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ABSTRACT

This guide describes how to establish successful trails, outdoor classrooms, or other environmental education improvements on rural and urban school grounds. Teachers are encouraged to promote the environmental project as a solution to an existing problem and to include all parties and stakeholders that can benefit from a coordinated environmental education effort. Some of the 15 projects described are nature trails, composting demonstrations, wildlife feeders, timber measurement plots, wildlife plantings, outdoor classrooms or amphitheaters, and historical activities. The guide describes how to establish need, document purpose and intent, and organize interested parties. Successful projects depend on many partners. Resources include labor, material suppliers, and funding sources, and when the first two are lined up, the third is easier to get. Forest Service, Farm Service, and Extension personnel can help in determining where school boundaries are and which areas may lend themselves to environmental projects. Safety, liability, trespassing, and maintenance issues are discussed. The integration of outdoor projects across grade levels and curricula is stressed. Fourteen award-winning environmental education curricula for grades K-12 are presented that cover aquatic life, forest stewardship, wildlife, water resources, waste management, and outdoor leadership. Ordering information is provided. Also included are books of interest, North Carolina organizations that are potential resources, national organizations, and North Carolina educational state forests. (TD)

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School Yard Environmental Projects

A Planning Primer

ED 408 120

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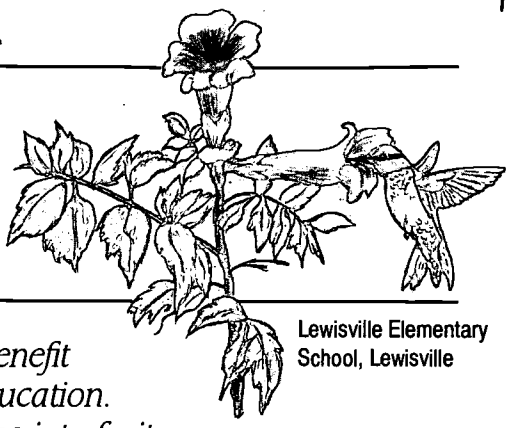
A Planning Primer



Lewisville Elementary School, Lewisville

Many teachers, parents, and administrators are realizing the benefit of enhancing school yards and grounds for environmental education. The challenge for most is how to transform their good intentions into fruitful and positive results. This note describes planning steps and other practical considerations to establish successful trails, outdoor classrooms or other environmental education improvements on rural and urban school grounds. The final sections deal with important educational curriculum, programs, and resources available to school systems within North Carolina.

Introduction

The interest in environmental education for youth is universally increasing. The Cooperative Extension Service (CES) receives many requests to assist schools hoping to capitalize on outdoor activities and opportunities available on their schools' grounds. We've compiled the critical planning steps, ideas, and information that we've gleaned from our experience working on successful projects.

This document is arranged in a logical order that one might follow in implementing a successful environmental education project. The chapters are fairly self-contained and can be read in any order to match the needs of the user. The resource lists will aid your planning to help coordinate, prioritize and schedule your efforts for maximum success. A common theme is stressed throughout this paper: "Strive to include all of the potentially impacted parties and the stakeholders that can benefit from a coordinated environmental education effort."

Needs

Every school is in need of special attention: new paint, materials, A-V equipment, yet resources are scarce. Often the request for additional funds for outdoor classrooms or a nature trail can be viewed as another luxury that the school can't afford. One successful method is to "piggy-back" or promote your environmental project as a solution to an existing problem. Propose an environmental education project that will solve an existing problem (erosion, littering, beautification needs). Be proactive in your requests. Look for an initial project that can be completed "in-house" and will address an existing need or rectify an eye-sore or a potential hazard while building school spirit.

Start small and address a need. Establish a reputation as a team player and build a supportive team that will help you accomplish subsequent projects. [In the process you'll be developing student awareness of the environmental concerns around the school and, more importantly, the opportunity to solve problems with a "Team Approach."]

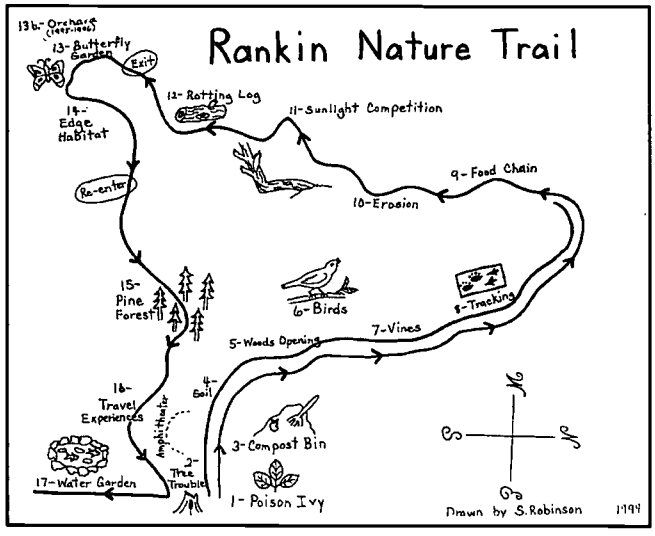
Begin by making a "needs-list" of the school grounds. Your list should be all inclusive. Cover the items needed to make your school a showplace, including landscaping, beautification, recreation, and other outdoor enrichment opportunities useful across all disciplines. The list might seem too inclusive to begin with but it can enable you to make future school improvements with an environmental education message, lesson or impact. For instance, any future landscape planting can include wildlife beneficial and native plants. Mulch application can turn into a science experiment where natural materials are compared with recycled newsprint or other materials for cost, effectiveness, beauty and benefit.

Project Possibilities: What Are the Options?

At this point you may need to consider the environmental education projects that are possible on your school property. The following section lists many of the successful projects that are feasible on school grounds.

NC020977

Nature Trail—Planned trails provide students areas to learn, recreate, observe and interpret nature. Trails offer low-cost access to natural surroundings and often require little maintenance when properly located and constructed. Trail design should be set by the needs and interests of your intended users. Needs will vary with age, physical ability and interests. For a detailed treatment of trails, request *Recreational Forest Trails,* WON-29 from your local CES Center.



Rankin Elementary School, Greensboro

Greenhouse/Cold Frame—For the advanced biology class interested in studying plant growth, floriculture or agriculture, a greenhouse may be a worthy environmental education project. A cold frame may fit the bill where winter protection and early spring seedling production is your goal. See HIL-404 *Low Investment Propagation—Winter Protection Structure* from your local CES Center and *Recreational Buildings and Facilities,* Ag, Hnbk. 438 available from Extension Forestry (address on page 11).

Hummingbird-Butterfly Garden—Students can attract and support hummingbirds and butterflies by the planting of beneficial plants on school grounds. Procedures are available in *Hummingbirds and Butterflies,* WWW-20 from your local CES Center.

Composting Demonstration—Decomposition and recycling of nutrients are brought to life to students with an active composting demonstration. Procedures and details are available in *Composting for Home Gardens,* HIL-8100 and *Backyard Composting* from your local CES Center.

Vermiposting—Where space is limited bring the outdoors into your classroom. Vermiposting uses redworms to teach the message of decomposition and recycling to life in a small container. Details are available in many naturalist books and the classic: *Worms Eat My Garbage,* M. Applehof, 1982. Flower Press. Kalamazoo,MI.

Wildlife Feeders—Attracting birds to your school campus can be a great way to introduce students to wildlife identification and nature. Check your local library for resource books or see: *How To Attract Birds,* K. Burke. 1983. Ortho Books, San Francisco.

Wildlife Plantings—Planting for wildlife can be a great way to enhance the school property, control erosion and add diversity to the school landscape. Technical assistance, plant recommendations and sources of commercial wildlife materials are available from the NC Wildlife Resources Commission.

Wildlife Observation Stations—In the right locations wildlife blinds offer a low-cost way for small groups to observe birds and other common wildlife. Rural schools with adjacent timbered property or water bodies lend themselves to the placement of blinds for pre-school and afterschool viewing by small clubs.

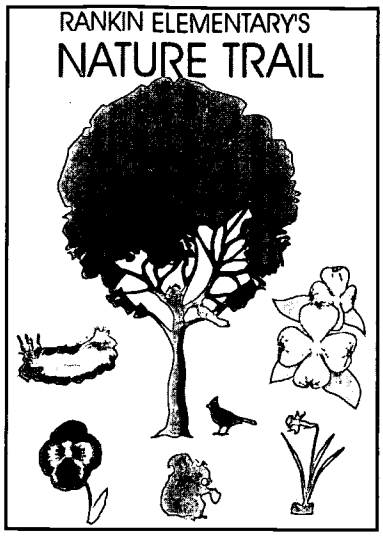
Wildlife Tracking Station—School-sized classes don't lend themselves to great wildlife viewing, however tracking stations can provide wonderful learning opportunities. A "track station" is a prepared area where animals will imprint the ground. Most commonly bait or some lure is placed to attract wildlife during the night. Details are available in *Animal Tracks,* 4-H Wildlife Project # 438. from your local CES Center.

Timber Measurements Plot—One of the simple ways to get students interested in math, measurements and the outdoors is with a timber measurements plot. Students use trees to learn about height and volume measurement of standing trees. Details are available in *Measuring the Volumes of Standing Trees,* WON-5 and *Handy Tables for Measuring Farm Timber,* AG 119 from your local CES Center.

Wildlife Exclosures—One of the most dramatic ways to learn about the impact of wildlife on vegetation is through a wildlife exclosure. Low-cost fencing is erected to keep deer, rabbits and other wildlife from a small space. Over time students document vegetation changes and draw conclusions about the impacts of wildlife on habitat.

Outdoor Classroom/Amphitheater—Expanding the use of outdoor facilities often takes the form of

low-cost, low maintenance benches and a podium. Many schools may have a natural amphitheater waiting to be developed. Plans are available from Extension Forestry.



Rankin Elementary School, Greensboro

Successional Vegetation Plots—Plant succession is the orderly progression of vegetation from bare soil (disturbed land) to mature forest. By sectioning off small plots and protecting them from mowing and other management, students can track the vegetational changes that occur. A series of three to five annual plots can be installed on unused hillsides or tough to mow areas that will grow into a living experiment for science and biology classes

Historical/Cultural Resource Interpretation—Historical and prehistorical activities can be a great addition to social studies and history curricula. Recreations of historical landscapes and hands-on activities of pottery crafts, flintknapping, primitive tools and colonial life can be the focus your outdoor classroom. Year-round usage helps to instill an appreciation of the hardships of our predecessors. Local historians, craftpersons and re-enactment enthusiasts can help bring life to history texts individually or as a day long, school-wide program.

Experiment/Learning Stations—Special features and opportunities for environmental education and interpretation exist on all school grounds: water treatment facilities, old trash dumps, wetland areas, streams, gullies, exposed geological features, forest stands, old fields, and the like. To take maximum advantage of these opportunities you must know of their existence, appreciate their worth and develop them to a safe, useful capacity. In most cases, safe pathways and a small congregation area are all that is needed to develop these sites. Other sites might require experiment benches, storage lockers for equipment or other low cost improvements. Check your environmental education curriculum for ideas. Remember, the purpose is to expose the students to the outdoors, therefore maximize activities while minimizing infrastructure.

Thinking It Through

Begin with a brief exercise of documenting the purpose and intent of your efforts. What is the need for the project? What is its purpose? Who is the intended audience? Who are the people/partners that will accomplish the project? Who will maintain it? Who will take pride and ownership of the project? What's the life expectancy of the project?

Project: _____

Need: _____

Purpose: _____

Audience: _____

Potential partners: _____

Who will maintain it: _____

Who'll have ownership: _____

Life expectency: _____

Resources

The next step in planning a schoolyard environmental project is to list the potential resources (property, materials and organizational support) available to plan and conduct the anticipated environmental education projects. The procedure can take the form of an administrative mandate (quickest method but least favored) to a cooperative brainstorming effort with all interested parties (most involved method with the greatest chance for success).

How does the momentum begin? Typically an enthusiastic teacher (often a biology or science coordinator) has seen a successful nature trail or outdoor classroom and hopes to replicate that program at their school. That key individual makes a few calls and discusses the possibility with other teachers within a team and hopefully has garnered some support from school administrators. At this point a contact is made with a local resource professional to determine the extent of technical support and guidance available. The recommendation is made to make an inventory of the assets on hand that can make the mission possible.

LIST THE HUMAN RESOURCES AVAILABLE. These can be teachers, parent volunteers, student clubs, classes, teaching assistants, ground maintenance crews, local youth groups, garden clubs, or even community service workers. The length of your possible resources list will give you a fair assessment of the likelihood for success on large scale projects. The following section provides a list of resources (partners) that can aid your project.

Project Partners

Successful projects come to fruition with the aid of many partners. We've divided them into three important groups by purpose: Labor/Physical, Material Suppliers, and Potential Funding Sources.

Surprisingly if you can line-up the appropriate partners in the first two categories, the third (and often dreaded) group may be minimized in importance.

Labor/Physical/Technical Support:

- Student/Faculty
- Youth Groups
- Civic Groups
- Resource Agencies
- Forest Industry
- Parent Volunteers
- After School Clubs
- Gardening Clubs
- Master Gardeners
- Local Media

Suppliers/Materials

Many low-cost or free materials are available for the asking or recognition of the source. These include: mulch, wood chips, railroad ties, power poles, lumber, building materials and hardware. The following groups can often supply needed materials as a favor or as a part of their community outreach:

TECHNICAL ASSISTANCE, INFORMATION, EQUIPMENT:
School System: Maintenance Staff, County Administration, Building Staff
Municipal and County Departments: Parks and Recreation, Public Works, Sanitation, Recycling

MULCH, POWER POLES, RAILROAD TIES, WOOD CHIPS:
Public Utilities/Contractors: Power, Telephone, Railroad, and Tree clearing companies

PLANT MATERIALS, EQUIPMENT LOAN, LABOR:
Parents, Farmers, Landscapers, Plant Growers
Local Business: Hardware, Home Improvement, Gardening Centers

Potential Funding Sources:

- Parent Teacher Assn.
- Benefactors
- County Farm Bureau
- Local Foundations
- School Budget
- Local Civic Clubs

Partner Checklist:

- ❑ Clubs _____
- ❑ Teachers _____
- ❑ Administrators _____
- ❑ Classes _____
- ❑ Maintenance _____
- ❑ Supplies Needed _____

_____

- ❑ Parent Volunteers _____

_____

- ❑ Other Volunteers _____

_____

- ❑ Media Contacts _____

- Local Conservation District
- Bake Sales
- Forest Industry
- Local Business/Banks
- Sell recyclables
- Raffles
- Beautification Awards
  (Keep NC Clean and Beautiful),
  P.O. Box 12943, Raleigh, NC, 27605-2943.
- Urban and Community Forestry Grants
  (tree planting, demonstrations)
  NC Div. of Forest Resources,
  P.O. Box 29581, Raleigh, NC 27626-0581
- Adopt-A-Trail Grants
  (NC Division of Parks and Recreation),
  State Trails Coordinator,
  12700 Bayleaf Church Rd. Raleigh, NC 27614.

Determining What's There

Surprisingly, few individuals have actually seen the total school property to know the full extent or potential to develop environmental education projects. Begin by collecting a plat map or surveyor's sketch of the property to determine property boundaries. A plat map will show the location of buildings, ball fields, parking lots, easements and water treatment facilities. Plat maps give a rough idea of the area that will be "leftover" and can be developed for environmental purposes. These maps are often available from your county school administration office (planning and building maintenance department).

Additionally, your local offices of the NC Forest Service and Farm Services Agency can be contacted to obtain an aerial photograph of the property. An aerial photo can aid in determining vegetation types, stream locations and the general land uses adjacent to the school property. While at the Farm Services Agency ask for a photocopy of a topographic map of the property that illustrates the elevation changes on the property. Likewise an elevation map may be available from the architect that designed the school originally. Elevation maps, property maps, building blueprints and other important planning documents are often kept by your county school administration or planning office and can be requested from them.

After obtaining the maps and photos listed above, circle potential areas that may be suitable for environmental education use. Then arrange an afternoon when a forester, outdoor education specialist or other resource professional can walk the property with you to check the usefulness, site conditions, and any potential safety or liability issues related to the site. While this can be done by the school staff, it is highly recommended to have experienced professional help.

Don't be surprised if little natural space is available. Most school sites are leveled to the maximum extent possible to keep construction costs low and to develop field sports areas. "Leftover areas" are often the hillsides, slopes or streams that couldn't be leveled or resulted from the leveling process itself. Often construction debris, rocks and even school related trash are concentrated in these areas making development for educational use a struggle. Don't be discouraged! The initial walk through will help you prioritize needs, realistically assess what's there, evaluate the workload, and help (re)focus your purpose.

Some schools have addressed trash in a proactive fashion—using the clean-up process as a learning opportunity. In a similar fashion to the NC Big Sweep Program, students collect trash, separate it into several categories (glass, plastic, aluminum, construction waste, sports equipment, etc.) and weigh it. Then a report can be drafted (with graphical representations of each waste category) and presented to the school administration and maintenance staff with suggestions for future reduction of litter on the school property. The students will be involved, and school ownership, pride and knowledge will soar.

Adjacency Issues/Property Lines

The importance of locating and respecting property boundaries cannot be overstated. Trespassing and liability issues related to property are serious concerns and are crucial to the long-term success of any project. Often an adjoining landowner may have serious reservations regarding the student use and unintended attraction to their property. Be sure to respect and account for adjacent landowner concerns about the development of a trail network that could lead to vandalism, resource abuse or student loitering.

The best solution for many of these issues is to meet with all parties prior to the layout of any construction project. By envisioning the future and sharing concerns, adjustments and reassurances can be made to create a "win-win" situation. Nothing is more important than the reputation of a school in the community and risking that reputation over a failure to communicate with neighbors should be avoided at all costs.

Safety/Clean-up

One of the critical components of planning any project on school grounds is to maintain the health and safety of the students and staff. During the initial walk through of the property you may be aghast at the condition of the school property at the edges of ball fields and creeks. The extent of old tires, rubbish, construction and school-related debris may be a shock to most teachers and certainly to environmentally oriented students. Trash and other potential hazards must be noted and dealt with from the onset of a project. Likewise, if certain hazards can not be removed they must be fenced or physically excluded from the proposed project to maximize student safety and minimize liability.

Maintenance

The enthusiasm at the start of the project can only be maintained if there is a strong commitment to maintain a project throughout its intended lifetime. The key is to secure "shared-ownership" of the project so that its continued survival isn't dependent solely on one individual. Often times a key teacher is promoted, transferred or is reassigned duties and can not maintain the scope of the project. The best insurance against project abandonment is to have broad base support and "buy-in" throughout the effort. Be sure to involve maintenance staff throughout project design to ensure proper maintenance for years to come.

Integrating Curricula Across Disciplines/Grades

Fortunately, you do not have to dream up activity ideas for all or any of the projects listed above, because they already exist in a multitude of formats in award-winning environmental education curricula. The challenge is to integrate outdoor projects across grade levels and curricula. Much of this work has already been accomplished and documented in the following curricula. All are available free and may already exist in your school. Other curricula may require that you attend a training program before you can receive the program material. In any case, take advantage of the resources available to you within your town and county, or attend a workshop to receive the material (most offer teacher recertification units and are pleasurable learning experiences.)

COMPARISON TABLE FOR SCHOOL YARD ENVIRONMENTAL PROJECTS

	Time/People	Dollars	Dollars	Applicability	
Project Type	**Planning Effort**	**Initial Expense**	**Upkeep Expense**	**Rural**	**Urban**
Cold frame	Low	Low	Low		✔
Composter	Low	Low	Low	✔	✔
Vermiposter	Low	Low	Low	✔	✔
Wildlife Observation Station	Low	Low	Low	✔	?
Wildlife Feeder	Low-Med	Low	Low-Med	✔	✔
Wildlife Tracking Station	Low	Low	Low	✔	✔
Wildlife Exclosure	Low	Low	Low	✔	?
Timber Measurement Plot	Low-Med	Low	Low-Med	✔	
Hummingbird/Butterfly Garden	Low-Med	Low-Med	Low-Med	✔	✔
Wildlife Planting	Medium	Medium	Medium	✔	
Successional Vegetation Plot	Medium	Medium	Medium	✔	?
Historical/Cultural Stations	Medium	Med-High	Medium	✔	
Outdoor Classroom	Medium	Med-High	Medium	✔	?
Greenhouse	High	Med-High	High	✔	✔
Nature Trail	High	Med-High	High	✔	?
Amphitheater	High	High	High	✔	?

Comparisons levels are approximate only. Actual costs will vary by site, cost of materials and labor, and the scope of project.
? Applicability depends on specific site characteristics, schoolyard size and other limitations.

AQUATIC WILD—NC Wildlife Resources Commission, Division of Conservation Education, 512 N. Salisbury St., Raleigh, NC 27611, (919) 733-7123. Aquatic Wild is a conservation education for educators of kindergarten through high school youth. Activities center around the needs of aquatic animals and their interrelations with humans and the environment.

BRANCHING OUT: THE NORTH CAROLINA FOREST STEWARDSHIP ACTIVITY GUIDE—is a middle-school environmental education activity guide which emphasizes the stewardship of North Carolina natural resources. Fourteen easy to follow classroom and outdoor activities link youth to the forest through the study of wildlife, recreation, trees, soil and water and natural beauty. *Branching Out* is available in print and electronic form through the NCSU, Forest Stewardship, Extension Forestry, and NC Division of Forest Resources World Wide Web home pages. For more information contact the Forest Stewardship Coordinator at P.O. Box 29581, Raleigh, NC 27626-0581 or Extension Forestry, Box 8003, Raleigh, NC 27695-8003. (919)515-5636. (*Branching Out* conforms to the NC Department of Public Instruction's Integrated Science Curriculum).

CAST-OFF CAPERS—4-H Solid Waste Curriculum, Contact: local county 4-H Agent or 4-H Specialist, Box 7606, NCSU Campus, Raleigh, NC 27695-7606. An integrated resource curriculum tackling the issue of solid waste management from reuse and recycling to energy conversion and landfills.

ENVIRONMENTAL EDUCATION LEARNING EXPERIENCE (EELE)—NC Department of Environment, Health and Natural Resources, Division of Parks and Recreation, P.O. Box 27687, Raleigh, NC 27611-7687, (919) 733-4181. EELE is an activity packet developed for each state park and recreation area based on the primary feature or theme of the park. Each EELE packet contains pre-visit activities, on-site activities, and post-visit activities that have measurable objectives, background information, vocabulary, references, and step-by-step instructions to the activities. (EELE conforms to the NC Department of Public Instruction's Integrated Science Curriculum). NC Dept. of Environment, Health, and Natural Resources, P.O. Box 27687, Raleigh, NC 27611-7687.

NORTH CAROLINA WILD NOTEBOOK—Free subscriptions are available to teachers/educators by writing the Division of Conservation Education, NC Wildlife Resources Commission, 512 N. Salisbury St., Raleigh, NC 27604-1108. *North Carolina WILD Notebook* is produced eight times each year by the Division of Conservation Education of the NC Wildlife Resources Commission. It is designed to help educate young people about the environment and the need to conserve our natural resources.

PROJECT LEARNING TREE (PLT)—State Coordinator, Extension Forestry, NCSU, Box 8003, Raleigh, NC 27695-8003, (919) 515-5518. PLT is an environmental education project jointly sponsored in North Carolina by the NC Cooperative Extension Service, the NC Forestry Association, NC Division of Forest Resources, and the UNC-CH Center for Science and Math Education. Free activity guides for grades K-12, newsletter and other materials are available following attendance of a training session.

Tree Trunks—*An educational tool kit that supports PLT curriculum. They are filled with posters. activity guides, visual aids, and audio-visual materials. They are available from NC Division of Forest Resources district offices, educational forests and county Cooperative Extension centers.*

PROJECT WET (WATER EDUCATION FOR TEACHERS)—NC Department of Environment, Health, and Natural Resources, Division of Water Resources, P.O. Box 27687, Raleigh, NC, 27611, (919) 715-5433. Project WET is a broad-based water resource curriculum for students K-12. Project WET focuses on the value, cultural, historical, and legal issues for the water resource.

PROJECT WILD—NC Wildlife Resources Commission, Div. of Conservation Education, 512 N. Salisbury St. Raleigh, NC 27611, (919) 733-7123. Project WILD is a conservation education project for educators of kindergarten through high school youth. Activities center around the needs of wildlife and their relationship with humans and the environment.

RIPPLES: A BIG SWEEP ACTIVITY GUIDE—UNC Sea Grant Program, NC State University, Box 8605, Raleigh, NC 27695-8605. $2.00 in state shipping cost. Pub. UNC-SG-90-02. Ripples is a collection of 16 activities concerning litter in the aquatic and marine environment. Activities are designed for the elementary 9- to 11-year-old student.

RIVER'S EDGE—4-H Environmental Science Adventure, Contact: local county 4-H Agent or 4-H Specialist, Box 7606, NCSU Campus, Raleigh, NC 27695-7606. An integrated resource curriculum with Leader's Guide, student book and activity sheets to support 25 action-oriented environmental discovery projects.

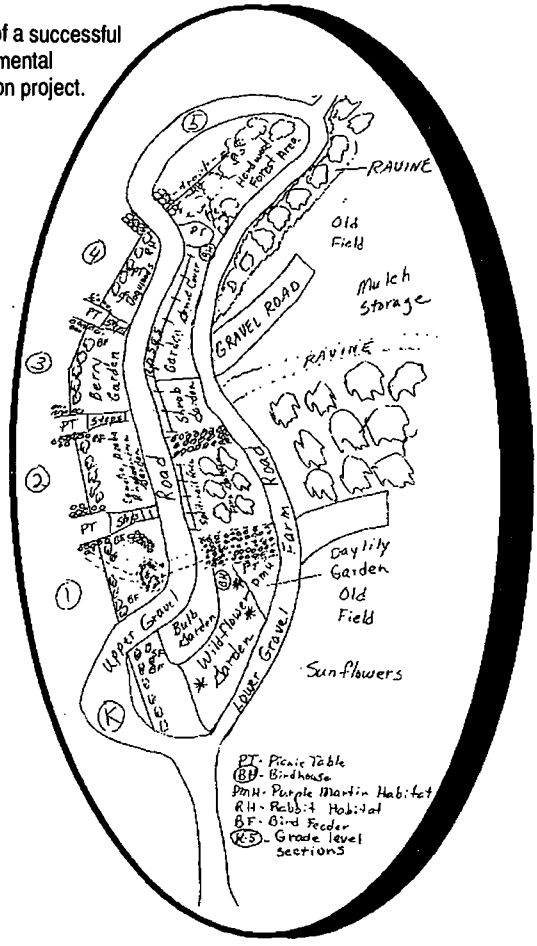
STREAM WATCHING WITH KIDS: AN OUTING LEADER'S GUIDE—Contact Stream Watch Coordinator, NC Division of Water Resources, 512 N. Salisbury St., Raleigh, NC 27611, (919) 733-4064. General information on Stream Watch Program. A Guide to Stream Walking, a loan copy of Videocassette tape of Stream Watch play.

USING THE OUTDOORS TO TEACH EXPERIENTIAL SCIENCES (UTOTES)—NC Department of Envrionment, Health and Natural Resources, Director of School Programs, NC State Museum of Natural Sciences, P.O. Box 2955, Raleigh, NC 27626-9555. UTOTES is an exciting teacher education project designed to improve elementary science education by transforming schools into a resource for hands-on science and participatory learning. UTOTES places emphasis on teacher, student and community enhnacement of school grounds.

WILD EDUCATION SITES: NC WILD (WILDLIFE IN LEARNING DESIGN)—NC Wildlife Resources Commission, Div. of Conservation Education, 512 N. Salisbury St,. Raleigh, NC 27604-1188. A WILD Education Site is an extension the NC WILD Program that establishes a school, business and/or organizational partnership that puts environmental education into action. The goal is to develop natural habitats into sites that can be used for teaching, exploration, and for NC WILD activites that schools and the greater community can enjoy. WILD Education Sites are North Carolina's version of the national Project WILD School Sites Program.

WATER WORDS: A WORD GAME—Division of Soil and Water Conservation, Department of Environment, Health and Natural Resources, Archdale Bldg., Raleigh, NC 27611.

A map of a successful environmental education project.



Jefferson Elementary School, Shelby

Books of Interest

Common Forest Trees of North Carolina. NC Division of Forest Resources, P.O. Box 29581, Raleigh, NC 27626-0581, 97 p. Paperback $.71.

Creepy Crawlies. 1992. C. Kilpatrick. Usborne First Nature Books. EDC Publishing. 24 p. Paperback $3.95.

North Carolina Wildlife Viewing Guide. 1992. C. Roe. Falcon Press. 95 p. Paperback. $5.95

Promoting Environmental Education. 1994. A. Ruskey, and R. Wilke. Univ. of Wisc.-Stevens Pt. Foundation Press. 349 p. Paperback.

Rain Forests: Tropical Treasures. 1989. Ranger Rick's NatureScope. J.Braus,Ed., National Wildlife Federation. Paperback $7.95.

Sharing Nature With Children. 1979. J.Cornell. Dawn Publications, Paperback $6.95.

Teacher's Guide To Environmental Education Programs and Resources. Printed annually by NC Dept. Environmental, Health and Natural Resources. Office of Environmental Education, P.O. Box 27687Raleigh, NC 27611-7687. Paperback-Free.

Teaching Kids to Love the Earth. 1991. M. Herman, J.Passineau. A.L.Schimpf, P.Treuer. Pfiefer-Hamilton Publishers. 175 p. Paperback $14.95.

Tree. 1991. Eyewitness Books. D. Burnie. A.A. Knopf, Inc. 64 p. Hardback $16.00.

Trees Are Terrific. 1992. Ranger Rick's NatureScope. J.Braus, Ed. National Wildlife Federation. Paperback $7.95.

Environmental Education Resources

The following organizations offer a good place to seek additional environmental education information, posters, videos and curriculum.

NC Cooperative Extension Service
4-H Dept.
NCSU, Box 7606 Raleigh, NC 27695
(919) 515-3242
or local County Extension center

NC Wildlife Federation
P.O. Box 10626
Raleigh, NC 27605
(919) 833-1923

Office of Environmental Education
NC Dept. of Env., Health, and Nat. Res.
P.O. Box 27687
Raleigh, NC 27611
(919) 733-0711

Stream Watch
Div. of Water Resources
P.O. Box 2 7687
Raleigh, NC 27611

US Forest Service
P. 0. Box 2750
Asheville, NC 28802

NC Coastal Federation
3223-4 Hwy. 58
Swansboro, NC 28584

NC Cooperative Extension Service
A & T University
Natural Resources Program
PO. Box 21928
Greensboro, NC 27420-1928
(910) 334-7957

NC Division of Parks and Recreation
Interpretation and Education
12700 Bayleaf Church Road
Raleigh, NC 27614
(919) 846-9991

Keep North Carolina Clean & Beautiful, Inc.
P.O. Box 12943
Raleigh, NC 27605

NC Museum of Natural Sciences
Education Section/School Prog.
102 N. Salisbury St.
P.O. Box 29555
Raleigh, NC 27626-0555
(919) 733-7450, ext. 16

NC Wildlife Resources Comm.
Div. of Conservation Education
512 N. SalisburySt.
Raleigh, NC 27604-1188

NC Soil and Water Conservation Division
512 N. Salisbury St.
P.O. Box 27687
Raleigh, NC 27611-7687
(919) 571-4700

Acid Rain Foundation
410 Varsity Dr.
Raleigh, NC 27606-2010

EENC (Env. Edu. of NC)
P.O. Box 4901
Chapel Hill, NC 27515-4901

Extension Forestry
NCSU
Box 8003
Raleigh, NC 27695-8003

NC Big Sweep
P.O. Box 550
Raleigh, NC 27602

NC State University
College of Forest Resources
Student Recruiting / Outreach
Box 8001
Raleigh, NC 27695-8001
(919) 515-5510

NC Division Of Forest Resources
P.O. Box 27687
Raleigh, NC 27611-7687
or local County/District Ranger
(919) 733-2162

National Organizations

Conservation Education Assoc.
416 Wood Hall
Green Bay, WI 54301-7001

EPA
Public Information Center
401 N St., SW
Washington, DC 20460

Izaak Walton League
1401 Wilson Blvd. Level B
Arlington, VA 22209

National Audubon Society
Education Office
Rt. 4, Box 171
Sharon, CT 06069

National Wildlife Federation
1400 1 6th St., NW
Washington, DC 20036-2266

USDA
Forest Service
Woodsy Owl Campaign
P.O. Box 1963
Washington, DC20013

Keep America Beautiful, Inc.
9 West Broad St.
Stamford, CT 06902

National Inst. for Urban Wildlife
P.O. Box 3015
Shepherdstown, WV 25443

NC Divison of Forest Resources Educational State Forests

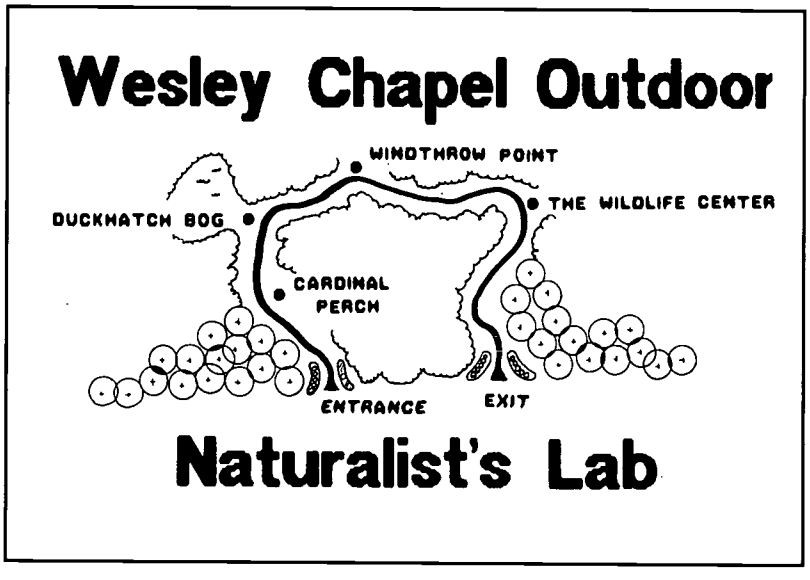
Clemmons
2411 Old US 70
Clayton, NC
(919) 553-5651

Turnbull Creek
Rt. 2, Box 942-A
Elizabethtown, NC 28337
(910) 588-4161

Holmes
Rt. 4, Box 308
Hendersonville, NC 28739
(704) 692-0100

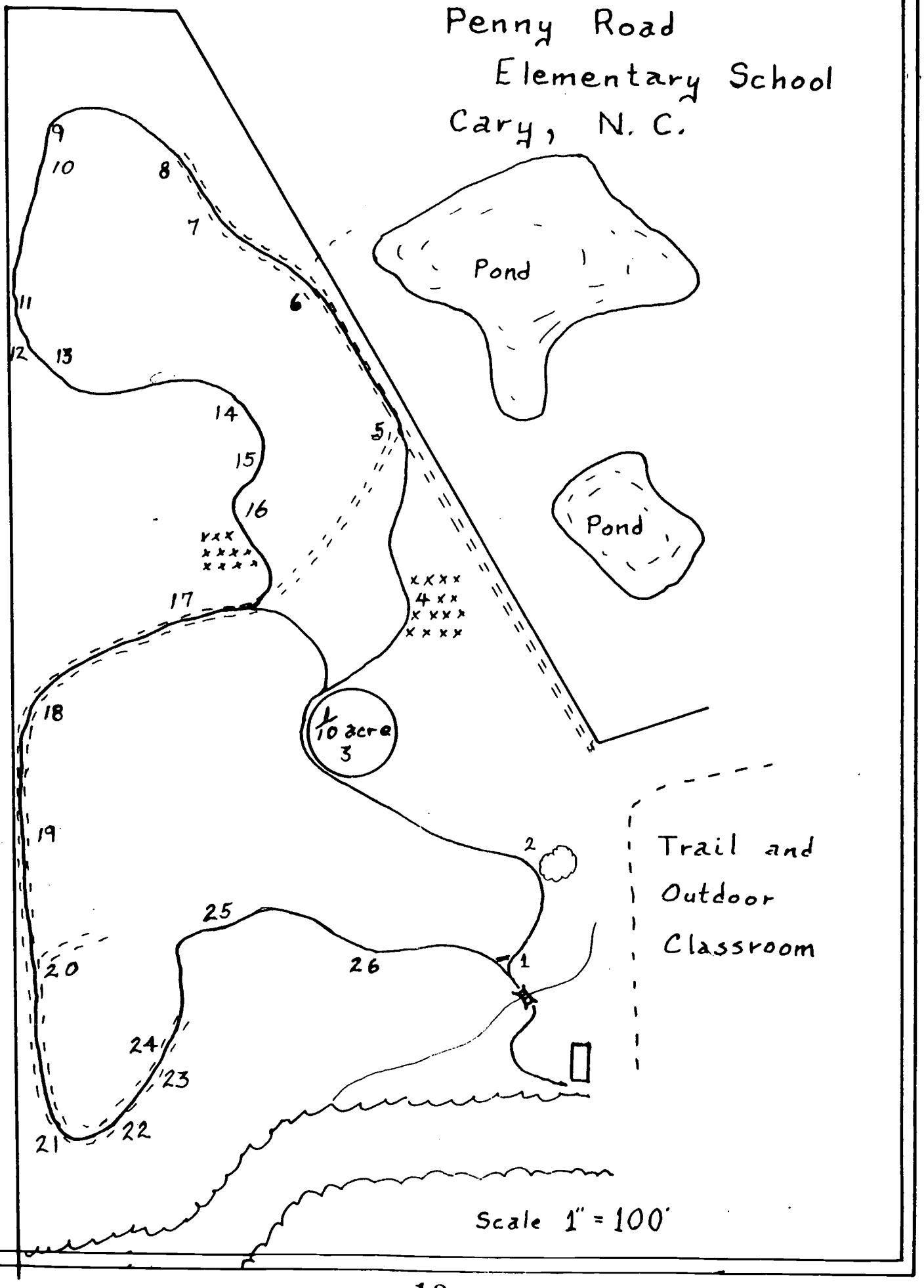
Rendezvous Mountain
1956 Rendzevous Mountain Rd.
Purlear, NC 28665
(910) 667-5072

Tuttle
Rt. 6, Box 417
Lenoir, NC 28645
(704) 757-5608



Wesley Chapel Elementary School, Monroe

Jordan Lake
2832 Big Woods Road
Chapel Hill, NC 27514
(919) 542-1154


Penny Road
Elementary School
Cary, N. C.
Pond
Pond
1/10 acre
3
4
Trail and
Outdoor
Classroom
Scale 1" = 100'
1
2
5
6
7
8
9
10
11
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North Carolina Cooperative Extension Service

NORTH CAROLINA STATE UNIVERSITY
COLLEGE OF AGRICULTURE & LIFE SCIENCES

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