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Albuquerque Public Schools Teacher's Guide to Outdoor Education.
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Preparation of teachers and students for their one-day trip to the Albuquerque Public Schools' Outdoor Education Center is outlined. Topics covered include: orientation program; general preparation considerations; course of study; map of site; vocabulary; activity evaluation sheet; and a supplementary book list. Geology, biology, safety procedures, time schedules, supplies, Board of Education Policy, and follow-up activities are among the items discussed. (SW)

ALBUQUERQUE *Public* SCHOOLS

TEACHER'S *Guide*

TO

OUTDOOR EDUCATION

Jan 1968

[illegible]

[illegible]

[illegible] Outdoor Education Center is an innovative program supported [illegible] Elementary and Secondary Education Act of 1965. The first [illegible] in [illegible] of 1967 and classes began to make use of the site [illegible]. Approximately [illegible] students from the public schools and additional [illegible] schools, Boy Scouts, Girl Scouts, 4-H clubs, and retarded [illegible] have made use of the site for educational purposes. Located on a [illegible] at the 5000 foot level, the center allows students to study natural phenomena [illegible] contact and observation rather than by descriptions read in a classroom. [illegible] that studying conservation and the relationships of plants and animals in [illegible] has led to much greater discussion and retention of knowledge than had originally [illegible] possible.

[illegible] present program consists of one day field trips to the site for exploratory purposes [illegible] and earth sciences. On-site facilities are presently under development or in [illegible] which will allow a resident program. Operating on a voluntary basis, this part [illegible] would enable students and teachers to spend several days at the site while [illegible] depth of study in selected subjects. Laboratory experiences and library [illegible] would permit the student to explore his interests to the extent of his capa[illegible]. The program of one day field trips would continue to reach a cross section of [illegible] in the Albuquerque Public Schools by scheduling the upper grade level of all [illegible] schools within the system. Expansion of teacher education in the use of [illegible] is envisioned as an integral part of the program. The long range plan is [illegible] the use of school campuses, neighborhood parks, local community re[illegible] and the Outdoor Center into the curriculum to enhance the learning process to [illegible] child is exposed. The desire is to use our often neglected natural resources [illegible] a better educational program to reach and assist each child in attaining the [illegible] educational experiences.

FOREWORD

The purpose of this guide is to prepare the teacher and students for their one-day trip to the Albuquerque Public Schools' Outdoor Education Center. Our desire is to stimulate student learning through use of facilities and programs which are not available in the classroom. If you desire additional information, please contact:

Outdoor Education
Albuquerque Public Schools
724 Maple Street, S. E.
Albuquerque, New Mexico 87103

842-3662.

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CONTRIBUTORS

The Outdoor Education Department is grateful to the following members of the Outdoor Education Advisory Committee for their help, time, and effort in contributing to the program:

Name	Grade	School
Sister Audrey	5	San Ignacio
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Jean Newton	5	Matheson Park
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John Rosinski	6	MacArthur
Sue Scarritt	6	La Mesa
John Cox	Outdoor Education	Central Office
Jack Meloy	"	"
Vera Snyder	"	"

It is hoped that through the efforts of this committee, our program will better fit the needs of the classroom teacher and the children. Since Outdoor Education in Albuquerque is in an introductory stage, evaluation by the participants is sincerely requested. Therefore, if you have any further suggestions or criticism, please feel free to contact any member of this committee.

I

ORIENTATION PROGRAM

Following is an outline of the program we plan to present to your students as an orientation to the outdoor education area. This will be presented as a slide discussion of approximately one hour's length depending upon the number of questions. We would like to encourage questions as our desire is to stimulate interest on the part of the students in outdoor application of the sciences. We would also like to talk with the teacher at this time concerning any questions you may have.

A. Site in the Sandias

   1. Trails, aerial view

   2. Behavior, suitable clothing, lunches.

B. Geology

   1. Definition of Geology, areas included in the study of geology and its importance.

   2. Layers of rock making up the Sandias.

      a. The geologic history of the area as indicated by the types of rock.
      b. Rock faulting and the formation of the Sandia Mountains.
      c. Other forces at work on the rock.

C. Biology

   1. Life zones

      a. Relationship between the elevation, temperature, and moisture and its affect on plant life.
      b. The inter-dependence of the plant and animal life and the life zones of the Sandia Mountains.

c. The types of plant and animal life to be expected on the trip.
b. Conservation of the area, (the effect of sample collecting, heavy traffic, etc.).

D. Discussion

1. Questions by students

2. Reminder about equipment not to be taken to the site: radios, walkie-talkies, knives, glass containers, etc.

3. The education specialist will remain if the teacher wishes to discuss anything at that time, such as:

a. Stimulate and develop interest in the coming trip with pictures, books, films, and discussion of New Mexico wildlife, geology, ecology, etc.

b. Talk to the outdoor education teacher before or after orientation concerning discipline and the role of the teacher on the trip.

c. Check students who have possible health problems to see that any needed medication is carried along for asthma, allergies to insect bites, etc.

d. Invite the principal and one or two parents to assist on the trip if desired.

e. References: A vocabulary and reading list are included in the back of the guide.

f. Discuss manners and respect for property with the children.

IV

GENERAL PREPARATION CONSIDERATIONS

Suggested Time Schedule

8:15 to 8:45 - Preparation to depart
8:45 to 9:30 - Travel
9:30 to 11:30 - Arrive and begin morning sessions
11:30 to 12:30 - Lunch, rest and recreation
12:30 to 2:30 - Afternoon session and prepare to return
2:30 to 3:15 - Return

Safety

Bus safety procedures will be given by the outdoor specialist or bus driver before departure.

Safety procedures in group hiking in rocky, hilly, and wooded terrain will be given after arrival at the site.

In order to prevent students from getting lost, a general orientation of obvious land marks and site plot will also be given upon arrival.

Since we are not in a classroom and the students are usually excited, a more relaxed atmosphere prevails. HOWEVER, due to the nature of the setting and the pontential for injury which does exist, strong discipline is often a matter of necessity. The classroom teacher is familiar with the students and has established disciplinary procedures for the class, therefore, the teacher is primarily responsible for class behavior. The outdoor specialist will assist and cooperate.

Problems sometimes occur as a result of classes being "strung out" along trails. At these times, all adults need to help control the group. Control must also be used to ensure that living phenomena will not be damaged at the site.

Cases of Emergency

Section 6.22 of the Albuquerque Public Schools handbook of policies will govern the procedures to follow in cases of emergency involving serious and minor injuries.

Parent permission slips will be carried to the site in order to provide quick referral to parent's name, address and phone number.

Telephone service will be handled by the Sandia Ranger Station or, if the bus is equipped with a radio, the bus driver will call Central Administration to contact our office, 842-3662, to relay the message to the parents.

First Aid

Regular school policies will also apply concerning the application of first aid to an injured student.

General first aid supplies will be carried to the site to handle all first aid treatments.

Insurance

Individual policies which the student has taken out during the school year will also apply since this trip will be considered a part of the regular school program conducted during school hours.

Collecting Specimens

If we are to keep our outdoor education site in its present natural condition, provisions will have to be made to keep it this way or else the forces of "Human Erosion" will quickly transform 130 acres into a facsimile of a "Picked Chicken Bone". We will endeavor to teach man's effect upon and responsibility for his environment.

We will have to exclude the gathering of specimens for individual

class collections, and start developing a central exhibit to display sample collections for the use and benefit of all outdoor education participants. If collections are desired, there are innumerable areas around Albuquerque where such collecting may be done (with proper permission).

Transportation

Bus travel to and from the site will be provided and arranged by the Outdoor Education Department.

Parent Permission Slips

The consent of the parent or guardian is necessary prior to any excursion.

If a parent does not want his child to go on this trip, consult with your principal on what action will be taken to handle this matter.

Food, Water, Clothes and Supplies

1.	Food	Each child will bring a sack lunch. The lunch should consist of foods that do not need refrigeration.
2.	Water	Each student should bring adequate water in some type of container (Canteen, plastic bottle, thermos, etc.) other than glass.
3.	Dress	Students should wear comfortable clothing for hiking and climbing. No dresses, shorts, cut-off trousers or peddle-pushers should be worn. A pair of sturdy shoes and thick socks should be worn to prevent stone bruises and blisters. It is suggested that students should carry a sweater or jacket in case of high or cold winds. Boots or galoshes are especially desirable during muddy and cold weather.
4.	Optional Equipment	The student should not overburden himself to the point of physical exhaustion as he will lose much which can be gained from this type of activity. However, he may wish to bring a camera or binoculars, or note pad and pencil. Possibly students could share in this by one carrying the camera, another the binoculars, etc.

In summary, these guidelines have been developed to place this excursion within the framework of the Board of Education policy governing field trips, which is:

Field Trips

"A properly planned, well-conducted, and carefully supervised field trip is a very vital part of the curriculum of any classroom. To be effective, a field trip must not be a spur-of-the-moment affair; it must grow out of the regular learning activities of the students.

The trip must have a definite purpose whether it is a walk around the block or is by bus to a distant place. Students should be prepared by general discussions, reports, slides, motion pictures, etc. They must know what to look for, questions they wish to have answered, and information they wish to acquire. Meanings of new words they may encounter on the trip should be explained. Certain duties and responsibilities should be allocated to selected students or committees; i.e., notes to be taken, questions to be asked, pictures to be taken, monitor duties, etc.

Before suggesting a field trip to students, the teacher should consult and plan with the principal concerning the advisibility of the trip, its scope, when it should be taken, and any other factors that would enhance the value of this trip.

Proper conduct should be stressed. These students are representing not only their own school but the schools of the whole city, and good conduct and pleasant manners will make it easier for other students to make similar trips.

When transportation is necessary, it is strongly advised that it be by common carrier.

The proper forms must be filled out by the school and completed by the parents before an individual child is allowed to participate in a field trip." (Handbook of Policy and Procedures for Albuquerque Public Schools, pp. 40-41.)

In addition we would like to suggest the following:

1. Help stimulate an informal learning atmosphere, and promote student participation in all activities.

2. Insure that student's questions are brought to the attention of the outdoor specialist. A question and answer period prior to leaving the site can also be arranged.

3. The teacher is encouraged (but not required) to point out or teach anything of interest to the students during the field trip.

II

ONE DAY FIELD TRIP COURSE OF STUDY

The program of the outdoor education center is designed to stimulate student interest in many areas of the sciences. It is our plan to encourage field observation in the subjects listed below. We fully realize that during a one day trip we can only provide an overview of these topics and attempt to stimulate interest. You may wish to study, in depth, those particular items in which students express unusual interest. We would be most happy to assist you in any way we can in such programs.

Life Sciences

Explore, discover, inquire, identify and explain:

1. Recognition of the common plant, animal, and natural communities found in the local area and highlights of their specializations and unusual characteristics.

2. Interrelationships of plant and animal life found in the local area, (food chain, carbon dioxide cycle, symbiosis, balance of nature-modern version, etc.).

3. The different life zones found in the area and the underlying causes of this phenomenon.

4. Uses of different plants and animals by Indians and modern man.

5. Survival and propagation of plant and animal species of the local area.

6. Seasonal changes in nature.

7. Misnomers about poisonous plants and animals in order to replace fear with respect.

8. Reforestation cycle of the local area.

9. Enemies of the forest, (insects, disease, animals, winds, fire, etc.).

10. Skills in using the five senses to study nature.

(Conservation Aspects)

11. Effect of human habitation on animals, and the effect of man's industries on plant life.

12. Misguided control attempts;upsetting predator-prey relationship.

13. Man's use of natural areas for recreation - increasing leisure time and the increasing population.

Earth Sciences

Explore, discover, inquire, identify and explain:

1. The various types of rock formations found in the area and relate them to their place in the geological history of the earth.

2. The origin of these rock rmations and their record of past life on earth.

3. Man's relationship to the age of the earth and the time involved in the formation of natural phenomena.

4. The earth forces (mountain building, weathering and erosion, etc.) and how they have shaped the landscape of the local area.

5. Minerals and their characteristics and relationship to the formation of rocks and soil in the area.

6. The general nature of rocks and their contribution to soil formation.

7. The hidden world of soil and its importance to man and his environment.

8. The types of soils found in the area and their relationship to the immediate environment.

9. Effect of plant roots on soil retention.

10. Effect of plants on water run-off and the particle load water carries.

11. Effect of man: over-grazing, fire, cutting, and over-using.

The following features will be included in the teaching at the site:

1. Upper Sonoran, Transition, and Canadian Life zones.

2. Coniferous (Pines, firs, junipers) and deciduous (oak, locust, box elder) trees.

3. Rock formations - sandstone, limestone.

4. Other features as they occur. These commonly include birds (steller's jay, robin, scrub jay, pygmy nuthatches, juncos, solitaires, etc.) and mammals (Abert's squirrel), animal signs (tracks, feathers, droppings).

5. Soils, topography, and conservation.

6. Typical Upper Sonoran and Transition plants and shrubs in season.

Suggested Follow-up acitivies.

1. Make an overall evaluation of the trip using our form and turn this in to the Outdoor Education Department. (Also, offer suggestions on how you think the trip can be improved).

2. Provide and develop follow-up activities to take advantage of any interest in areas of learning created by this trip.

   A. List of follow-up activities.

      1. Visit school and public library to find books relating to various topics discussed on the field trip.

      2. Assign written compositions pertaining to the Outdoor trip experience.

      3. Have a showing of any pictures or slides taken by yourself and students on the trip.

      4. Make terrariums and place in science exhibits.

      5. Make posters of things learned on trip (for example, conservation charts, samples of bark, leaves, seeds collected from areas other than the Outdoor Education Site.)

6. Develop further study by researching and expanding topics studied on the field trip.

7. Develop hobbies in rock and plant collections.

8. Make a conservation survey of the school grounds and community, and take action to correct any deficiencies found in this survey.

9. Have students interpret field trip activities through illustrations, sketches, or poetry.

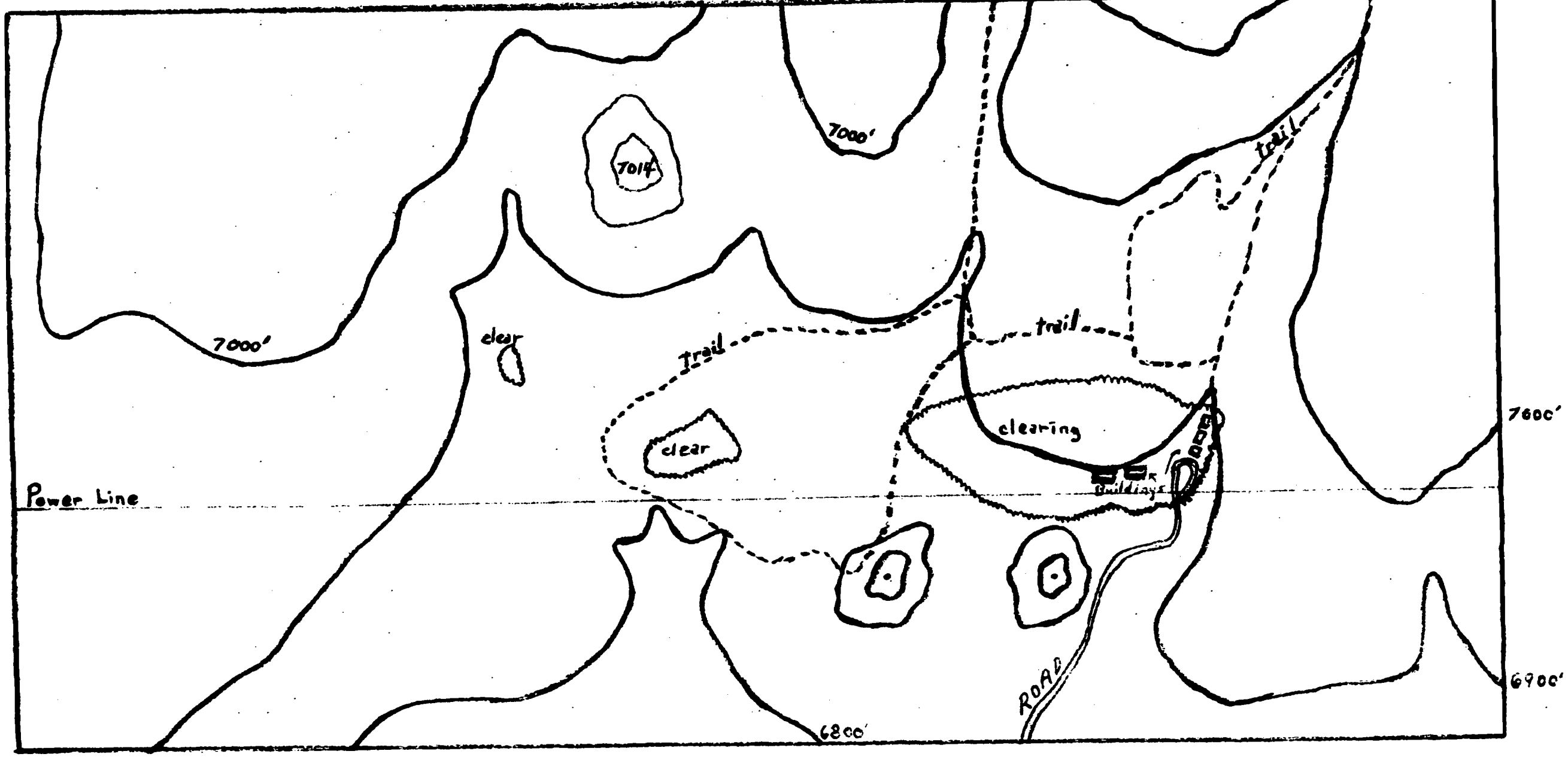
10. Make a relief map of the outdoor education site.

3. Make plans to take your own outdoor trip at some future date to playgrounds, parks, vacant land or the outdoor education site. A list of suggested activities for outdoor learning is available. If you would like to have one, please ask.

4. The Outdoor Education Department would appreciate your submission of any ideas, essays, posters, etc., for their use in teacher education and publicity. This material would not be returned unless specifically requested.

N

1" = 405'



OUTDOOR EDUCATION CENTER

VOCABULARY

Chlorophyll - The green coloring substance of leaves and plants which is associated with the production of carbohydrates by photosynthesis.

Coniferous - Belonging or pertaining to the conifers which are evergreen trees and shrubs that produce naked seeds in cones.

Deciduous - A tree that sheds its leaves at a particular season or stage of growth.

Diastrophism - The forces which cause the earth's crust to change due to pressures and stresses; examples are folding and faulting.

Duff or litter - The rubbish of dead leaves and twigs scattered upon the forest floor.

Exotic species - A plant or animal that is not native to a particular area or region.

Fault - A break in the earth's crust with movement along the break.

Igneous Rocks - Rocks produced by intense heat, such as rocks of volcanic origin or rocks crystallized from molten magma.

Metamorphic Rocks - Rocks which have been changed by heat or pressure; e.g. sandstone into quartzite or limestone into marble.

Parasite - A plant or animal which lives in, on, or with another living organism from which it takes food or shelter.

Photosynthesis - A process of green plants by which carbohydrates (food) are formed from the carbon dioxide and water under presence of sunlight.

Predator - An animal that preys upon other animals for its livelihood.

Saprophyte - A plant that lives on dead organic matter, such as some fungi, bacteria, etc.

Sedimentary Rocks - Rocks formed in layers from eroded materials or by precipitation of minerals.

Species - A distinct class of individuals (plants or animals) within a family which have some common characterists or qualities that distinguish it from other members of the same family.

Stamen - The pollen-bearing male organ of a flower. Staminate - having a stamens, but no pistils.

Symbiosis - Two different forms of life (species) living together so that both benefit. Example: fungus and algae, which together make up the lichen plant.

Transpiration - The giving off of water vapor by a plant as a result of photosynthesis.

Vulcanism - The process of building up the earth by volcanic activity.

Additional Spelling Words

Lower Sonoran	Arctic Alpine	piñon
Upper Sonoran	Abert's squirrel	fir
Transition	Steller's jay	ponderosa
Canadian	lichen	juniper
Hudsonian	gall	yucca

PUPIL TEACHER ACTIVITY EVALUATION

NAME_____ DATE_____

ACTIVITY_____

Other Participants:_____

PLANNING	RECORD
I. What do we want to see?	I. What we saw.
II. What do we want to do?	II. What we did.
III. What do we expect to learn?	III. What we learned.

This may be used for your benefit, or it can be submitted with the other evaluation sheet to help us.

BOOKS

The following is the complete list of books we have ordered for the Outdoor Education Center. It includes books both for adults and children. You may wish to check through the list to see if any are available at your school library - or, you may have other similar books to supplement reading in the natural sciences.

Adams and Newhall. THIS IS THE AMERICAN EARTH
Adams and Chavez. THE MISSIONS OF NEW MEXICO
Adler, I. DUST
Adler, I. and R. RIVERS
Allen, A. THE BOOK OF BIRD LIFE
Allen, D. L. THE LIFE OF PRAIRIES AND PLAINS
Armstrong and Thornben. FIELD BOOK OF WESTERN WILD FLOWERS
Arnberger. FLOWERS OF THE S. W. MOUNTAINS
Austing and Holt. WORLD OF THE GREAT HORNED OWL
Austing. WORLD OF THE RED-TAILED HAWK
Baerg. HOW TO KNOW THE WESTERN TREES
Baity. AMERICANS BEFORE COLUMBUS (rev. ed.)
Baker. ASTRONOMY
Baldwin. AMERICA'S BURIED PAST
Bale. CREATIVE NATURE CRAFTS
Barker. FAMILIAR INSECTS OF AMERICA
Barnett, S.A. INSTINCT AND INTELLIGENCE
Barnett, L. THE WORLD WE LIVE IN
Beeler and Branley. EXPERIMENTS WITH A MICROSCOPE
Bendick. THE WIND
Berrill. WONDERS OF ANIMAL MIGRATION
Berrill. WONDERS OF THE WOODS AND DESERT AT NIGHT
Blachly and Jenks. NAMING THE BIRDS AT A GLANCE
Blough. BIRD WATCHERS AND BIRD FEEDERS
Blough and Swhwartz. ELEMENTARY SCIENCE AND HOW TO TEACH IT
Booth. HOW TO KNOW THE MAMMALS
Branley. EXPERIMENTS IN SKY WATCHING
Brower. MEANING OF WILDERNESS TO SCIENCE
Brower. WILDERNESS, AMERICA'S LIVING HERITAGE
Brower. WILDLANDS IN OUR CIVILIZATION
Brown, V. HOW TO EXPLORE THE SECRET WORLDS OF NATURE
Bruere. YOUR FORESTS
Burt and Grossenheider. FIELD GUIDE TO THE MAMMALS (2nd. ed.)
Calvin. SKY DETERMINES
Caras. NORTH AMERICAN MAMMALS
Carrighar. WILD HERITAGE
Chidren's Press. YOUNG PEOPLE'S SCIENCE DICTIONARY
Christiansen and Kottlowski. MOSAIC OF NEW MEXICO SCENERY, ROCKS, AND HISTORY
Chu. HOW TO KNOW THE IMMATURE INSECTS
Colbert. MILLIONS OF YEARS AGO
Colbert. PREHISTORIC LIFE IN NORTH AMERICA

Colby. CLIFF DWELLINGS
Comfort. EARTH TREASURES
Comfort. ROCKS AND MINERALS
Conrad. HOW TO KNOW THE MOSSES AND LIVERWORTS
Cooper. SCIENCE IN YOUR OWN BACK YARD
Costello. WORLD OF THE PORCUPINE
Craighead and others. FIELD GUIDE TO ROCKY MOUNTAIN WILDFLOWERS
Craighead, J. and F. HAWKS, OWLS, AND WILDLIFE
Cuthbert. HOW TO KNOW THE SPRING FLOWERS
Cuthbert. HOW TO KNOW THE FALL FLOWERS
Davis. FINDING OUT ABOUT MAMMALS
Dawson. HOW TO KNOW THE CACTI
Disney. WONDERS OF THE ANIMAL WORLD
Disraeli. NEW WORLDS THROUGH THE MICROSCROPE
Dodge. FLOWERS OF THE SW DESERTS
Dutton. POCKET HANDBOOK, INDIANS OF THE SOUTHWEST
Edgren and Peterson. BOOK OF OUTDOOR WINTER ACTIVITIES
Ehrlich. HOW TO KNOW THE BUTTERFLIES
Elting and Folsom. THE SECRET STORY OF PUEBLO BONITO
Farb. THE STORY OF LIFE, PLANTS AND ANIMALS THROUGH THE AGES
Farb. THE INSECTS
Fenton. EARTH'S ADVENTURES
Fenton, C. and M. THE FOSSIL BOOK
Fenton, C. and M. A RECORD OF PREHISTORIC LIFE
Fisher. THE DOUBLEDAY PICTORIAL LIBRARY OF NATURE: EARTH, PLANTS, AND ANIMALS
Fitzpatrick, and others. LIVING THINGS (Textbook-Teacher's Guide available)
Fitzpatrick and Sinclair. PROFILE OF A STATE - One book
Fitzpatrick and Sinclair. NEW MEXICO
Forrester. 1001 QUESTIONS ANSWERED ABOUT THE WEATHER
Franklin. WILD ANIMALS OF THE SOUTHWEST
Franklin. WILD HORSES OF THE RIO GRANDE
Freeberg. PROGRAMS IN OUTDOOR EDUCATION
Freeman, M. and I. FUN WITH ASTRONOMY
Gallant. THE A.B.C.'S OF ASTRONOMY
Gibson. ABOUT INSECTS THAT HELP PLANTS
Hamm and Nason. ECOLOGICAL APPROACH TO CONSERVATION
Hammerman. TEACHING IN THE OUTDOORS
Harrison. THE FIRST BOOK OF WILDLIFE SANCTUARIES
Headstrom. ADVENTURES WITH A HAND LENS
Heald. SKY ISLAND
Helfer. HOW TO KNOW THE GRASSHOPPERS, COCKROACHES AND THEIR ALLIES
Hillcourt. FIELD BOOK OF NATURE ACTIVITIES AND CONSERVATION
Hussong. NATURE WALKS
Hutchins. AMAZING SEEDS
Hutchins. INSECTS
Hutchins. PLANTS WITHOUT LEAVES
Irving. VOLCANOES AND EARTHQUAKES
Jahn. HOW TO KNOW THE PROTOZOA
Jacques. HOW TO KNOW THE LAND BIRDS
Jacques. HOW TO KNOW THE BEETLES
Jacques. HOW TO KNOW THE INSECTS
Jacques. HOW TO KNOW THE ECONOMIC PLANTS

Jacques. HOW TO KNOW THE LIVING THINGS
Jacques. HOW TO KNOW THE PLANT FAMILIES
Jacques. HOW TO KNOW THE WEEDS
Jauss. DISCOVERING NATURE THE YEAR ROUND
Jenkinson and Kernberger. GHOST TOWNS OF NEW MEXICO
Kalmas. 101 SIMPLE EXPERIMENTS WITH INSECTS
Kane. THE TALE OF A MEADOW
Kaston. HOW TO KNOW THE SPIDERS
Kauffman. GENTLE WILDERNESS, THE SIERRA NEVADA
Keanney and others. ARIZONA FLORA
Keefe and Waldridge. WORLD OF THE OPOSSUM
Keeling. MEET THE MAMMALS
Keller (ed.). GEOLOGY AND EARTH SCIENCES SOURCE BOOK
Kohn. OUR TINY SERVANTS
Kohn. MOLDS AND YEASTS
Krutch. DESERT YEAR
Krutch. BEST OF TWO WORLDS
Krutch. GREAT CHAIN OF LIFE
Krutch. TWELVE SEASONS
Krutch. VOICE OF THE DESERT
Krutch. WORLD OF ANIMALS
Kurtz and Allen. ADVENTURES IN LIVING PLANTS
Laird. WEATHER CASTING
Lane. ALL ABOUT THE FLOWERING WORLD
Larousse. ENCYCLOPEDIA OF THE EARTH
Larousse. GEOLOGY, PALEONTOLOGY AND PREHISTORY
Larousse. ENCYCLOPEDIA OF ANIMAL LIFE
Lauber. ALL ABOUT THE PLANT EARTH
Lauber. THE LOOK-IT-UP BOOK OF STARS AND PLANETS
Lavine. WONDERS OF ANIMAL ARCHITECTURE
Lavine. WONDERS OF ANIMAL DISGUISES
Leitz. JUNIOR SCIENCE BOOK OF BACTERIA
Lemmon. ALL ABOUT MOTHS AND BUTTERFLIES
Lemon. FIELD AND LABORATORY GUIDE FOR ECOLOGY
Ligdon. NEW MEXICO BIRDS
Lippincott and Joseph. POINT TO THE STARS
Loomis. FIELD BOOK OF COMMON ROCKS AND MINERALS
Louvain. WILDLIFE OF THE WEST
Lutz. FIELD BOOK OF INSECTS
McClung. ALL ABOUT ANIMALS AND THEIR YOUNG
McClung. CATERPILLARS AND HOW THEY LIVE
McCormick. LIFE OF THE FOREST
McKready. A BEGINNER'S GUIDE TO THE STARS
Matthews. FOSSILS
Matthews. AN INTRODUCTION TO PREHISTORIC LIFE
Matthews. WONDERS OF THE DINOSAUR WORLD
Menzel. FIELD GUIDE TO THE STARS AND PLANETS
Merrill. GETTING OUT OF OUTDOOR TROUBLE
Metcalf. KEY TO THE PRINCIPAL ORDERS AND FAMILIES OF INSECTS
Milgram. THE ADVENTURE BOOK OF WEATHER
Milne. THE BALANCE OF NATURE
Mohr and Poulson. LIFE OF THE CAVE
Moore, R. EVOLUTION
Murie. A FIELD GUIDE TO ANIMAL TRACKS

National Geographic. WILD ANIMALS OF NORTH AMERICA
National Geographic. INDIANS OF THE AMERICAS
Norman. STRANGE WORLD OF REPTILES
Olcott and Putnam. FIELD BOOK OF THE SKIES
Olin and Bierleg. MAMMALS OF SOUTHWEST MOUNTAIN-MESAS
Patrow. FLOWERS OF THE SOUTHWEST MESAS
Pallister. THE INSECT WORLD
Pearl. GEMS, MINERALS, CRYSTALS AND ORES
Perry, J. and J. EXPLORING THE FOREST
Peterson. A FIELD GUIDE TO WESTERN BIRDS
Peterson. FIELD GUIDE TO THE BIRDS OF TEXAS AND ADJACENT STATES
Piedman. NAMING LIVING THINGS
Piedman. THE GROUPING OF PLANTS AND ANIMALS
Pinney. COLLECTING AND PHOTOGRAPHING YOUR MICROZOO
Pohl. HOW TO KNOW THE GRASSES
Pond. SCIENCE MATERIALS-PREPARATION AND EXHIBITION FOR THE CLASSROOM
Porter. IN WILDERNESS IS THE PRESERVATION OF THE WORLD
Pough. A FIELD GUIDE TO ROCKS AND MINERALS
Pough. AUDUBON WESTERN BIRD GUIDE
Prescott. HOW TO KNOW FRESH WATER ALGAE
Rhodes, Zim and Shaffer. FOSSILS
Rhodes, Zim and Shaffer. A GUIDE TO PREHISTORIC LIFE
Riedman. WATER FOR PEOPLE
Robbins and Irving. AMATEUR ARCHAEOLOGIST'S HANDBOOK
Roedelberger. WONDERFUL WORLD OF NATURE (Mary Phillips, ed.)
Ruchlis. YOUR CHANGING EARTH
Rue. WORLD OF THE RACCOON
Sanderson. THE CONTINENT WE LIVE ON
Sanderson. LIVING MAMMALS OF THE WORLD
Saunders. THE QUESTION AND ANSWER BOOK OF NATURE
Sawyer. WORLD CLIMATE FROM 8000 TO 0 B.C.
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