

FOCUS ON EXCEPTIONAL CHILDREN

Outdoor Education for the Handicapped

W. Diane Keller

Providing outdoor experiences for the handicapped is not a new idea. Handicapped people have had many opportunities to participate in camp activities like swimming, fishing, and nature walks. Outdoor experiences, though, are not the same as outdoor education. Although both occur in an outdoor setting, they are not synonymous. Outdoor education differs in that *it is designed to use the outdoors to give students unique, educational experiences.*

This article is about outdoor education, and "outdoor" as used here means outside the classroom, encompassing activities in both urban and wilderness environments. Outdoor education makes available to students the most favorable environment in which the concepts they are studying can be learned. The experiences are hands on and "real"; the stimuli for learning come from the environment. This may be in contrast to the classroom, where experiences often have to be contrived to simulate the actual environment.

Situations in which concepts may best be taught outdoors cross all curricula. Studies may include the interrelationships among organisms in a particular environment (science); local pioneer history (social studies); measurement used in determining volume, area, or weight (mathematics); or geometric design (art).

Outdoor education is still in its infancy as a part of the regular curriculum of today's schools. Attempts to define it often seem vague and confusing because the definitions vary with the educators and schools using it. Outdoor education is defined here as *the teaching of those things in the outdoors that can best be taught in that setting.* For this article, outdoor education will encompass the following ideas:

Diane Keller is a curriculum developer with the Biological Sciences Curriculum Study (BSCS), Boulder, Colorado, currently working on an interdisciplinary science-social studies program for middle school students. She has extensive outdoor experiences working with junior and senior high students out of doors in school situations ranging from rural to urban settings.

The photographs on pages 5-6 were provided by the Emily Griffith Boys' Home, Denver, and those on pages 7-8 are used with permission of the Breckenridge (Colorado) Outdoor Education Center.

- The activities occur outside the classroom.
- Students experience the activities "first hand."
- The environment is the teacher.
- The total educational experience may include pre- and post-activities that may or may not occur in the regular classroom.

This article discusses:

- 1) what outdoor education offers handicapped students;
- 2) what outdoor education offers teachers of handicapped students;
- 3) possible outdoor education programs for the handicapped;
- 4) suggestions for beginning a local outdoor education program.

BENEFITS FOR HANDICAPPED STUDENTS

Outdoor education offers many opportunities for handicapped students. First, *outdoor education can give students an opportunity to understand and learn from a natural environment.* Handicapped students

FOCUS ON EXCEPTIONAL CHILDREN (ISSN 0015-511X) (USPS 203-360) is published monthly except June, July, and August as a service to teachers, special educators, curriculum specialists, administrators, and those concerned with the special education of exceptional children. This journal is abstracted and indexed in *Exceptional Child Education Resources*, and is also available in microfilm from Xerox University Microfilms, Ann Arbor, Michigan. Subscription rates, \$12.00 per year. Copyright 1980, Love Publishing Company. All rights reserved. Reproduction in whole or part without written permission is prohibited. Printed in the United States of America. Second class postage is paid at Denver, Colorado.

Executive and Editorial Office
1777 South Bellaire Street
Denver, Colorado 80222
Telephone (303) 757-2579

EDITORIAL BOARD

Edward L. Meyen
University of Kansas

Glenn A. Vergason
Georgia State University

Richard J. Whelan
University of Kansas Medical Center

Carolyn Acheson
Senior Editor

Stanley F. Love
Publisher

often have difficulty generalizing classroom information to specific situations. Providing a learning experience in the outdoors where it normally happens allows students to learn from a "real" situation that requires no generalization or application to a specific situation because the situation presents itself directly to the student. For example, students studying designs used in modern architecture can go into the urban environment, observe the structures, and see how the designs fit into the settings. This is in contrast to classroom discussion of the buildings. When students observe or participate in the actual event, generalization is not necessary. The learning is direct.

Second, *students can experience the relationship between self and the environment.* Outdoor education activities enhance a sense of awareness and dependency upon the environment. Allowing students to experience this interaction between people and environment can teach in clear, simple terms. Students who are camping learn they get cold or uncomfortable if they do not prepare bedding properly. Thus, they learn responsibility. In nature classes students can observe and learn about animal behavior directly rather than have it described to them. As they let the environment teach, they can learn through a multiple of stimuli. Students can actually move into the physical environment of an animal like a frog. The smell of the watery surroundings, the temperature of the water, the texture of the sandy or muddy bottom, and the other animals and plants all act on students' senses to let them know about the frog and its habitat.

Students in urban settings can also experience the environment through the various senses, and can learn through direct contact. The harshness and stress of a busy city street can be experienced through smell, sight, hearing, and touch. Students involved in map studies can understand them better when actually figuring out and traveling bus routes rather than simulating the experience within the classroom. Although the examples are quite different, in each case the environment is the teacher. The student has the opportunity for direct environmental contact and is allowed to learn from the experiences contained within the particular surroundings.

Third, *outdoor education can remove negative classroom stimuli, replacing these with multiple stimuli conducive to learning.* Many factors limit the success of students within the classroom. Handicapped students

in particular may have a low expectancy for class success. They might have found that their environment demands responses that they cannot give. Being involved in a new, outdoor setting can sometimes remove the negative stimuli and allow the student to learn without the barrier of low self-expectancy.

Often, students learn information outdoors when the same information presented inside a classroom seems vague and difficult to understand. For example, inner-city children sometimes have problems understanding information about plants and animals when it is presented in the classroom, whereas taking them into the outdoors makes the information observable, relevant, interesting, and easy to understand because it allows them to experience and know information rather than to be told about it. And any degree of learning helps reduce the expectancy to fail — a positive cycle.

Students who have difficulty behaving satisfactorily in the classroom benefit especially from the removal of classroom stimuli. This may be most important with students who find the classroom physically restrictive. In the outdoors they have more room to move about, more space to work off excess energy. They can exhibit appropriate social behavior and at the same time learn content and group sharing skills. The author has found being outdoors of particular benefit when working with inner-city, junior-high students. Verbal and physical movement had to be contained while in the classroom; the outdoors allowed more room for responses to be made in a variety of acceptable ways.

A further advantage to removing classroom stimuli is that the outdoor setting offers a multiple of stimuli, and each student has a chance to learn via various stimuli. This may be important for a child who cannot read but who can understand auditory or visual signals. Each person in the outdoors is allowed the chance to succeed in a nonacademic setting. While certain factors, like reading ability, may be limiting in the classroom, these factors may not be so limiting in the outdoors, where individuals often find that in utilizing any of many stimuli, they can perform as well as other people.

Fourth, *outdoor education strengthens social skills*. Many handicapped students lack social skills. Outdoor education experiences can be organized to make mutual dependence necessary for tasks to be performed. If all students in a group lack the total skills needed for success, the handicapping conditions can be less limiting, because all students are needed to contribute to the

welfare of the group. Relays, housekeeping, and team sports are examples of situations in which all students must contribute to achieve group success. Being needed and part of a group gives students positive feedback as they participate successfully in social activities.

Fifth, *outdoor education enhances self-reliance and self-identity*. The environment makes demands and elicits actions. If the proper action is not taken, the behaviors meet with negative reinforcement. If the proper action is taken, positive reinforcement ensues. For example, if insect repellent is not used, the individual incurs insect bites — negative reinforcement. In the outdoors students recognize and experience challenges of varying degrees. They learn to solve problems. As they meet challenges and overcome obstacles, they develop a sense of self-reliance. Self-identity and self-esteem rise accordingly. Being outdoors provides numerous situations for coming together and solving problems. In this setting, too, situations can be manipulated to emphasize what can be done rather than what cannot be done. This allows greater opportunities for developing self-reliance.

Students who have never been outdoors overnight or alone for a time in the woods learn self-reliance in an outdoor setting. Urban children in particular achieve a sense of accomplishment and increased self-esteem from coping with and solving problems in wilderness settings. Individuals who may not perceive themselves as being able to enjoy outdoor athletic activities achieve self-esteem and self-reliance as they learn to function successfully outdoors. Hiking, skiing, sledding, and preparing meals are examples of activities that lead to increased self-esteem and the ability to depend on oneself.

Sixth, *content and problem solving can be successfully learned in the outdoors*. The environment constantly presents problems that must be solved. The problems cannot be ignored, because they do not go away. Food getting, shelter, and getting from one place to another all present challenges. Both individual and group skills can be used in finding solutions. Individuals can decide which skills to use and in doing so decide what is best for them. Regardless of the method chosen, they must solve the problem, because the environment leaves no room for camouflage. The environment does not go away or lessen its demands. Human participants have to develop creative skills in formulating solutions and solving problems.

Seventh, *outdoor education offers recreation to students*. It promotes students' physical and emotional health. The recreation aspect makes learning fun. It contributes to students' growth by providing positive reinforcement. It nurtures a healthy approach to the world.

BENEFITS FOR TEACHERS

Outdoor education also presents advantages for teachers. First, *it provides a setting that aids individualization*. By its very nature, the outdoor experience is individualized. The environment acts on each student in a different way, so the individual learning experiences are unique. Different problems present themselves to each student; and different solutions are found for common situations by different students. Since each situation offers personalized learning possibilities, students can attack problems in their own manner and at their own speed. Thus, rather than having to spend time devising a situation for each student, the teacher is free to facilitate each student's efforts to solve problems.

Second, *barriers between authorities and students are more easily overcome in the outdoors*. Outdoor education helps teachers transcend these "walls" that exist between students and authority figures. It promotes rapport between students and teachers. This happens initially because most handicapped students are relatively unfamiliar with the outdoors. They feel afraid or unsure of success in this new setting. As a result of their discomfort, they look to the teacher for assurance and support. The teacher becomes an ally in solving problems. The teacher is no longer the enforcer of learning, because the environment has this role. The teacher is free to respond to students as a *facilitator* of their success in the outdoors.

If sleeping quarters are not properly prepared, discomfort results. If a meal is not made, there is no food. If the distance to a destination is improperly calculated, the trip may prove unduly long and tiring. The setting often gives negative feedback, and the teacher is needed as a helper and friend in solving problems. Thus, the image of a teacher as an authoritarian figure is reduced, and negative stimuli can be broken down.

Third, *outdoor education tends to stimulate student interest and make students want to learn*. In the out-

doors most students are eager to learn. Many times they are willing to learn the same information outdoors that they have resisted inside the classroom. Outdoors, much information is seen as relevant and interesting. Also, the feedback is immediate.

Knowledge of muscles and conditioning is helpful when hiking several miles. Knowledge of edible plants is important when planning a meal that must be gathered from the land. Information about measurement and map reading is needed to figure distance. Geometric shapes take on importance when constructing a building. Students more readily learn information that is needed and immediately useful. The teacher does not have to provide the motivation, because it is inherent in the outdoor experience.

Fourth, *outdoor education lends itself to student innovation and creativity*. In the outdoors students recognize problems, ask questions, and formulate solutions. They are able to try out many possible solutions in a less restricted setting than the classroom. The outdoors offers more space for movement, more tolerance for noise, and more acceptance of possible error. Student interactions do not have as many limitations as in the classroom. They are free to try various solutions, many of which would be too large, too loud, or otherwise impossible in the classroom. The outdoor setting relieves the teacher from these classroom dilemmas.

As a qualifying note — even though outdoor education has much to offer educators, it is not a replacement for textbook learning. It is, instead, a practical application of what can be learned from books. It can be an effective means of reinforcing what has already or will be presented in the classroom.

EXAMPLES OF OUTDOOR EDUCATION PROGRAMS

Programs may be used with children having a variety of handicapping conditions. The individual programs may vary with the type of individuals served, but certain major outcomes should be expected from each program:

- The individual comes to experience a unity with nature.

- The individual comes to value himself or herself and others as they interact.
- The individual discovers the value of group action.
- The individual learns new skills in caring for his or her own needs.
- The individual learns the satisfaction of solving problems physically.

The total outdoor education experience should include pre- and post-activities that may occur indoors as well as outdoors. Greater interest and understanding of the total experience should result.

Walden-In-The-Woods

The state of New York is one area where leadership has been shown in the field of outdoor education. State funds have been allocated to support programs. Educational experiences in both manmade and natural environments outside of the classroom have been encouraged.

Walden-In-The-Woods is a program that has been successful with learning disabled students. It is a full-time outdoor education program located at the Madden Outdoor Education Center in Kent, New York, serving local school districts with a variety of courses including forest ecology, geology, and aquatic life. Students at Walden-In-The-Woods have experienced failure in the regular classroom. Participants of the program are boys who meet the following criteria:

- The student is able to function in the program without special support services that could not be provided in an outdoor setting.
- The student wants to participate in the program.
- The student is able to participate without endangering the safety of himself or others.
- The student is 11-15 years of age.

The goals and success of this program have been described by Christenson (1977):

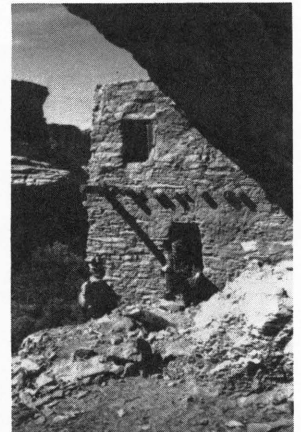
The goal is to provide them [students] with a program in which they will meet with multiple successes in the academic, social, emotional, and vocational areas. Outdoor education is an alternative vehicle we use in order to accomplish this. Past experience demonstrated to us that this program works and is highly successful for some students. To us, it is the right program at the right time for these particular students.

Our outdoor program meets the special needs of most of our students more fully than do the existing school programs in the district for the middle and junior high school age learning disability student, and, therefore, it may be a viable alternative for others to consider.

Emily Griffith Boys' Home Program

Another outdoor education program, which has been successful with emotionally handicapped boys, is provided by the Emily Griffith Boys' Home at Denver, Colorado. The program lasts approximately nine months, full-time, and utilizes outdoor experiences in assisting boys from 13 to 17 years old to learn to function successfully so they later can return to regular school or everyday activities. Outdoor education activities are a major part of the school curriculum because they remove students from the alienated regular school setting, raise students' self-concept, increase their interest in school, and promote better staff-student relations. The activities include situations of relatively low stress such as grassland outdoor experiences, to somewhat higher stress situations including a Colorado mining town simulation.

In a three-week outdoor study of ancient Indian culture in the Arizona desert, students receive opportunities to reflect on ancient and modern culture and learn skills about surviving successfully in their own world at the same time.



Students learn to be responsible for themselves, that they are responsible for much of what happens to them. A high stress winter survival experience is one of the culminating experiences of the curriculum. Backpacking and outdoor living are also part of the experience, along with many other outdoor activities.



Each of the activities presents problems that must be solved by the students — some individually and some in groups.

The experiences sometimes build in the necessity of teamwork for success.



The program also allows for reflection upon what the experiences mean and to allow the students to incorporate this learning into their own lives.



Students in the Emily Griffith program learn to solve problems under stress situations of gradually increasing difficulty. Each of the situations illustrated provides challenges in the outdoors that must be met by the students. The teaching staff views these experiences as an integral part of the educational process. Toward the end of the second semester, the students must demonstrate that they have successfully learned how to function in an acceptable manner in society. They must show that they have learned to assume responsibility for their own actions and have acquired the ability to determine their own direction.

Outdoor education experiences play an important role in helping students acquire the skills that will enable them to return to the regular world. Gains that have been attributed to the outdoor education program include increased responsibility for self, increased reading and comprehension skills — and, even, better penmanship skills (Christenson, 1979).

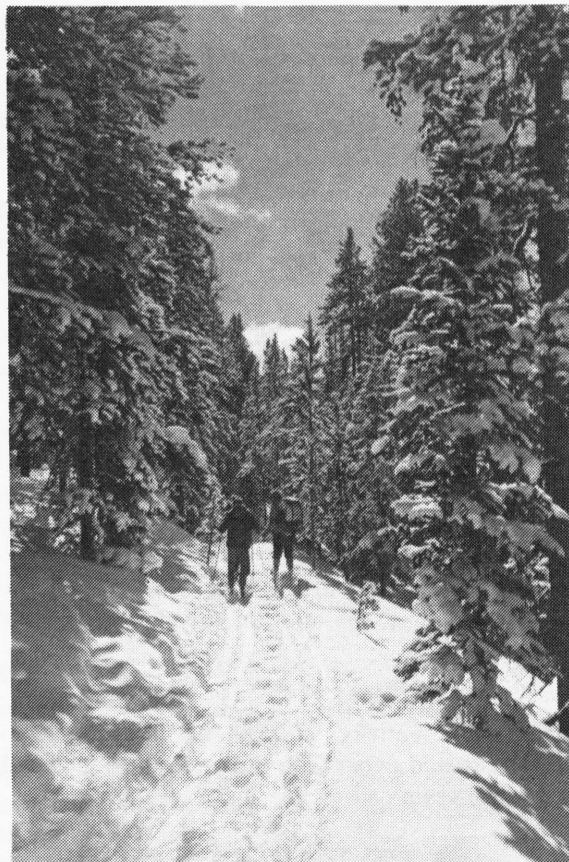
Breckenridge Outdoor Education Center

School districts that are not able to provide the necessary facilities for the outdoor education programs they would like sometimes contract with private institutions for such services for their handicapped students. The Breckenridge Outdoor Education Center (BOEC) in Breckenridge, Colorado, is a private institution that has been successful in working with mentally retarded and with physically handicapped students. BOEC offers

a variety of courses planned for all seasons. Some of these are skiing, skating, and camping in winter; and horseback riding, swimming, and canoeing in milder seasons. Although school districts may contract with BOEC for outdoor activities, other handicapped persons of all ages also participate in some of the courses. This offers a good opportunity for increased interaction among participants.



Ski touring is available for the visually handicapped in the winter.



Specially developed trails are used for ski touring. Deep paths are made so that direction can be determined easily.





Another winter activity, pulk skiing, is available for mobility restricted persons. A pulk is an orthopedically designed Norwegian sled.



Trained staff is available for working with individuals of varying age ranges and of various handicapping conditions.

BOEC uses wilderness experiences as an educational vehicle whereby people learn about themselves. The experiences help reduce social and physical isolation,

and they enhance participants' independence and increased self-concept.

Programs like those of the Emily Griffith Boys' Home and BOEC might be used by school districts that are unable to provide adequate services for reasons involving finances, appropriate staff, adequate sites, or housing. Districts might also choose such programs to enhance interaction among various age groups.

SUGGESTIONS FOR DEVELOPING AN OUTDOOR EDUCATION PROGRAM

Probably the most common outdoor education program serving handicapped populations would be found in the mainstreaming situation in local school districts. As outdoor education becomes more a part of regular curricula in school districts across the United States, educators who are unable to contract with a private agency and who do not have an outdoor education program within their own school system might benefit from the following suggestions in developing programs to meet their own circumstances:

1. *Use immersion activities.* Completely involve the student in the environment to be studied. This helps remove negative barriers that handicapped students often experience in educational activities. Provide adequate time for the immersion experience to occur.
2. *Let the environment do the teaching.* In outdoor education programs, teachers often find themselves in the position of allies. As students request assistance, teachers can facilitate the learning experience while letting the environment act as the teacher.
3. *Pace the activities for the appropriate ages and handicapping conditions of the students.* This helps ensure success and positive learning experiences.
4. *Build in success.* Be sure each student has a number of positive experiences. This is beneficial in overcoming negative self-image and self-confidence problems.
5. *Consider the outdoor experiences as an integral part of the educational curriculum,* complementing the pre- and post-academic activities.

Factors that should be considered when planning an outdoor educational program include cost, salaries of personnel, food, insurance, transportation, and features

of the site — its closeness to populated areas, distance from the school, accessibility, its topography, possible hazards to health, and the physical facilities.

The classroom teacher's role is essential to the success of an outdoor education program. The students should receive careful preparation prior to the outdoor experience. Planning is important to assure continuity between the classroom and the outdoor experiences. Ideas the teacher might discuss before the class goes outdoors are, in addition to the outdoor activity itself:

- cooperation
- using the senses effectively
- how the outdoor experience relates to classroom learning
- rules
- individual and group responsibilities.

If possible, the classroom teacher should be personally familiar with the outdoor setting so that the pre-experiences in the classroom can better complement the outdoor activities. And attention should be given to the possibility of interdisciplinary studies that could include social studies, language arts, science, mathematics, physical education, home economics, industrial arts, art, drama, music. The teacher should always be aware of the potential for utilizing activities for multiple purposes. After the students return to the classroom, they should receive sufficient additional experiences to complement the outdoor activity and for reflection on the total experience.

To assist in planning and implementing an outdoor education program, national organizations and resource people within the community can be of assistance. Possible sources for aid include:

- American Camping Association (Bradford Woods, Martinsville, IN 46151)
- Boy Scouts of America (2 Park Avenue, New York, NY 10016)
- Bureau of Outdoor Recreation (Department of the Interior, Washington, DC 20025)
- American Red Cross
- Local chapter of the March of Dimes
- County Health Department
- Parks and Recreation Department (City or County)
- YMCA; YWCA
- Civic organizations
- and parents.

Suggested Outdoor Activities

An outdoor education program could encompass a variety of activities that are compatible with the indoor academic program. General topics might include:

Social Studies — ancient culture of the area; local industries like logging, mining, or agriculture; local history; local customs; geography of the area.

Science — natural history of the area; weather; geology; astronomy; archaeology.

Mathematics — maps; measurement (volume, distance, weight); using a compass; geometric shapes; basic mathematical skills (addition, subtraction, multiplication, fractions).

Language Arts — poetry; composition; logs or journals; story telling; ballads and local folk tales.

Physical Education — hiking; survival skills; first aid; outdoor safety; good body conditioning; outdoor sports.

Homemaking — cooking and meal planning; choosing proper clothing for outdoor conditions; caring for clothing when outdoors; cleaning cooking utensils properly; housekeeping in living quarters.

Industrial Arts — using tools in the outdoors properly; taking care of tools; safety; strength of materials; durability of materials.

Drama, Art, Music — plays and skits; singing; painting and sketching; using natural materials for crafts; assuming the role of pioneers for a day.

Activities should be geared to the age and the handicapping condition(s) of participants. If the outdoor education program is to continue throughout the entire school career of the student, common themes can be introduced and built upon in accordance with the various grade levels. For example, "environmental interactions" might be a theme throughout the total program: Kindergarten or early elementary children might participate in activities that principally make them aware of the environment. Late elementary or junior high students might examine and analyze the various

parts of the environmental system. High school students might concentrate on what is happening, how humanity influences that interaction, and how it affects them individually. The basic theme is constant throughout the entire program, but is more fully developed as the child progresses in grade level and ability.

Elementary Grade Activities

Suggested activities for students in the elementary grades can focus on the following (interdisciplinary topics should be used when possible):

Social Studies — pioneer tools and customs; Indian homes and customs; simple maps; local business (e.g., agriculture, mining); local almanac tales.

Science — senses (listening, feeling, smelling); identifying birds as to color, shape, size, sound, nesting habits, how they fly, etc.; types of soil; animal homes and tracks; various kinds of seeds.

Mathematics — counting legs on a spider, petals in a flower, needles in a pine cluster, points on a leaf; shapes.

Language Arts — telling local legends; acting out animal behavior (e.g., fox, frog); pretending to be a tree; reciting a short poem; describing a living thing observed in nature.

Physical Education — walking a log; taking a walk along a nature trail; jumping over stacked logs; playing volleyball; running in a relay.

Homemaking — setting a table; replacing utensils after they are clean; observing various types of foods prepared; trying one edible wild food (teacher assistance needed); making a bed.

Industrial Arts — observing pioneer tools, Indian tools, modern, local tools; making a tool from a twig or stone; cleaning and putting away a tool properly.

Drama, Art, Music — acting like a pioneer for two hours; drawing or sketching something from nature; singing songs; observing shapes or sounds in nature; making a collage.

Junior High Activities

Following are some examples of subjects and activities suitable for students in late elementary or junior high school:

Social Studies — visiting an old cemetery; acting as a pioneer one day; Indian lore and customs; local topography; historical land use of the area.

Science — local plants and animals; aquatic studies; night hikes to study nocturnal animals; plant and animal communities; population counts of local plants and animals.

Mathematics — measuring diameter and circumference of trees, depth of local water, size of buildings, distance between two objects (e.g., a lake and the sleeping area); calculating the amount of water needed for the evening meal.

Language Arts — writing a short story about something observed; writing a poem; keeping a journal; telling about a local custom or about someone who once lived in the area (could be fictitious).

Physical Education — relay race; volleyball; morning hike; swimming; a long hike with the group.

Homemaking — meal planning; local edible vegetables; foods grown by local people; housekeeping chores (sleeping area, kitchen area); estimating food needed for group for one meal.

Industrial Arts — fashioning an Indian tool; using only pioneer tools for one day; learning safety rules using pioneer tools; building a small bridge of stones or logs.

Drama, Art, Music — singing; collage of natural materials; painting with natural dyes; skit; sounds and shapes in nature.

High School Activities

High school students might benefit from the following:

Social Studies — visiting local law enforcement agencies; examining various different buildings with unique histories or features; comparing food prices in two stores; studying building shapes.

Science — wilderness trip; astronomy facilities; wild life of the area (compared with home environment); constructing an imaginary animal home; observing how humans have affected and changed the environment.

Mathematics — using a compass and following a trail; using a map to follow a trail; estimating then measuring the length of 10 different items; estimating and measuring the weight of trash from one meal; a geometric treasure hunt.

Language Arts — keeping a journal; writing a short story about something observed; writing a poem; making a list of everything seen alive in nature within 30 minutes; writing a letter home during a several-day camp experience.

Physical Education — wilderness trip; relay scavenger hunt; pitching a tent; building a campfire; following a cross country trail.

Homemaking — preparing one meal as a team; cleaning the eating area after a meal; participating in cleaning up the sleeping area; making an eating utensil from a natural object.

Industrial Arts — demonstrating knowledge of safety with tools; making a meal or tool using materials available to Indians; examining or discussing use of blacksmith in the area; observing and using modern tools for gathering water or needed chores.

Drama, Art, Music — participating in a play about the activities for the parents (post-activity); making a craft gift; singing; painting using native materials; sketching natural shapes and designs.

Schedules, Equipment, and Preparation

Because most school districts that presently have outdoor education programs focus on a one-week concentrated outdoor event, this is the model used for the

following examples of schedule, equipment, and checklist. Another model that should be seriously considered by schools is the integration of outdoor activities into the regular curriculum throughout the school year. With this model students receive intermittent, continuing reinforcement for learning, and the outdoor experiences are tied in closely with academic studies in the classroom.

Outdoor education schedules must be carefully planned to allow adequate time for the planned group activities, as well as for time alone. Large groups should be divided into smaller groups to facilitate personal interaction. Individual group schedules may have to be staggered to ensure the opportunity for each individual to participate in all of the activities. A format for a possible several-day outdoor experience in wilderness surroundings is given as Figure 1.

Following is a suggested equipment list to give each student before a several-day camp experience, such as the one given in Figure 1.

Bedding	sleeping bag or a couple of blankets
Clothing	jeans (two or three pairs, old) heavy and light shirts two pairs of shoes suitable for the outdoor climate hat or cap daily change of socks and underwear warm jacket or sweater raincoat pajamas gloves and scarf (if cold weather)
Toilet Articles	toothbrush and toothpaste soap towel and washcloth lip balm sunscreen comb toilet paper deodorant
General	flashlight notebook and pencil

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
7:30 a.m.		Elementary: Rise and prepare for breakfast ----- Jr. High & High School: Rise and prepare breakfast -----				
8:00		Elementary: Breakfast ----- Jr. High & High School: Breakfast and Clean-up -----				
8:30		Elem.: Animal Homes Jr. High: Orienteering H.S.: Animal Architecture	: Shapes in Nature : Make Natural Dyes : Aquatic Life (microscopes)	: Water Life : Edible Plants : Poetry/Story Writing	: Forest Life : Measure Trees : Pioneer Life For a Day	Prepare to Leave
10:00	----- Free Time and Snacks -----					
10:30		Elem.: Plant Homes Jr. High: Map Making H.S.: "Camouflage" Simulation Activity	: Nature Rubbings : Indian History : Immersion Activity — "Be" a Frog or Aquatic Animal	: Immersion Activity — "Be" a Water Animal : Make a Pioneer or Indian Meal : Crafts/Dyes/Textures	: Measure Tree Sizes : Aquatic Study : Make and Use a Pioneer Tool	Leave for Home
12:00		Elem.: Lunch and Nap ----- Jr. High: Lunch and Free Time ----- High School: Lunch Preparation and Clean-up -----				
1:00 p.m.	Orientation + Elem.: "Sounds" Walk Jr. High: Nature Walk H.S.: Nature Walk	: Count Kinds of Plants : Visit Local Cemetery : Designs in Nature	: Count Petals in Flowers : Study Indian Tools and Food : Build a Simple Rock or Log Bridge	: Edible Plants : Orienteering : Geometric Shapes	: Leaf Prints : Crafts : Pioneer Games	
2:00	----- Free Time and Snacks -----					
3:00	Elem.: Collage of Natural Things Jr. High: Habitat Study H.S.: Habitats & How Humans Alter Them	: Natural History of Area : Pioneer Study : Manmade Alterations in Local Geography	: Nature Stories : Indian Artifacts (archaeology) : Physical Education Activities	: Textures in Nature : Social Service Project : Population Study	: Pioneer Life : Craft Fair : Write a Pioneer Skit	
5:00	----- Help Prepare Dinner, Eat, and Clean Up -----					
7:00	Elem.: Songs Jr. High: Scavenger Hunt H.S.: Treasure Hunt	: Star Gazing : Pioneer Games & Square Dance : Songs	: Folk Dancing : Indian Games : Story Telling	: Indian Games : Astronomy (telescope) : Square Dancing	: Pioneer Games : Campfire Songs : Skit	
8:00	Elem: Prepare for Bed -----					
8:30	Jr. High: Prepare for Bed -----					
9:00	H.S.: Prepare for Bed -----					

Adjustments can be made in the time allotted for food preparation, eating, and clean up, depending upon the age group and handicapping conditions.

Figure 1. Format Example for Outdoor Experience

Optional bird or animal books
 camera
 compass
 binoculars

Do not bring: radio
 money
 knives
 matches

Teachers should prepare their own equipment list to include any special supplies such as props and/or costumes for skits, art supplies, identification keys, measuring instruments, microscope, athletic equipment — any equipment and material needed for the planned activities. Teachers might also take extra bedding or clothing to cover possible lacks in the students' provisions.

Following is a teacher checklist that should be consulted before leaving the school:

Permission Each student should have turned in a
 Slips signed parental permission slip before
 leaving for the outdoor trip. The infor-
 mation should include physician's name
 and phone number, special medication,
 allergies, or specific medical problems,
 and a phone number for emergencies.

Equipment In addition to equipment needed for the
 planned activities, extra recreational
 equipment might be included for volley-
 ball, softball, badminton, and similar
 sports.

First-aid A well supplied first-aid kit is essential.
 Kit Extra sunscreen, lotion, insect repellent,
 lip balm, and similar items could also
 be part of the kit.

Special Any special medicines for students should
 Medication be labeled and packed carefully, and ac-
 companied by appropriate instructions.

Other items should be added to this list to fit the individual programs.

After the outdoor education activities have been completed and the students have returned to the classroom,

the teacher should provide adequate follow-up activities. Without proper reinforcement, the value of the outdoor experience may be lost. This is especially true if the home or community environment does not provide reinforcement for behavior changes that took place during the outdoor experience.

Urban Outdoor Education

Although the examples given here for outdoor activities have centered on wilderness or nature type experiences, these are not the only, or necessarily the most effective, types of outdoor activities. Urban areas offer many opportunities for outdoor education, including interdisciplinary studies. A few possible topics are:

structural design	law enforcement/ the legal system
urban pollution (air, noise, water)	museums
urban land use	multi-cultural experiences
effect of urban living on people	

Evaluation

Evaluation is an important part of an outdoor education program. It provides feedback about the value of the curriculum, strengths and weaknesses of the program, and its effects on the students. Evaluative techniques might include surveys, anecdotal records, sociograms, interviews, comparison of pre- and post-academic and behavioral achievements.

SUMMARY STATEMENT

The contribution that outdoor education can make to education is currently being recognized by many educators. All students have the right to opportunities that enable them to develop their potentials as much as possible. The possibilities that outdoor education offer to handicapped students should not be overlooked as educators strive to plan more effective educational designs.

REFERENCES

- D. Christenson. Personal interview, Emily Griffith Boys' Home, Denver, 1979.
- G. Christenson. Walden-in-the-woods. *Communicator* (Journal of the New York State Outdoor Education Association), Fall-Winter, 1977.
- Werber, B. Personal interview, Breckenridge Outdoor Education Center, 1979.

CLASSROOM FORUM

Beverly Dexter
Lynchburg College

Several of my friends in regular primary classrooms have animals for the children to care for and learn from during the year. Do you think this would be a good idea for my special education classroom? Would it be worth the effort? What animals make the best classroom pets?

Classroom pets can be a source of both learning and pleasure for children and teacher alike. Before you rush out to your local pet store, though, spend a few minutes answering the following questions:

1. What will be the advantages of having a classroom pet?
2. What will be the disadvantages of having a classroom pet?
3. Which animal(s) would be best suited for my classroom?

In arriving at an answer to the first question, keep in mind that the advantages of having a classroom pet depend on your *purposes* for obtaining an animal. One important gain to be derived from having a classroom pet is the responsibility children will learn in taking proper care of it in the classroom under a teacher's direct supervision. This responsibility lends itself nicely to learning other independent skills for use either in school or at home. The pride a child takes

in being more responsible can be realized only through experiences of independence and self management. Being able to feed the pet and/or take care of its other needs could become privileges that children earn through demonstrating that they are capable of being responsible for other tasks. (The teacher must supervise care and handling of the pet, of course, and make provisions so that each child has the opportunity at one time or another to "take charge" of the pet for a specific period of time.)

A second advantage of having a classroom pet is the sharing and socialization skills required of the children in taking care of it. Duties can be shared by "teams" of children, with cooperation being an integral part of the total responsibility. In the case of a hamster or gerbil, for example, one child might be in charge of emptying the tray and replenishing it with fresh bedding (cedar chips, old newspapers that children might be asked to bring from home, etc.) while another child might be given the task of cleaning and changing the food and water dishes. These tasks could be done while a third child is caring for the animal outside of the cage or keeping an eye on it in a temporary cage or cardboard box.

A third advantage of having a classroom pet is that these animals can be used for language experience activities or other academic lessons. The children could tell or write stories about the pet, as a reading activity. For math, the initial cost of the pet might be added to the upkeep cost and then compared to the overall cost of other animals or pets kept at home. Which store has the best prices for this same animal? For the cage? The food? What if the class should decide to buy a second pet? How would this cost compare to the current expenses?

Advantages for science studies are inherent, such as in the children being able to directly observe eating and sleeping habits. Breeding an animal merely to teach reproduction and birth processes is a cruel aspect, however. One must keep in mind the long-range effects of having newborn animals in the classroom, particularly in the case of mammals and egg-hatching creatures. What will become of these baby animals once they become adults? Who will be responsible for finding them good homes? Unless you are prepared for these eventual consequences, only one such animal at a time should be kept in the classroom. Presupposing an existing pregnancy, potential homes for any baby animals should be mentally assured before acquiring the pet.

Other advantages could be listed, too, but the ones discussed above are those that generally encourage teachers to invest in a classroom pet. Additional advantages might be discovered by asking the children what *they* think are advantages of having a pet in the classroom.

Among the disadvantages, the major one is that someone (namely, the teacher) will have to provide continual care of the animal over weekends and during holidays. Transporting the animal, cage, and food may become a burden, especially if you commute some distance or are in a carpool. Also, the pet needs to be in a safe place after arriving in the temporary quarters in your house or apartment.

A second disadvantage would become apparent if a child in your classroom is allergic to animal fur, or even the bedding kept in the bottom of a cage. This possibility should be checked carefully before accepting any animal into the classroom. Also, if a child is especially fearful of certain animals you should do whatever possible to assuage those fears and to prevent further aggravation by other children's teasing him or her with the animal. In any case, a period of adjustment will be needed for both the animal and the children.

Careful planning and preparation are necessary before bringing any animal into the classroom. You should be knowledgeable about the animal you select and should teach the children a little about the animal before its actual presence in the classroom. If the animal is going to live in the classroom, you need to become familiar with its needs for food, water, exercise, room temperature, rest, living space, sanitation, and related environmental concerns.

Another potential disadvantage is the long-term cost of keeping a classroom pet. Initially, the animal may be obtained free — but then come the costs for special cage or container, feeding and watering devices, the food itself, bedding or floor cover, and so on. Although these costs are relatively low, they are still additional costs for which the teacher must assume responsibility.

Other disadvantages may come to mind as you read this, but if you feel the advantages outweigh the disadvantages in your particular situation, you are ready to ask yourself which animal is best suited for your classroom. Among the more popular types of classroom pets are rodents (gerbils, guinea pigs, hamsters, rabbits, mice and rats), fish (usually goldfish or guppies), birds (parakeets and canaries), and reptiles (chameleons, snakes, and turtles). The animal you select should be

determined by your own specific needs and objectives in the classroom, tempered by the advantages and disadvantages you foresee in having a classroom pet. Specific information about various animals may be obtained from the local library, humane society, or pet store. If your community has a zoo nearby, its caretakers might be able to provide you further information.

Investigating possible animals as classroom pets could become a class project or study unit, with field trips and guest speakers or even "guest visits" by animals themselves. Careful investigation and planning for selection of the right animal are necessary steps to ensure development of humane attitudes and respect for all living things, whether in the classroom, in the home, or in the wild. As a by-product in teaching children about these animals, you also can teach them about kindness and consideration — important to the life skills learning of all children.

With inflation the way it is now, I want to make sure I'm getting the most for my instructional dollar. How can I be certain that the materials I order are exactly what I want?

Although most of us like surprises once in awhile, one of the last places we want them to happen is in the area of instructional materials. Publishers generally are well-meaning in their intent to present honest synopses of their materials in their catalogs and promotional literature, but they also are committed to selling their products in the market. Therefore, it pays (literally) to have several sources of feedback when ordering instructional materials.

Ideally, the best way to determine whether or not a material is appropriate and worthwhile for your students is to actually try out the product on specific students. Many companies allow you to obtain examination copies of certain materials and keep them for a certain period of time, say one to three months. If you can directly contact the sales representative for your area, he or she probably will be happy for the opportunity to demonstrate appropriate products for a group of teachers. This benefits both the representative and you, since you can actually see the material and give the representative a chance to answer pertinent questions before you decide to give it a try. In talking with the representative initially, you should outline your specific needs before he or she loads

up the car with the entire inventory of sample materials—and wastes both of your time unnecessarily.

Many times, product demonstrations can be incorporated into teachers' meetings or teacher work days early in the school year. A suggested block of time for such a meeting is one hour per representative, but this time frame should be flexible because both the teachers and the sales representative may discover additional areas that should be investigated by both sides.

When trying out instructional materials with students, try to keep an objective view of both the product and the results you obtain through its use. Is this a material that you could make yourself in terms of both cost and time efficiency? If you think this might be the case, investigate the actual cost and time in self-creating the product—keeping copyright laws in mind and making sure that you don't infringe upon authors' rights.

This leads to a second question: Could I efficiently develop my own version of this material to better meet the needs of my own particular students? Too many times, instructional materials meet only partial needs of the student and their teachers. After all, the *teacher* teaches, not the material. Thus, most instructional materials need to be adapted somewhat during the course of instruction to meet students' individual learning needs. Exceptional students may have certain characteristics in common, but each child brings his or her own learning style that may not be exactly like that of other students with the same exceptionality.

A good evaluation tool for instructional materials may turn out to be your students' "unbiased" opinions. Ask them what they like about a certain material, what they don't like about it, and what changes they would make in it if they were going to continue using it. You may be surprised at the authority with which students will speak out about the materials they are using. Let them be the judges of whether the material is "motivating," "easy to use," "helpful," etc. Depending on the level of your students, this process may consist of an informal discussion about their feelings concerning the material, or it may be a survey of their opinions presented in written form. Whatever the communication method, if the students are going to be the primary consumers of a material, they should at least have a voice in the selection of it.

The major caution here is that you must exercise pure common sense when reviewing the material with the students. They may instantly prefer an item because it is flashy or colorful, so your questions regarding its func-

tion and utility should be structured to bring out their objective views as well as their subjective ones. Few instructional materials have been fully researched as to their usability with the students for whom they are intended. Rather, curriculum experts review the material and pass judgment on it based on their knowledge of the content area and general appeal of such materials to children. After the material is on the market, teacher results and reactions are used to validate its usefulness.

Another important question to ask yourself concerns the *reusability* of the material. Can it be used with several students who have similar educational needs? Can it be used both now and in the future, or will consumables have to be reordered with each new use? If only portions of a kit may be reused, what will the long-term expenses be after the initial purchase?

Also, teachers must be aware that their needs in any teaching situation will change in the future. A material that seems almost useless now may be just the thing required at some future date. By keeping a file of examined, reviewed, and recommended instructional materials, the teacher will have a dependable reference for the future. This record can be kept on index cards, in a notebook, or in a manila folder. Use of index cards is most highly recommended since it offers more versatility and easier manipulability than other formats. Subject headings can be made to separate the topic/content areas, and each material can be summarized on one index card. If possible, including a picture and/or catalog description is helpful as a reminder of what the material looks like. Order information, such as unit price, company address, etc., also should be retained. A brief list of its strengths and weaknesses, along with teachers' reactions to the overall utility of the material, are essential for each instructional material entry kept on file. A final *must* is a brief learner/user description in the teacher's own words (regardless of what the catalog description may say).

To add to the efficiency of such a system, several teachers could not only review and discuss the materials being evaluated, but keep a joint file of materials thus reviewed. A central instructional materials "bank" might be developed for separate grade levels or developmental levels within the curriculum. Primary teachers might maintain their own filing system while intermediate level teachers develop theirs. By sharing the contents of these files, teachers can open lines of communication among and between themselves—sharing knowledge, learning, and instructional techniques.