the area. Native grass seed drills will accurately meter and place the seed at specific depths. For small areas, hand broadcast the seed mixed with fine sand and cover seed by lightly raking. Native grass seed and wildflowers should be planted only about 1/4 to 1/2 inch deep.

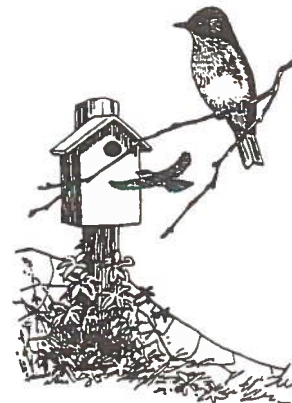
Prescribed burning is an important management practice for native grasslands. Properly timed burns can increase desirable warm season grasses and forbs by controlling weeds and brush. Native grasses are slower to develop topgrowth since they put down more roots first so allow two years for stand establishment.

Natural Succession Area -

Leave an area to develop naturally. By not mowing selected areas of your school site, a greater diversity of plants and plant maturity will occur. This process of gradual replacement of one community of plants and animals by another is referred to as succession. Students can observe and record the various successional stages that occur. Photographs can be periodically taken to show the gradual changes taking place over the years.

Nesting Structures -

Artificial nesting structures for songbirds, ducks, geese, squirrels, bats, and small mammals can be built by students or purchased commercially. Properly placed structures in various locations will attract more wildlife, and allow students to observe and study nesting characteristics of small animals.



Observation Blind -

A blind built near a pond, in the woods or adjacent to other wildlife habitat allows students to observe or take pictures of animals. It can be constructed simply by using utility poles for a three-sided structure or a more elaborate enclosed blind made with two by fours.

Observation Platform -

To get an overhead view of nature, construct an observation platform or viewing tower. If possible place it at a point of high elevation and remember to design it with safety in mind.

Orienteering Course -

Create a permanent orienteering course to develop map reading skills, compass usage and mathematical skills. Pre-set distances, points and departures offer challenges to students and many teaching opportunities for the teacher.

Outdoor Seating Area -

A shady, quiet gathering place is appropriate for teaching many outdoor classes. It can be as elaborate as a small amphitheater or as simple as a circle of old telephone poles. If the spot can be located near woods, shrubs, ponds, or streams, it may also be used for listening and observation areas.

Pioneer Garden -

In this garden, plants that were used in early America can be cultivated. These include Indian corn, gourds, herbs, and squash.

Rock Garden -

The building of a rock garden by using native rocks, native flowers, and native plants can be an unusual learning experience. The rock garden also makes an attractive spot along a stream where it could help prevent streambank erosion and display different rocks and minerals for student observation and study.

Shelter House -

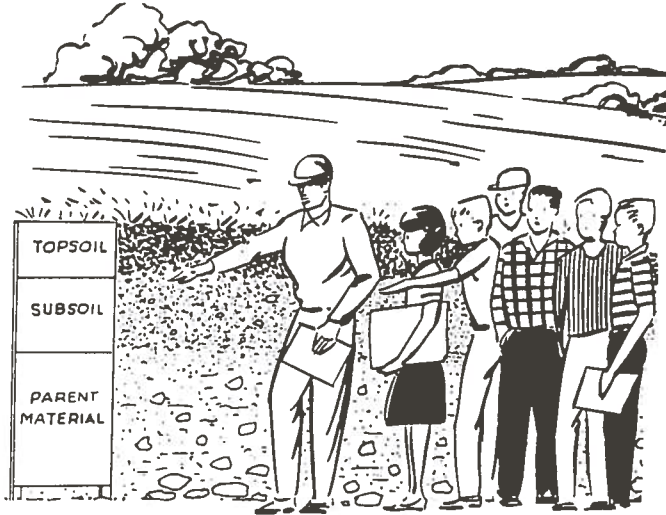
Aside from providing shelter from inclement weather, a building also provides a place for displays and other educational materials. Schools have made use of many different types of structures including log cabins, open picnic shelters, old barns, and greenhouses.

Snow Fence Demonstration -

Outdoor classrooms should be used year around. One winter feature that will get the students out after a snow is having a snow fence erected on the school grounds. Students can observe the effects that the fence had on drifting and measure snow depth at various distances from the fence. If space is available, plant a living snowfence consisting of trees and shrubs. If they are properly designed and maintained they trap more snow than slatted fences while providing wildlife habitat.

Soil Profile Area -

A profile of the different layers of soil can be demonstrated by using a pit or a cross section of a cutbank or a streambank. Also soil monoliths or core samples can help expand understanding of different soils. Soil samples may be collected from different areas and used inside the classroom.



Soil Studies -

Students should become familiar with your county soil survey obtained free from your local Soil Conservation Service office. Using the information in the survey, determine the location and various characteristics of the soils found on your school grounds. A soil testing area on each of the soil types should be established. Students should carefully examine the soil, layer by layer, starting at the surface and observing the types of vegetation growing there.

Storage Building -

While a storage building is not necessary for all outdoor classrooms, it can certainly save time if the outdoor classroom is located some distance from the school building. A small, dry, secure building should be considered for storing shovels, hoes, weather instruments, soil probes, dip nets and any other items frequently used.

Stream or Creek -

If a small or large stream flows through the school grounds, the students are fortunate because each offers its own learning opportunities. Throughout the school year, students can measure the stream flow and study the wildlife and plants found in and around the water. They can also test water quality for pH, temperature, dissolved oxygen, and sediment load before and after storms.



Such treatment as bank stabilization, flood plain features, islands, rapids, bridges, piers, and many other features can be added. Plant berry producing shrubs and grain food plots parallel to the creek channel. Some brush piles and nesting boxes along the bank would also attract more wildlife to the stream.

Sundial -

Very ornate sundials can be purchased, or students can make their own using simple materials like cardboard or wood. Either way, a sundial opens the door to studying in earth's movement, angles, and historical aspects of keeping time.

Time Capsules -

It's fun to look at momentos from the past, particularly when those items have some personal significance. Clues to what was news, what was popular, and who you were can be rediscovered when placed in a time capsule to be opened years later. For example, kindergarten students might place newspaper articles covering current wildlife and environmental issues, photographs of themselves participating in an outdoor classroom activity, audio or video tapes, and other treasures in a time capsule to be opened when they graduate from elementary school.

Trails -

Trails need to be carefully planned taking into consideration points of interest, topography, vegetative cover, drainage and soil conditions. A trail is most interesting if it has a curving pattern and should be four to six feet wide. Trails should be protected from erosion, preferably with some natural material such as wood chips. Wood chips are often available free of charge through local electric companies. Rock or gravel surfaces can be used, but are discouraged because of their noise factor. Trails will need regular maintenance and resurfacing.



Trails on steep slopes need special treatment to prevent erosion and gullyng. Steps made of small logs, old railroad ties or other large timbers will help stop washing. A thick layer of wood chips should be placed between the steps. Access over or through wet areas should be provided by constructing foot bridges and boardwalks.

Benches placed along trails will be appreciated for a resting spot and to view the scenery.

Tree Plantation -

Students can learn a great deal about forest management techniques from their involvement with a tree plantation or tree farm. Depending upon the allocated space for such a project, a school could recognize considerable profits from this inexpensive investment. Christmas trees are harvestable after 7 years, black locust firewood after 15, and hardwood sawlog plantations after about 30.

Water Resources -

A pond or wetland on the school site can provide some excellent opportunities for students to observe and study aquatic plants and animals. Watering areas will also enhance wildlife visitation to any size site. Many of the same benefits of having a large pond can also be obtained by constructing a small, shallow watering hole. Even an old bath tub may be placed into the ground could be used for this purpose.



Weather Station -

Even schools with very little space can find room to establish a small weather station. It can be very simple with just a thermometer, rain gauge, and barometer, or it can be complex by adding more sophisticated equipment. Instrument costs will vary and some simple instruments can be made by students.

Wildlife Brushpiles -

Brushpiles add a valuable dimension to the wildlife habitat of your outdoor classroom. If properly located and constructed, they will provide important wildlife cover and nesting sites for many years. Fallen or pruned limbs and even discarded Christmas trees can all be useful building material for wildlife brushpiles. Piles should be at least 12 feet in diameter and 5 feet high to be effective.

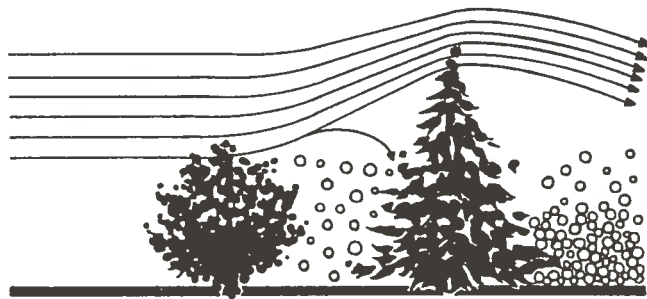
Wildlife Food Plots -

Planting strips of grains such as milo, millet, wheat, rye, and sunflowers can provide a good food and cover source for wildlife in addition to providing expanded learning experiences for students. Grain plots with soybeans or other legumes included in the planting will attract insects and provide succulent green browse, both of which are critical for survival of quail broods and other wildlife.

A typical food plot would be about 10 feet wide and perhaps 100 feet in length. Plant the food plots in alternating strips or parallel to a fence row, wooded edge, or creek bank. If you are planting on sloping ground, try planting in contour rows. Plant a variety of the different grains so students will be able to observe and study them. If only one grain is to be planted, milo will give the best results. A food plot requires good seedbed preparation and fertilizer.

Windbreaks -

Long, multiple rows of trees are called windbreaks. They generally consist of both trees and shrubs and are planted for a variety of reasons with the most obvious benefit being protection from wind. Another important function is the food and cover that windbreaks provide for many species of wildlife. Proper design, site preparation, and maintenance are important for establishing a successful windbreak planting.



Trees — the Living Snowfence

Woodland Management Area -

A wooded area can be used for studies in species identification, population, watershed, forestry, wildlife, and many other educational opportunities. Wooded areas have great potential as habitat for a variety of wildlife species. The woodland area can be managed for both wildlife and timber production.

Timber Stand Improvement, also known as TSI, is the removal of selected trees from a timber stand to improve the health and growth of the remaining trees. When improving a timber stand, be sure to leave some snags (standing dead trees) and den trees (live trees with a natural hollow in the trunks or limbs) for wildlife habitat. Fallen trees also provide nesting and hiding places for many kinds of wildlife. Worms, insects, fungi and numerous small animals can be observed in their important roles as decomposers.



CLASS ACTIVITIES USING AN OUTDOOR CLASSROOM

Below is an expanded list of activities that could be used with the suggested features/project ideas.

ART

- * Help develop a landscape plan for the outdoor classroom.
- * Make either pencil or charcoal sketches of animals and plants.
- * For decorative bouquets, make arrangements of dried grasses and other plants.
- * Take outdoor photographs with emphasis on either color or black and white.
- * Use pebbles, seeds or plants and create pictures on a slab of wood.

HEALTH AND SAFETY

- * Identify edible and poisonous plants.
- * Study the medicinal history of certain plants.
- * Practice common first-aid.
- * Study outdoor health and sanitation.
- * Identify potential safety hazards in and near the outdoor classroom. Determine what is needed to correct the hazards.

HOME ECONOMICS

- * Practice flower and vegetable gardening.
- * Hold outdoor cooking sessions.
- * Identify and study the principal sources of clothing.
- * Study edible wild plants such as wild strawberry, dandelion, garlic, onion, and wood sorrel.
- * Plant shrubs or trees to beautify the school grounds.

LANGUAGE ARTS

- * Learn the meaning of words that are commonly used by those who write or speak on the subjects of ecology and conservation.
- * Find out why certain animals and plants were given their names.
- * Write a theme describing an outdoor experience such as the beauty of the outdoors or the conservation of natural resources.
- * Write a description of the region as it will appear in another 25 years.
- * Make field notes of important, unusual, or interesting things observed while outdoors.

MATHEMATICS

- * Measure heights and diameters of trees.
- * Compute the surface area of irregularly shaped plots of land.
- * Compute the volume and weight of a large rock.
- * Prepare contour maps.
- * Measure slopes and elevations.

MUSIC

- * Sing songs about nature.
- * Compose songs or ballads based on outdoor experiences.
- * Observe and/or record natural rhythms and sounds.
- * Make musical instruments from items found out-of-doors, such as a hollow log.
- * Listen to music that was inspired by nature.

PHYSICAL EDUCATION

- * Practice activities such as archery and hiking.
- * Play outdoor sports.
- * Invent games using objects found in nature.
- * Plan a cross-country course to go through your outdoor classroom using your trail system.
- * Hold exercise sessions outside.

SCIENCE

- * **Animals**
 - Compare animal life found in a grassland community with that found in a stream or pond.
 - Analyze the material found in nests and other protective shelters of animals.
 - Keep a record of migratory birds.
- * **Aquatic Studies**
 - Analyze physical and chemical characteristics of either a stream or pond, such as pH, rate of flow, sedimentation, oxygen, carbon dioxide, and surface and depth temperatures.
 - Study aquatic life such as fish, frogs, salamanders, crawfish, mollusk, insects, and others.
 - Study the ecosystem of a pond or wetland.

Science - continued

*** Chemistry**

- Test soil.
- Experiment with different fertilizers.
- Test either pond or stream water for dissolved oxygen content and water hardness.

*** Ecology**

- Study the web of life, the water cycle and all the interlocking relationships of organisms to their environment and to others of their own kind.
- Study the effects of pollution and other problems people have placed on the environment.
- Study plant succession.

*** Geology and Soils**

- Analyze sedimentary geologic formations.
- Determine the different kinds of soil and classify them according to their characteristics.
- Compare the depth of topsoil at different locations and in different drainage ways.

*** Plants**

- Survey, classify, and compare plants that grow in wooded areas, along streams, and in open areas.
- Compare methods by which plants in the outdoor classroom scatter their seed.
- Make a study of plants that can be used for food, dyes, medicines, weaving, etc.

*** Weather**

- Plan and operate a weather station. Monitor such things as temperature, air pressure, and relative humidity. Use readings to predict weather changes.
- Compare temperature readings at different locations throughout the outdoor classroom. See the relationship between shade or dark and light reflective surfaces on temperatures.
- Compare acidity and alkalinity of stream water to rain-water.

SHOP

- * Build benches and fences for the outdoor classroom.
- * Construct signs if needed for trails, for interpretive displays, or for other uses.
- * Build nesting structures and bird feeders.

SOCIAL STUDIES

- * Examine the area near the outdoor classroom and list ways in which humanity has disrupted nature.
- * Investigate the history of the land where your school and outdoor classroom site are located.
- * Compare the environmental attitudes of different cultures.

VOCATIONAL AGRICULTURE

- * Help plan and apply conservation measures.
- * Practice land judging, woodland management, fishpond management, and other types of resource management.
- * Practice grass and plant identification skills.

MAINTENANCE

Usefulness of an outdoor classroom will be closely tied to how well it is maintained. This doesn't mean spit and polished. It does mean attractive and safe for users. In developing a maintenance schedule, please consult with your school groundskeeper for ideas and possible equipment needs. At least two members of the outdoor classroom committee should have oversight responsibilities for maintenance. **Many items in the example maintenance schedule below could be performed by the students.**

Outdoor classroom features should be of simple design and constructed with durable materials when possible. Unnecessary maintenance can be kept at a minimum by keeping these principles in mind. **If a feature cannot be easily maintained you may not want to develop it.**

Below is an example maintenance schedule. You will find that many of the items are merely a check of the condition of the outdoor classroom feature. Normally, a yearly review of a schedule is made to make changes of maintenance needs.

Example Maintenance Schedule

January

Keep all bird feeders clean and full.

February

Keep all bird feeders clean and full.
Clean old nests out of bird nesting boxes. Check condition of box.
Prune trees if needed.

March

Keep all bird feeders clean and full.
Check nesting boxes once a week. Bluebirds begin nesting.
Watch for purple martins to arrive.
Put up new bird nesting boxes.
Apply more wood chips to paths.
Clean area of all trash.

April

Keep all bird feeders clean and full.
Check nesting boxes once a week.
Examine trees and shrubs planted last year. Replace where needed.
Plant new trees and shrubs.
Plant wildlife food plots.
Plant native grasses, forbs and legumes.
Burn native grass plot.
Set out insect traps.

May

Clean, remove and store bird feeders for next year.
Check insect traps. Set out new ones if needed.
Check nesting boxes once a week. Bluebirds begin second nesting.
Plant horticultural plots.
Clean area of all trash.

June

Clearly mark wildflower and native grass areas that should not be mowed during the summer.
Weed horticultural and other plots.

July

Check nesting boxes once a week. Bluebirds begin third nesting.
Re-paint, re-stain or re-seal all wooden structures.
Weed and water horticultural and other plots.

August

Weed and water horticultural and other plots.
Walk through the outdoor classroom area and make notes of any items needing attention. Think of additional features that could be incorporated.

September

Set out fall insect traps.
Weed and water horticultural and other plots.
Clean area of all trash.

October

Fill and set out bird feeders.
Pull up herb garden annuals.
Order trees and shrubs for next spring.
Take down insect traps.
Thin bulbs, corms, and tubers and replant.

November

Keep all bird feeders clean and full.
Clean area of all trash.
Prune trees and shrubs.
Mow wildflower plots to about 4 inches.

December

Keep all bird feeders clean and full.

General maintenance: mow grass, turn compost pile, repair damages.

OUTDOOR CLASSROOM CONSTRUCTION MATERIALS

Selecting the right construction materials for the job will extend its usefulness period. Below are some comments and suggestions about material selection.

Wood

Use cedar or treated lumber. This type of wood normally will not need to be painted. Sometimes a wood preservative is periodically applied to extend its life. If a wood surface is to be painted, be sure to prime the wood before painting. Once primed, a latex-based paint is easiest for people to apply and gives a good finish.

Metal

Always use galvanized flat metals, nails and screws in any outside construction projects. Prime all metal surfaces before painting.

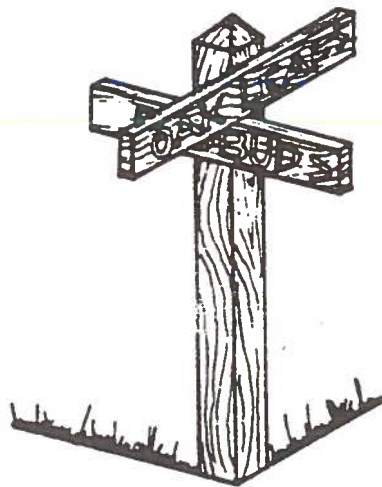
For Trails

Wood chips from utility companies work well and are generally free for the taking. They will have to be re-applied periodically though, as they decompose. Small, 1/2 inch rock is longer lasting but there is some cost to it. In open, sunny areas, grass and weeds may come through and may need to be controlled. Wood benches may either be bought or constructed. A good substitute is using a log laid lengthwise or cutting a log into sections one to two feet long and set on end.

For Signs Or Markers

Either wood or steel posts may be used. An information plate could then be attached.

If vandalism is a problem, consider placing flat cement patio bricks, slightly dug into the ground, in front of item being marked. A number could then be painted on them that follows a reference guide the students would refer to. A large rock or boulder may serve the same purpose.



MARKING AN OUTDOOR CLASSROOM TRAIL

Signs along a trail may merely be numbers or letters that a person refers to in a pamphlet. Or, the sign could be interpretive in nature, having a detailed description of what is being observed. Below are a few ideas for marking your trail.

IN-PLACE SIGNS ON POSTS

Landscape timbers:

Use a router and cut numbers on the side or on top of a slant cut. Paint the routed number so it will show. Place timber in the ground 18 to 30 inches deep, leaving the top extended out of the ground to about knee high.

Metal (aluminum or steel):

Signs can be professionally made with engraved numbers, feature drawings or descriptive information. This is a very durable type of sign. Production techniques are more specialized. A local business may not be able to make what you want. Attach to either a metal or wooden post.

Fiberglass:

Signs can be professionally made just like the metal signs. Normally a local business can make what you want. A large assortment of colors are available. This type is not as expensive as metal but more vandalism sensitive. Attach to either a metal or wooden post.

Some of the disadvantages of written interpretive signs are:

- * May increase vandalism.
- * Requires larger investments for installation, maintenance and replacement.
- * Lacks the take home value offered by booklets.

Some advantages of written interpretative signs are:

- * Provides good on-site information.
- * Pictures on signs provide re-enforcement to the learning experience.
- * Allows for spur of the moment self-guided tours.

BOULDERS

Large stones can be painted with numbers. To make them harder to move by pranksters, bury the stones half way into the ground.

CEMENT

Pour small pad of cement. It is best to use forms. While the cement is still wet, mark or press in numbers. After cement is dry, paint number imprint.

Use patio blocks laid flat on the ground, paint on numbers. Again, bury them about half way into the ground so they are not as easily removed.

MAPS

A large map could be placed at the trail head and at some points along the trail to give walkers information on the route and/or what they could find.

Small printed maps with points of interest can be printed for use along the trail.

AUDIO TAPES

Tapes are useful but expensive. A recorder can be carried by individuals or recorders may be placed at fixed locations on trail. Earphones help limit distractions. Tape recording can be changed as features change. It would be useful for special learning projects in school labs.

IN GENERAL

Do not nail or wire signs to tree. It permanently damages the tree and sets a poor example for the students.

Refer to both the reading reference section and the construction design section for address and specific design specifications.

Avoid putting interpretive signs on a walking link between two busy places or on a hiking trail. Few visitors will care about the signs after the first trip. Vandalism potential is high.

Use simple natural, blending colors and shapes that harmonize with the surroundings.

RESOURCE SECTION

Several publishing companies, resource agencies and environmental organizations provide curriculum materials, environmental resources and services. The following are suggested readings and resources:

Curriculum/Activities:

Audubon Society, *Audubon Adventures*

Stan and Jan Berenstain, *The Berenstain Bears Nature Guide*

Vinson Brown, *The Amateur Naturalist's Handbook*

Joseph Cornell, *Sharing Nature With Children*

Joseph Cornell, *Sharing The Joy of Nature*

Environmental Concern Inc., *WOW! The Wonders of Wetlands*

Donald R. Hammerman, *Teaching in the Outdoors*

Kansas Department of Wildlife and Parks, *Project WILD/Project AQUATIC Workshop*

Kansas Advisory Council For Environmental Education, Kansas State and Extension Forestry, *Interdisciplinary Environmental Education Workshops*

Kansas State and Extension Forestry, *Project Learning Tree Workshop*

Michael Link, *Outdoor Education*

Andrew Mitchell, *The Young Naturalist*

John Mitchell and Massachusetts Audubon Society, *The Curious Naturalist*

National Wildlife Federation, *Nature Scope*

Malcolm Swan, *Tips and Tricks in Outdoor Education*

University of Kansas Museum of Natural History, *Miscellaneous Kits*

References:

Linda Allison, *The Reasons For Seasons*

Brooklyn Botanical Garden Handbook Series

Vinson Brown, *Reading The Outdoors At Night*

Vinson Brown, *Reading The Woods*

References Continued

Lynn Entine and Stan Nichols, *Prairie Primer*

Golden Field Guide Series

William Harlow, *Fruit and Twig Key*

Mark K. Mitchell & William B. Stapp, *Field Manual for Water Quality Monitoring: An Environmental Education Program for Schools*

Nature Study Guild, *Finder Guides*

Peterson Field Guide Series

H. A. Rey, *Find the Constellations*

Stokes, *A Guide To Nature In Winter*

Sunset Books, *Garden Pools*

Resources:

American Camping Association Catalog and Book Store, Bradford Woods, Martinsville, IN 46151

Bullfrog Films, Inc., Aley, PA 19547

Conservation Audiovisual Catalog, USDA Natural Resources Conservation Service, Salina, KS 67401

County Extension Service

Forestry Suppliers, 205 West Rankin, PO Box 8397, Jackson, MS 39204

Local lumberyard for more detailed site drawings. Instructions for billboards and birdhouses.

National Association of Conservation Districts, PO Box 855, League City, TX 77574

Outdoor Products and Programs, PO Box 1492, Oxford, MS 38655

Schoolmasters Science Supply, 745 State Circle, Box 1941, Ann Arbor, MI 48106

Wildlife Reference Center Catalog, Kansas Department of Wildlife and Parks, RT 2, Box 54A, Pratt, KS 67124

NATURAL RESOURCE AGENCIES/ORGANIZATIONS

Kansas Advisory Council on Environmental Education, Kansas State and Extension Forestry, 2610 Claflin Road, Manhattan, KS 66502 (913) 537-7050

Kansas Department of Health and Environment, Office of Health and Environmental Education, 900 SW Jackson, Topeka, KS 66612-1290 (913) 296-1226

Kansas Department of Wildlife and Parks, RR 2, Box 54A, Pratt, KS, 67124 (316) 672-5911

Kansas State and Extension Forestry, 2610 Claflin Road, Manhattan, KS 66502 (913) 537-7050

Kansas Wildlife Federation, PO Box 5715, Topeka, KS 66605 (913) 266-6185

National Arbor Day Foundation, 100 Arbor Ave., Nebraska City, NE 68410 (402) 474-5655

National Audubon Society, 700 Broadway, New York, NY 10003 (212) 832-3200

National Wildlife Federation, 1412 16th Street NW, Washington, DC 20036-2266 (202) 790-4360

State Conservation Commission, 109 SW 9th, Suite 500, Topeka, KS 66612-1299 (913) 296-3600

US Environmental Protection Agency, Region 7, Office of Public Affairs, 726 Minnesota Ave., Kansas City, KS 66101 (800) 223-0425

US Fish and Wildlife Service, Kansas Field Office, 315 Houston, Suite E, Manhattan, KS 66502 (913) 539-3474

USDA Natural Resources Conservation Service, 760 S. Broadway, Salina, KS 67401 (913) 823-4565

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Guidelines and Features for Outdoor Classrooms, Sam Carman, Indiana Department of Natural Resources, Division of Forestry, Indianapolis, Indiana.

The Outdoor Classroom, Indiana Department of Education, Indianapolis, Indiana.

Outdoor Wildlife Learning Sites, Guidelines for Kansas Schools, Scott Hillard, George Potts and Ken Brunson, Kansas Department of Wildlife and Parks, Pratt, Kansas.

So You Want to Start an Outdoor Classroom..., The Oklahoma Conservation Commission & The Oklahoma Department of Wildlife Conservation, Oklahoma City, Oklahoma.

Teacher's Manual...Outdoor Classrooms, State Office, USDA Soil Conservation Service, Salina, Kansas. (no longer in print)

Teaching Outdoors on Your School Site, Indiana's Soil and Water Conservation Committee, Marion County Soil and Water Conservation District, Indianapolis, Indiana.

Wildlife Management for Missouri Landowners, David E. Pitts and William McGuire, Missouri Department of Conservation, Wildlife Division, Jefferson City, Missouri.

Exhibit 1

SITE INVENTORY CHECKLIST

(E) Existing Feature

(P) Potential Feature, Needs Further Development

(A) Add Feature

- | | | |
|---|--|--|
| <input type="checkbox"/> Air | <input type="checkbox"/> Erosion | <input type="checkbox"/> Roots |
| <input type="checkbox"/> Animals | <input type="checkbox"/> Fish | <input type="checkbox"/> Rotten Logs |
| <input type="checkbox"/> Animal Tracks | <input type="checkbox"/> Flowers | <input type="checkbox"/> Sand |
| <input type="checkbox"/> Animal Homes | <input type="checkbox"/> Fossils | <input type="checkbox"/> Scenic Spot |
| <input type="checkbox"/> Aquatic Plants | <input type="checkbox"/> Geometric Shapes | <input type="checkbox"/> Seeds |
| <input type="checkbox"/> Area for Garden | <input type="checkbox"/> Grassy Areas | <input type="checkbox"/> Silt |
| <input type="checkbox"/> Area for Weather Station | <input type="checkbox"/> Historical Areas | <input type="checkbox"/> Smells |
| <input type="checkbox"/> Berry Producing Shrubs | <input type="checkbox"/> Historical Findings | <input type="checkbox"/> Soil |
| <input type="checkbox"/> Bricks | <input type="checkbox"/> Insects | <input type="checkbox"/> Stumps |
| <input type="checkbox"/> Brushy Fence Rows | <input type="checkbox"/> Litter | <input type="checkbox"/> Underground Water |
| <input type="checkbox"/> Clay | <input type="checkbox"/> Machines | <input type="checkbox"/> Vines |
| <input type="checkbox"/> Clouds | <input type="checkbox"/> Marshy Areas | <input type="checkbox"/> Watershed |
| <input type="checkbox"/> Colors | <input type="checkbox"/> Microorganisms | <input type="checkbox"/> Weeds |
| <input type="checkbox"/> Coniferous Plants | <input type="checkbox"/> Oldest Thing | <input type="checkbox"/> Wildlife Habitat |
| <input type="checkbox"/> Creek | <input type="checkbox"/> Plants for Food Cover | <input type="checkbox"/> Wildlife Paths |
| <input type="checkbox"/> Deciduous Plants | <input type="checkbox"/> Plant Succession | <input type="checkbox"/> Wind |
| <input type="checkbox"/> Decomposing Trees | <input type="checkbox"/> Pollution | <input type="checkbox"/> Windbreaks |
| <input type="checkbox"/> Den Trees | <input type="checkbox"/> Pond | <input type="checkbox"/> Youngest Thing |
| <input type="checkbox"/> Drains | <input type="checkbox"/> Rocks | |

NOTES OR ADDITIONAL FEATURES FOUND BUT NOT LISTED ABOVE

Attach additional pages of comments as needed.

Exhibit 2

OUTDOOR CLASSROOM PROPOSED FEATURE/PROJECT WISHLIST

List below proposed feature/projects that you would like to include in your outdoor classroom. Refer to the Outdoor Classroom Features/Projects Ideas section of this publication. Also keep in mind the Site Inventory Evaluation. After listing proposals, use the Feature/Project Worksheet to expand each proposal.

- Proposed Feature/Project: 1. ex: FEEDING STATIONS
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____

Exhibit 3

**OUTDOOR CLASSROOM
FEATURE/PROJECT WORKSHEET**

Date: _____

Proposed Feature/Project: _____

Why Is It Needed: _____

How Will It Be Used: _____

Materials Needed: _____

What Will Be The Cost: _____

Source Of Funding: _____

Who Will Help Install: _____

Maintenance Needs: _____

Who Will Maintain It: _____

Professional Assistance Needed: _____

Exhibit 4-A

Sample Memorandum of Agreement

The _____ Conservation District,
(office address)_____.

and

The _____ School District,
(office address)_____.

enter into this agreement on _____ (date) to cooperate in assisting in the planning and development of school properties to conserve natural resources, control erosion and sedimentation, and provide environmental education opportunities for students.

The _____ Conservation District agrees to:

1. Provide information and technical assistance to the school district for planning and installing outdoor classrooms or other sites and for planning and carrying out such environmental education projects as environmental learning trails, design and construction of small marshes and ponds for aquatic studies, and plantings for instructional, beautification, and other purposes.

Options:

2. Arrange conservation field study tours for teachers and school officials as requested and provide information on environmental education study sites for students.
3. Assist in organizing and promoting teacher training workshops and courses in environmental education.

Page 2 - Sample Memorandum of Agreement

The _____ School District
agrees to:

1. Develop outdoor classrooms for environmental studies on appropriate school sites and provide environmental education learning experiences throughout the curriculum to the maximum extent feasible.
2. Encourage and support teacher participation in workshops, courses and seminars on environmental education.

It is mutually agreed that neither the conservation district or the school district is bound by any obligation in this agreement involving expenditure of funds. It is also agreed that _____ County Conservation District does not assume or imply any liability for activities involved within this agreement. Modifications in this agreement may be terminated at any time by mutual consent or by either party giving the other party 90 days prior written notice of date of termination.

_____ Conservation District

By _____ / _____
Chairperson Date

_____ School District

By _____ / _____
Name Title Date

Exhibit 4-B

Sample School District Policy on Outdoor Classrooms

It shall be the policy of the _____ School District of _____ County, State of _____, that:

1. The sites on which schools are located are as important to the educational process as school buildings, laboratories, libraries, etc; each site should have educational specification developed for other learning facilities.
2. The outdoor classroom is recognized as an integral part of the school program and its environmental studies programs are recognized as part of the school curriculum; each outdoor classroom or "environmental learning laboratory" shall have educational specifications developed for the environmental studies program.
3. The _____ School District shall budget public and/or solicit private funds for developing use of the outdoor classroom to increase understanding of ecological processes that enable people to make proper use of natural resources for their needs and take proper care of the environment.
4. The Board of Education shall establish a permanent resource inventory of each school site that includes information on soil, vegetation, wildlife habitat, unique environmental qualities, water availability and existing natural features.
5. After establishment of an outdoor classroom through the development of a conservation plan, continued annual review of the program is to be made based on:
 - a. Maintaining the educational and resource management objectives of the conservation plan.
 - b. Recorded use of the outdoor classroom during the previous year and evaluation of impact on the site.
 - c. Planned educational use of the site for the ensuing year.
6. During the design, development and construction of any learning site or facility in the outdoor classroom, the builders shall be required to comply with local, state and national regulations regarding pollution of air, water, soil, and the protection of environmental study sites such as trees, special plantings, and wildlife. Any construction shall be accomplished with the assistance of professional natural resource specialists.
7. It is the intent of the board of education to continually maintain all sites and outdoor classroom within the school district in accordance with the planned activities.

Exhibit 5-A

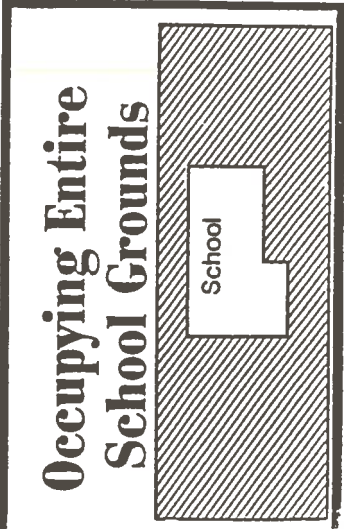
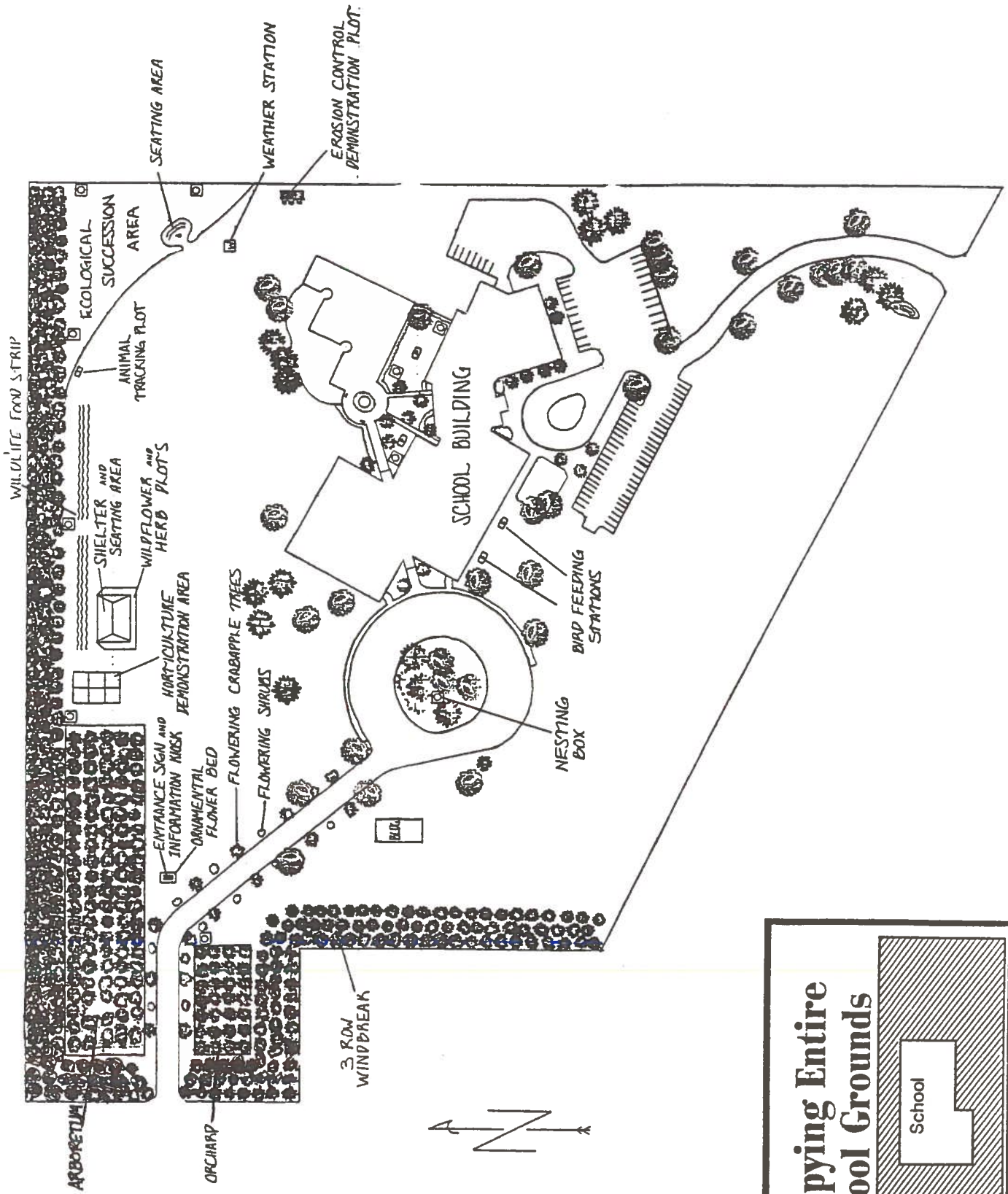
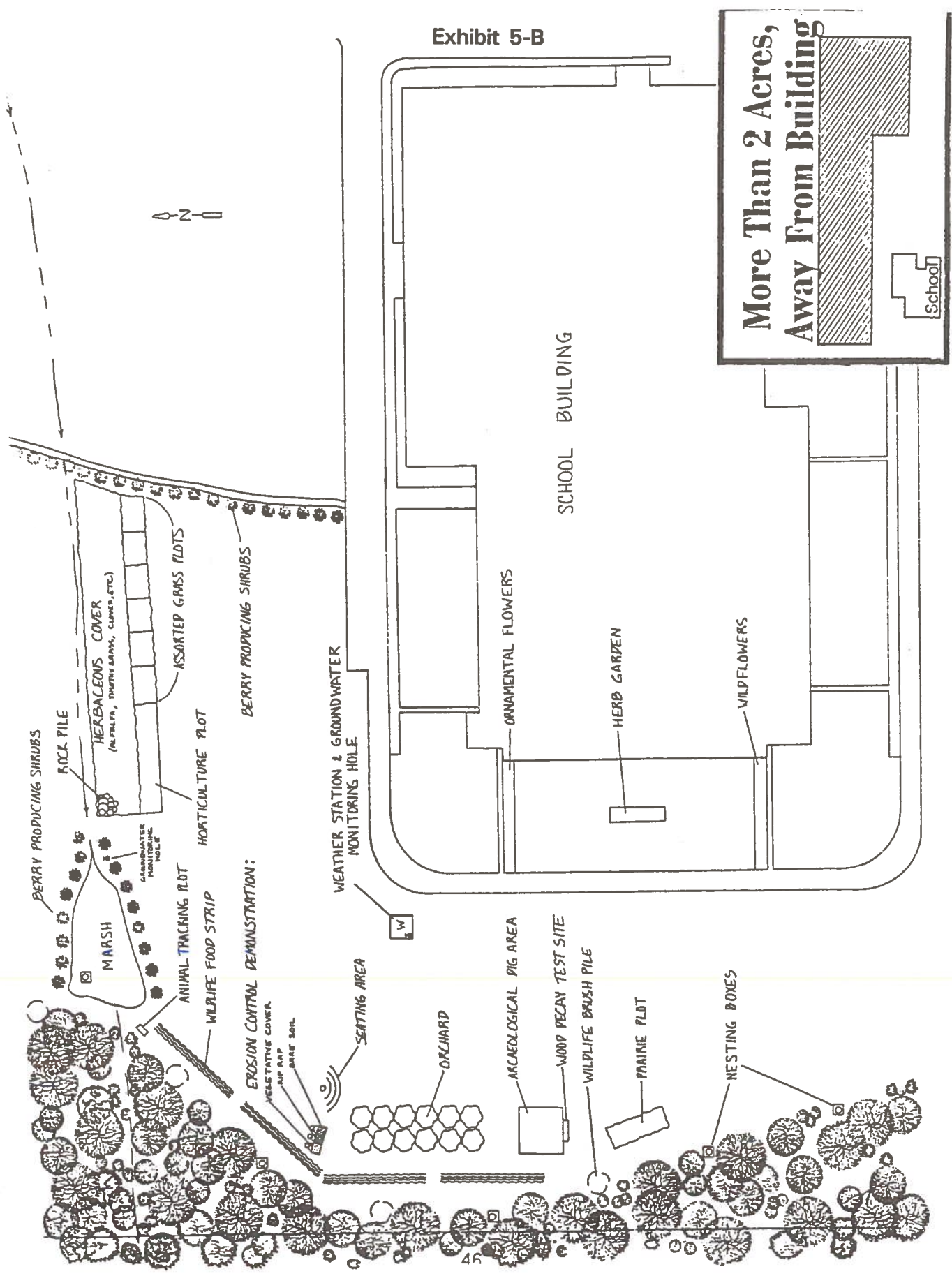


Exhibit 5-B



**More Than 2 Acres,
Away From Building**

Exhibit 5-C

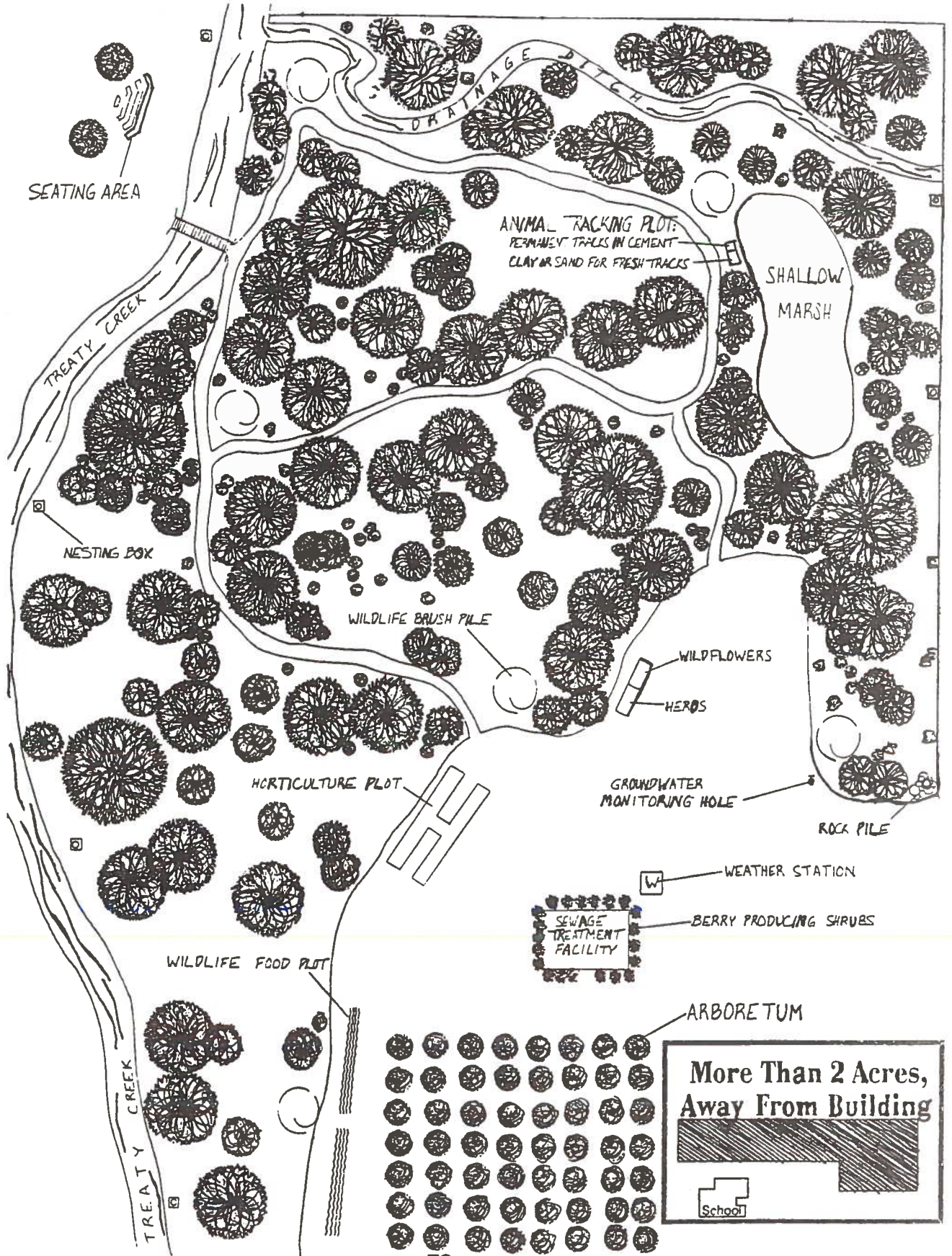


Exhibit 5-D

