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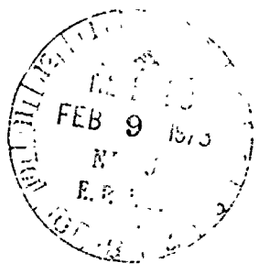
ABSTRACT

The purpose of this Outdoor Education Program was to develop in children a keener insight into the responsibilities of citizenship, as well as a better understanding of man's interrelationship with and dependence on nature. The program was an extension of the school curriculum to the out-of-doors and offered opportunities for developing many of the socially desirable attitudes, skills, habits, and interests needed for later life. This manual is intended as a basic source for both experienced and inexperienced outdoor personnel. Planning for the camp is discussed in terms of the organization of the outdoor education program; the schedule of activities; living in the camp community; getting acquainted with the new environment; the outdoor education routine; evaluating the outdoor education experiences; and the outdoor education teacher and counselor, which includes the classroom teacher's responsibilities in preparing the students to go to camp and suggests pre- and post-outdoor education activities for the classroom. Specific instructional units include Water and Related Uses, Rocks and Soils, Living Things of the Season, and Forestry. For each unit, material for presentation, identification charts, and suggested activities are included. (HBC)



PLAIN LOCAL SCHOOLS

Outdoor Education Program

"Relationships through Conservation"

I Water and Related Uses

II Rocks and Soils

III Living Things of the Season

IV Forestry

Prepared by:

Victor Drenta
H.E. Bartley

Instructor's Manual

Plain Local Schools is a part of the Stark County Department of Education System, Louisville, Ohio

High School. Also, by engaging in meaningful activities related to the Conservation of Natural Resources, the children may come to realize the importance of the dependence of man on nature.

The program is an extension of the school curriculum to the out-of-doors and offers opportunities for developing many of the socially desirable attitudes, skills, habits and interests needed for later life.

It is our hope that this manual will prove useful as a basic source for both experienced and inexperienced outdoor personnel.

Plain Local Schools
Outdoor Education Committee

Directors

Victor Drenta
H.E. Bartley

WORKING TOGETHER AS A TEAM FOR GOOD HUMAN RELATIONSHIPS

One characteristic of the outdoor education program is the team approach to instruction. This team approach is one of the strengths of the instructional program because it leads to more objective evaluation, greater interest in all aspects of the camp program, an equalized work load, and good in-service training opportunities.

Each teacher is a generalist rather than a specialist. He is responsible at one time or another for almost every aspect of the program.

SUGGESTIONS FOR IMPROVING STAFF RELATIONSHIPS

Good staff relationships evolve when basic principles of good living are practiced. Perhaps the most important of these principles is to be considerate of others. This is especially important at camp because there are always so many "others" to consider.

The need for many persons to share common facilities highlights the need for consideration in many situations. A staff meeting held each night makes for a closer feeling.

Experienced teachers should be alert for ways of providing status for inexperienced teachers.

A. Classroom Teacher Responsibilities

PRE-CAMP PLANNING AND POST-CAMP FOLLOW-UP

One of the major responsibilities of the classroom teacher is in the classroom before the class goes to camp and upon their return. The most unique thing about outdoor education is the continuity of experiences in the classroom and at camp. The teacher holds the key to outdoor education. The degree of correlation and integration of the outdoor experience with the on-going school program is up to the classroom teacher.

GENERAL ROLE IN THE CAMP PROGRAM

During the period at camp the classroom teacher's role is an instigater of ideas; a developer of the desire to find out what and why. The teacher also attempts to instill an appreciation of the beauty of living things as well as to emphasize the many utilitarian values of plants, trees, the soil, water and animals.

The teacher works with his own class, thus enabling him to guide the students more easily in the direction which will develop the desired outcomes. Being in the field for approximately two hours for each of the structered units, the teacher can develop the outcomes as well as divert his objectives when and where the opportunity exists.

The main objective is to Question; then to investigate to find solutions.

GROUP DISCUSSIONS AND EVALUATION

One of the best places for the teacher to assume the leadership role is in an evaluation when the students are together at camp. These occasions present themselves before and after meals, during

/ INTRODUCTION

OVERVIEW OF SCHOOL CAMP PROGRAM

The school camp program at Muskingum is a program designed to utilize an outdoor and camp environment to more fully meet the growth needs of boys and girls.

Two weeks in the spring, more than 600 boys and girls will have the opportunity to go with their classroom teachers to school camp. There, under the leadership of teachers and junior counselors, they explore and learn about their new environment in an adventuresome and profitable learning experience.

For three and one half days they work, study and live together in an outdoor camp setting.

Plain Local Schools use the FFA Camp Muskingum, operated by the F.F.A Camps, Inc., to provide opportunities for real life situations and purposeful, direct experiences in their education program.

CAMP AND CLASSROOM INTEGRATION

In general, the program includes not only the experiences at camp but also the related pre-camp and post-camp experiences in the classroom. The point of view of the camping program is:

> "The school camp must contribute more to the school program than a three day period of outstanding experiences and learnings at camp. The great potential of school camping will not be realized until the impact of increased interest and understanding growing out of the first-hand experience is brought to bear directly upon the classroom program of instruction. The school camp program should charge the classroom program with vitality and the pupils and teachers with enthusiasm that will result in and upgrading of instruction."

OPPORTUNITIES FOR LEARNING IN THE CAMP ENVIRONMENT

1. The outdoor environment is rich in opportunities for first-hand, direct experiences that encourage students to discover and explore new interests in a spirit of adventure.

2. The outdoor environment introduces many new sensory experiences . . . different odors, strange sounds, unusual textures, and interesting sights.

3. The simplicity of natural surroundings brings clearly into focus many fundamental laws and forces of nature that affect our way of living.

4. The beauty of the outdoors brings about a new quality of emotional and spiritual feelings and understanding.

5. In this climate of high motivation, strong purpose and readiness for learning, the intellectual and spiritual horizons of young people can be widened.

Camping during school time provides the opportunity for classroom teachers to plan with students for improved experiences at camp, and, also, to use the camp and outdoor experiences to add vitality and enrichment to the school, instructional program.

MAJOR OUTCOMES OF THE SCHOOL CAMP PROGRAM

Some of the major outcomes that can be expected from participation in the school camp program are:

The camper gains meaningful concepts in natural and life sciences through actual experience in outdoor activities.

Children from different economic level and varied social, racial and cultural groups, gain increased understanding and appreciation of each other as they live, work, study and play together at camp.

The camper recognizes the worth of group action in planning solutions for problems in camp, sharing ideas, setting standards and evaluating the results of planned activity.

Pupils and teacher gain new insights and discover each other as individual personalities in the camping enterprise. Their increased understandings improve subsequent classroom relationships.

The child finds a deeper sense of serenity, inspiration and spiritual well being as he becomes aware of the beauty, the majesty and the exquisite order of his natural surroundings.

The child feels an added sense of worth and importance as he engages in altruistic enterprises that contribute to his fellows, to future campers and to people in his community.

The child gains a feeling of self-dependence and growth as he masters new skills and learns to take care of his needs at camp.

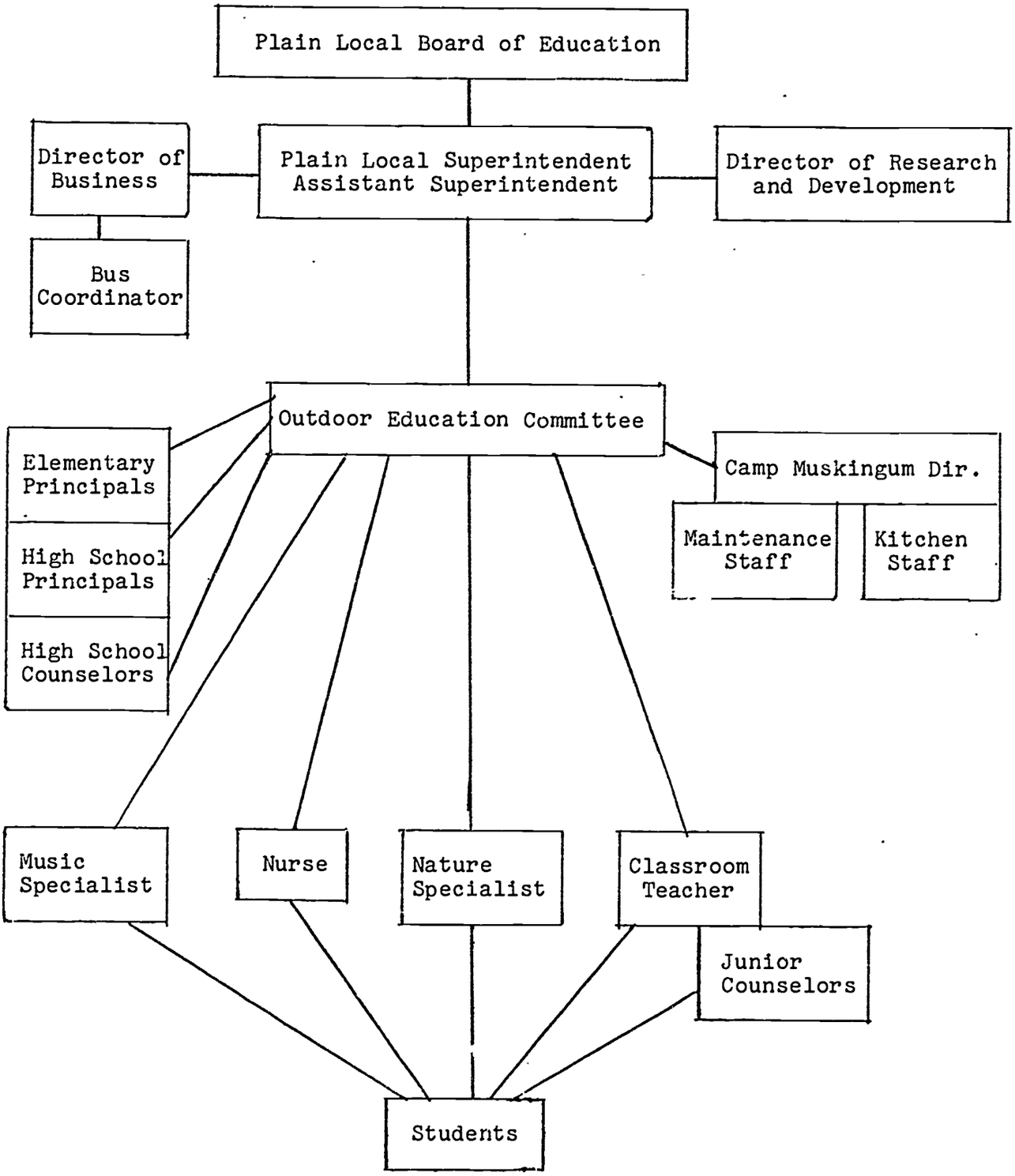
The camper appreciates the physical satisfactions and dignity of working with his hands.

The child expresses himself creatively through new experiences in music, language and art at camp.

The camper acquires a proprietary interest in conserving natural resources as a result of working on conservation projects.

The child gains fuller understanding of the importance of good health habits and safety practices.

2. Organization of the Outdoor Education Program



3. Schedules

A. Daily Activity Schedule

B. Daily Time Schedule

C. Tuesday-Friday Schedule of Activities

DAILY ACTIVITY SCHEDULE

FIRST DAY

Tuesday	Unpack Orientation
Arrive	Follow Daily Time Schedule
Evening Program	(Entire Group)

SECOND DAY

Wednesday

Morning - Period I
- Large Group Instruction - Water and Related Uses
- Class Activity - Water and Related Uses

Afternoon - Period II
- Large Group Instruction - Rocks and Soil
- Class Activity - Rocks and Soil

THIRD DAY

Thursday

Morning - Period I
- Large Group Instruction - Living Things
- Class Activity - Living Things

Afternoon - Period II
- Large Group Instruction - Forestry
- Class Activity - Forestry

FOURTH DAY

Friday

Morning - Period I
- Prepare to Leave Camp

Period II
- Discussion

DAILY TIME SCHEDULE

6:30	Bird Watching (optional)
7:00	Reveille
7:30 - 8:00	Clean Dormatories Flag Raising and Pledge of Allegiance
8:00 - 8:30	Breakfast
8:30 - 8:45	Announcements
8:45 - 9:15	Period 1 - Large Group Instruction
9:15 - 9:30	Questions and Answers
9:30 - 11:30	Period 1 - Class Activity
11:30 - 12:00	Restrooms
12:00 - 12:45	Lunch
12:45 - 1:00	Announcements
1:00 - 1:30	Period 11
1:30 - 1:45	Questions and Answers
1:45 - 3:45	Period 11 - Class Activity
3:45 - 5:00	Free Activities
5:00 - 6:00	Dinner and Group Singing
6:00 - 6:15	Restrooms
6:15 - 7:30	Free Activities
7:30 - 8:00	Wash-Up Period
8:00 - 9:00	Evening Activities and Snack Time
9:00 - 9:30	Dormatories and Hygiene
9:30	Lights Out - See You at 7:00 A.M.

OUTDOOR EDUCATION

Tuesday Schedule of Activities
(For those leaving school for camp) May 4, 11 and 18, 1971

****

8:45	Pupils should be ready to get on bus
9:00	Buses leave the respective schools
9:30	Rendezvous at Pleasant View School
11:00	Arrive at Camp Muskingum - Go to Restrooms - Orientation - (In case of rain we shall assemble in the Lodge) Junior Counselors meet with pupils at orientation
. . . . .	
12:00	Lunch
. . . . .	
1:00	Cabin Activities
2:00	Group Hikes for Camp Area Orientation Groups shall assemble by Main Lodge with Junior Counselor and Teachers
4:00	Rest Period in Cabin
5:00	Dinner - Announcements - Group Singing
6:15	Free Activities
7:30	Wash-Up Period
8:00	Evening Program
9:00	To Dorms - Hygiene
9:30	Lights Out - 7:00 A.M. will soon come!

OUTDOOR EDUCATION

WEDNESDAY SCHEDULE OF ACTIVITIES May 5, 12 and 19, 1971

****

6:30	Bird Watching (optional)
7:00	Reveille
7:30 - 8:00	Clean Dormatories Flag Raising and Pledge of Allegiance
8:00 - 8:30	Breakfast
8:30 - 8:45	Announcements
8:45 - 9:15	Period 1 - Water and Related Uses Presentation
9:15 - 9:30	Questions and Answers
9:30 - 11:30	Period 1 - Class Activity in Water and Related Uses
11:30 - 12:00	Restrooms (in dorm area)
. . . . .	
12:00 - 12:45	Lunch
. . . . .	
12:45 - 1:00	Announcements
1:00 - 1:30	Period 11 - Rocks and Soil Presentation
1:30 - 1:45	Questions and Answers
1:45 - 3:45	Period 11 - Class Activity in Rocks and Soils
3:45 - 5:00	Free Activities
5:00 - 6:00	Dinner and Group Singing
6:00 - 6:15	Restrooms
6:15 - 7:30	Free Activities
7:30 - 8:00	Wash-Up Period - Flag Retreat
8:00 - 9:00	Evening Activities and Snack Time
9:00 - 9:30	To Dormatories and Hygiene
9:30	Lights Out - See you at 7:00 A.M.

OUTDOOR EDUCATION

THURSDAY SCHEDULE OF ACTIVITIES May 6, 13 and 20, 1971

****

6:30	Bird Watching (optional)
7:00	Reveille
7:30 - 8:00	Clean Dormatories Flag Raising and Pledge of Allegiance
8:00 - 8:30	Breakfast
8:30 - 8:45	Announcements
8:45 - 9:15	Period lll - Living Things Presentation
9:15 - 9:30	Questions and Answers
9:30 - 11:30	Period lll - Class Activity in Living Things
11:30 - 12:00	Restrooms (in dorm area)
. . . . .	
12:00 - 12:45	Lunch
. . . . .	
12:45 - 1:00	Announcements
1:00 - 1:30	Period lV - Forestry Presentation
1:30 - 1:45	Questions and Answers
1:45 - 3:45	Period lV - Class Activity in Forestry
3:45 - 5:00	Free Activities
5:00 - 6:00	Dinner and Group Singing
6:00 - 6:15	Restrooms
6:15 - 7:30	Free Activities
7:30 - 8:00	Wash-up Period - Flag Retreat
8:00 - 9:00	Evening Activities and Snack Time
9:00 - 9:30	To dormatories and Hygiene
9:30	Lights Out - See you at 8:00 A.M.

OUTDOOR EDUCATION

FRIDAY MORNING SCHEDULE OF ACTIVITIES May 7, 14 and 21, 1971

****

8:00	Reveille - Pack Suitcase - Prepare bunk
8:30	Breakfast
9:00 - 10:15	Discussion and clean camp
10:15 - 10:30	Go to restroom - Prepare to get on bus
10:30	Leave Camp
12:00	Arrive in Canton - Time might vary slightly at certain homes

4. The Outdoor Education Teacher and Counselor

A. Classroom Teacher Responsibilities

B. Pre-Outdoor Education Requirements

C. Pre-Outdoor Education Suggestions

D. Post-Outdoor Education Suggestions

THE OUTDOOR EDUCATION TEACHER AND COUNSELOR

TRAINING FOR A UNIQUE PROGRAM

Throughout the school year, some staff meeting will be devoted to strengthening the effectiveness of teachers in the outdoor education program.

USING EFFECTIVE METHODS AND TECHNIQUES OF INSTRUCTION

A brief outline covering some of the methods and techniques of teaching that are especially pertinent to camp instruction is presented here as a guide to improved instruction.

DEVELOPONG UNDERSTANDING OF CHILDREN

Consult with classroom teachers about pertinent behavior of children from their class.
Gain insight into children's needs and drives for:
- security
- recognition
- success
- activity
- altruistic expression

Develop a sensitivity that will aid in:
- reading faces, expressions
- sensing moods, tone, atmosphere and attitudes
- sizing up situations

Develop good teacher-student rapport by being:
- friendly, sympathetic, humor-loving
- sensitive, understanding, alert
- objective, clinical
- constructive, positive
- consistent, dependable
- fair, honest reasonable
- inspirational

Become familiar as possible with your subject
Learn about the natural environment.
plants, animals, rocks, topography, weather, stars
relationships, conservation

Learn the skills involved in the activities

song leading	games
craftmanship	campfire programs
outdoor living	flag ceremony

Develop good techiniques of instruction.
- Teach by example
- Practice democratic precedures
- Encourage campers to explore and make discoveries for themselves
- Make use of the first-hand learning experiences found in the field activities to promote "learning by doing."
- Employ the problem-solving approach. Involve students actively in solutions to problems.
- Strive to promote creative thinking. Use questions that are thought-provoking.

___5. Collect fees and turn in to building principal.

___6. Act as liason between Program Director and children and parents for the purpose of distributing and collecting necessary information.

___7. Make sure all medical forms and permission slips are returned and signed. Turn in to principal.

___8. Practice proper table setting and manners.

___9. Discuss proper behavior. Respect for other people and property.

___10. Familiarize yourself with the instructional units, method and materials. Plan your diverting objectives if any.

SUGGESTED IDEAS FOR ENCOURAGING AND PROVOKING THE FUNCTIONING OF THE "THOUGHT PROCESSES" OF THE STUDENTS WHILE IN THE FIELD;
(Think; See; Hear; Touch; Taste; Smell; Example; Question)

Notice seeds - how they fall to the ground to start new growth or serve as food for animals.

Notice how bushes and undergrowth provide concealment for small animals.

Examine a rotting stump for insects at work.

Notice how a lichen-covered rock is an example of compatibility between the living and non-living in the woods.

Look for possible damaging forces at work; such as man's interference with nature as initials carved in the bark of trees or the remains of a wire fence deeply inbedded in a tree.

Pick up as many kinds of leaves as can be found. Encourage students to include a variety of colors, shapes and edges. Identify the leaves with the tree from which they came.

Look for seeds. Match seeds with leaves.

Notice the things that can be seen in a stream; such as rocks, leaves, waterfall, reflections, moss on rocks, twigs, logs, small islands, willow trees, litter, bubbles, fish, bugs, plants, etc.

Take the temperature of the air. Take the temperature of water in a stream or lake, Notice the difference.

Notice the difference in tree bark by touching, smelling, seeing.

Point out the part that the forest plays in conservation by increasing the moisture-holding power of the soil.

Point out the function of the forest floor in forming soil that the rotting materials, at the same time, were serving a purpose for certain plants and animals of this biome.

Emphasize the many utilitarian values of plants, such as; soil building, habitats for wildlife, users of carbon dioxide, producers of oxygen, and the importance of roots in holding and aerating soil.

Compare soils in different areas; clay, humus, subsoil, sand. Compare particle size, color and texture. Examine lake bottom silt.

Observe water and its action. Notice islands of sediment where the flow of water is slow. Notice gullies and ravines where the flow of water is fast.

Look for living things present in water; fish, insects, insect larvae, snails, plants (willow, moss, lichen, grass, algae), and micro-organism.

Notice the clearness of water running off the hills.

Notice erosion caused by water runoff and any measures to correct it.

Look for evidences of erosion caused by water, weather, wind and people.

Notice the difference in the break down of rocks; rounded rocks in the stream, cracked rocks from freezing and thawing, and rock pitted from moss and lichen growths.

Notice how tree and flower buds swell when their dormancy is broken (photoperiodism).

Notice the odd shapes in the growth of some trees caused by new growth or other influences.

Notice birds; their sound and appearance. Why are birds so vocal in the Spring?

Notice the wild flowers.

Notice the non-flowering plants; the velvety-smooth moss the lacey ferns and the tiny lichen.

Realize that the Outdoor Education Program is more than a supplement to a science curriculum. It attempts to provide directed and nondirected experiences seldom found in the everyday life of today's urban and suburban children. Perhaps the "Discover and Question" approach will insure an increase in awareness and appreciation of the natural world.

B. Pre-Outdoor Education Requirements - Teacher's Checklist

_____1. Construct luggage and bunk tags; possibly in and Art class.

Directions:

Materials - two or more pieces of 3" X 5" heavy cardboard; two or more pieces of 1" X 4" masking tape; two or more 10" pieces of heavy cord or twine; paper punch; and magic marker or black crayon.

Procedure - cut cardboard to proper size. Place masking tape over one end of cardboard. Punch hole through masking tape 3/4" from edge of cardboard. Tie string through hole and leave sufficient length to tie to luggage and bunk. Print full name, school and teacher on tags.

_____2. Appoint a committee in the class to collect library books for reference at camp. Bring books with you. Make sure all books are identified with your name or the school's name.

_____3. Discuss health habits at camp. Personal cleanliness. The school nurse may have a part in this discussion. All students must report illness or colds immediately upon feeling sick. This should be stressed before and after children arrive at camp.

_____4. Discuss common sense safety practices and health while in the out-of-doors.

Don't run on rough trails
Always stay with the group
Wear proper clothing
No rough-house activities

_____5. Discuss proper use of camp facilities.

Don't deface walls
Don't carelessly discard rubbish

C. Pre-Outdoor Education Suggestions

1. Construct Herbariums for each student; possibly in an Art class.

   Directions:

   Materials - two 9 1/2" X 12" heavy cardboard; 6 pieces of 1" X 14" masking tape; one 15" piece of heavy cord or twine; one Index Sheet; twelve or more herbarium sheets; paper punch. (materials can be brought in by student.

   Procedure - cut cardboard to proper size. Fold one edge of each piece 1" from edge. Apply tape to folded edge, being sure to cover entire folded edge. Punch 3 holes in each folded edge of cardboard - center and space holes equally. Lace string through both pieces of cardboard to make a book (be sure to put in index page and herbarium sheets before lacing). Illustrate cover and be sure to put name, date and school on book.

2. Construct collecting containers; possibly in an Art class.

   Directions:

   Materials - one 1/2 gal. paper milk carton; one women's nylon hose - large size.

   Procedure - cut top out of milk carton. Place milk carton inside of nylon hose - tie hose at top. Put name on carton.

3. Arrange nature exhibits and display maps.

4. Make available books, etc., or have children write for literature on nature, conservation, etc. Discuss in class. (Refer to 6th grade text, Language for Daily Use, 1959 Edition, for addresses).

5. Show movies and slides on nature topics or on the camp site.

6. Discuss with students the keeping of individual logs of daily activities. Include health tips. comments on activities, other items of interest. Use small notebook or pad.

7. Encourage students to add new words and their definitions to their vocabulary; such as Conservation, Geology, Ecology, etc.,

8. Develop a spelling list of camp terms in your room.

9. Discuss the writing of letters or cards home while in camp. (Refer to 6th grade text, Language For Daily Use, 1959 Edition, for samples). Have students bring letters and cards into class upon arrival back for a bulletin board display.

10. Attempt to correlate Geology, Archeology and Conservation Units in 6th grade Science Text and Language Text with Outdoor Education Program. (Refer to 6th grade Science Text, Science for Today and Tomorrow, 1961 Edition; and Language for Daily Use, 1959 Edition).

11. Discuss points of interest to observe on the way to the camp site.

12. Plot the route of travel to the camp site on a highway map. Calculate distance, time, routes, etc.

D. Post-Outdoor Education Suggestions

1. Arrange nature exhibits and display maps.

2. Encourage children to add new words and their definitions to their vocabulary; such as Conservation, Geology, Ecology, Pollution, etc.,

3. Develop a spelling list of camp terms in your room.

4. The camp directors will appreciate it if teachers will pass on to them any significant comments, suggestions, or follow-up work of the campers or their parents.

5. There are many ways of developing the camp experiences when the class returns to the school. Following are some suggestions which have been carried on by teachers in the past.

   -Writing stories and poetry about outdoor education experiences.

   -Arranging a camp display on the corridor bulletin board or in a school display case.

   -Preparing a school assembly or a PTA program about camp.

   -Writing letters to the camp staff.

   -Establishing a school weather station and continue the weather prediction activity.

   -Labeling plants, boulders, etc., on the school grounds.

   -Display pictures taken by children at camp.

   -Oral reports to other classes (particularly 5th grades).

   -Complete student evaluation sheets and discuss them.

5. LIVING IN THE CAMP COMMUNITY

THE CAMP COMMUNITY: A SETTING FOR DEMOCRATIC LIVING

An important potential of the camp in the school educational program is in providing children with a real setting for practicing skills of living together in a democratic social group.

CHARACTERISTICS OF THE CAMP SETTING

The camp setting is carefully planned to meet the objectives of the program.

It provides a 24-hour-a-day living situation.
It offers a new physical, sociological and psychological environment.
It is a community of children.
It is carefully structured to meet certain basic objectives.

STRUCTURING OF THE CAMP COMMUNITY

Children are selected from the same grade level because they tend to have similar needs, drives, abilities and points of view.
Some of the children are friends while others are strangers.
The children come with varied backgrounds of race, religion, culture, economic status, home life and school life.
The students are assigned to cabins so that some children are from different classes in each cabin. The social pattern that existed in the classroom is temporarily dissolved to set the stage for new adjustments and relationships at camp.
The students are removed from home and community contacts for four days.
The classroom teacher comes to camp with this class for the period.

A TIMELY OPPORTUNITY

The unexplored environment, the new home, new acquaintances and different experiences provide a timely opportunity for children to discover that new decisions, rules, standards and planning must be arrived at somehow.

It is a time and place when the camp staff can capitalize upon the pupil's recognition of need for action. It is a time to initiate planning and discussion that has the very real and immediate purpose of answering such question as:

Where will we live?
How can we live well together for the period?
How can we have the most enjoyable and profitable encampment?
What rules and regulations should govern our behavior during this period?

DISCIPLINE: ACCEPTANCE OF RESPONSIBLE CITIZENSHIP

The concept of discipline in a democratic society implies the acceptance of responsibilities of good citizenship. The concept goes beyond the definition of control, even when developed as self-control.

In the School camp the special emphasis on democratic action influences the nature of discipline. It is the acceptance of responsibility and the exercise of self-control that enables campers to enjoy the benefits of their decisions and choices.

BASED ON DEMOCRATIC PRINCIPLES

The teachers' approach to desirable practices in discipline at camp is based on the following democratic practices.

Use positive ways of guidance which exemplify a belief in the value of each personality, rather than negative ways which undermine self-confidence and self-esteem.
Give evidence of confidence in the capacity of all campers to learn cooperation and mutual respect.
Promote a climate in which mutual respect and trust are encouraged.
Use rational approaches to the solution of problems.
Help students to underdtand the reasons for their own and others behavior. Help them develop more effective ways of meeting and heading off conflicts and problems.
Deal with behavior disturbances as symptoms of the student's personal problems. Look further and deeper for the real problem.
Use the following resources for gaining additional information.
Maintain good communication with other camp personnel about student's behavior. Work as a team.
Refer to written information about students supplied by school and parents.

GUIDELINES AND SUGGESTIONS FOR ACHIEVING GOOD DISCIPLINE AT CAMP

Develop a feeling of group spirit in which each student feels an identification with and a pride in membership in the group.

Be courteous, kind, patient and sincere. Promote an attitude of honesty and consideration for others.

Clarify the responsibility of each individual for adhering to the rules and standards finally accepted by the group.

Explain that since the camp staff has responsibility for providing a safe and profitable experience for all campers, that no individual or group can be allowed to jeopardize the safety and learning opportunity for others.

Since many of the camp activities contain a real element of danger it may be necessary to modify the program for any students who demonstrate that they are not willing or capable of accepting the responsibilities required for particular activities. In such cases, students may be referred to their own teacher for further study.

The particular teacher will not take it upon himself to decide on modification of student's programs.

Be alert to the early identification of any symptoms that may indicate potential behavior problems.

Communicate with other staff members gathering all pertinent information that may be useful in making a team approach to good discipline.

When infractions of rules or standards are brought to your attention, withhold judgment, and review them either individually or with the group.

Be judicious in the use of group social pressures to influence behavior.

Do not use group pressure as a weapon, a threat or for punishment. Give guidance to group thinking to promote a rational, fair and helpful approach to the problem at hand.

The wise use of group action can do more than solve individual problems. It can help to develop a feeling of pride and growth in campers as participants in responsible citizenship.

Discipline yourself to use the manner and tone of voice that will be conducive to attaining your objectives with the students. Do not allow anger or destructive emotion to show. Be objective. Avoid letting personal emotions get in your way. Sarcasm and ridicule tend to destroy individual self-esteem and should never be used.

RULES AND PROCEDURES GOVERNING THE HANDLING OF DISCIPLINE

CORPORAL PUNISHMENT

No coproral punishment shall be used for any reason in the camp program.

CONTROL BY FORCE

The only time a student may be restricted forcibly is when it is necessary in order to insure the safety of himself or of others.

Any necessary control by force must be done objectively and without anger.

EXCLUSION FROM AN ACTIVITY

A student should be excluded from an activity only after all other means have been exhausted. The student should never be allowed to remain in any situation where he is unsupervised. Lack of supervision is the chief factor in determining negligence.

The responsibility for returning a child to his school or home rests with the program director. All cases in which such action is recommended must be discussed with the program director before the child is returned home from camp.

6. GETTING ACQUAINTED WITH THE NEW ENVIRONMENT

ORIENTATION

The program of orientation at camp is designed to help each camper find himself in his relationships to his fellow campers, the camp environment, the natural environment, and the activities to be carried on at camp. Orientation is done in many ways:

1. discussion
2. demonstration
3. explanation
4. observation
5. use of films, museums, displays, maps, charts, signs, tours, tools

In general, orientation should not be given for a particular activity until time for engaging in this activity.

The greatest emphasis on orientation of campers will come on the first day with the arrival of campers. Each succeeding orientation should serve to reinforce and supplement the important points already considered. Needless repetition can be avoided through good planning and teamwork.

ARRIVAL AT CAMP

POINT OF VIEW

Many boys and girls come to camp with some apprehension. Camp is new, it is different and it contains some elements of the unknown. Some of these children come from a background where uncertainty and insecurity of home conditions heighten their aprehension. For these children the most important contribution that the camp program can offer is a period of friendly, sympathetic acceptance which leads them to feel that they belong.

The child's first impression of camp should be that these friendly teachers are genuinely glad to take them to camp. They need to feel that they are wanted at camp.

OVERVIEW OF ACTIVITY

When the buses arrive at camp, the children are escorted immediately to toilet facilities and dormatories.

EXPECTED OUTCOMES

The children:

feel welcome at camp
feel reassured by the friendly, courteous and sincere manner of the staff
feel a sense of security when the first concern of the camp staff

is to provide for their physical needs

MATERIALS

Teacher's,students' and junior counselor's name tag for identification
List of names of campers assigned to each dorm group
Clothing appropriate to the camp setting
A smile, and sincere friendly manner

SUGGESTED PROCEDURES

Learn at staff meeting about special characteristics of the incoming group or of individuals within the group.

Study summary statement of significant health and behavior characteristics of individuals, especially those assigned to your cabins.

General meeting for dorm assignment

Continue to make campers feel welcome at camp
Divide group into smaller groups by reading names from prepared list and assign junior counselor to each group
Junior counselor take group to dormatory for orientation

7. Outdoor Education Routine

A. Cabin Orientation

B. Tour of the Camp

C. Personal Hygiene, Cleanliness and Safety at Camp

D. Meals at Camp

E. Housekeeping

F. Bedtime

G. Keeping Safe and Well at Camp

A. CABIN ORIENTATION

POINT OF VIEW

The cabin is to be the new home for the campers for the next few days. The junior counselors take on the very important role of parents in absentia.

Each child needs to feel that this new home and the new set of adults he will be associated with offers him friendly security. He needs to feel that he is accepted by the other members of his new family of campers as a participating member.

This first cabin group orientation is an important opportunity for developing good attitudes and practices of democratic citizenship.

OVERVIEW OF ACTIVITY

The campers meet with their junior counselors in the cabin to discuss how they can live safely and well together in their new home.

The standards and decisions arrived at in this group discussion should serve as a frame of reference and guide for future action and behavior.

Included in this first cabin orientation period will be such activities as selecting bunks, bringing in luggage and getting settled, a tour of the cabin facilities.

EXPECTED OUTCOMES

The camper:

- feels welcome in a friendly place.
- feels accepted as a worthwhile member of the group
- feels secure in knowing that he will receive protective care and understanding.
- experiences a feeling of simple sincerity resulting from the junior counselor's own honest, sincere and straight forward manner.
- senses the spirit of "we" and "our"
- considers his fellows with understanding and appreciation
- realizes the value of democratic action
- assocaates responsibility with freedom of opportunity
- desires to gain recognition in the eyes of his fellows through making contributions
- feels enthusiasm and anticipation for the experiences to come. (A spirit of adventure and wonder)
- understands that camping and outdoor experiences are an important part of learning
- appreciates the need for order, organization and rules
- learns the name of his fellow dorm mates and becomes acquainted with those who have been strangers
- helps to formulate dorm rules
- learns existing camp rules
- understands procedures for fire drills

MATERIALS NEEDED:

-List of campers
-Health information
-Pencil

SUGGESTED PROCEDURES

INTRODUCING CAMPERS

Introduce the campers to their new home by means of a brief tour of cabin (bunks, shower room, toilets.)

KEEP SAFE AND WELL

Ill or injured campers may need to be taken home for treatment.

CONSIDER OTHERS

The Golden Rule leads to friendship and respect. Courtesy, cooperation and fairness encourage appreciation and fellowship.

"The thing that goes farthest toward making life worthwhile, costs the least and does the most good is just a pleasant, sincere smile."

HEALTH CONDITIONS

-Encourage a desire in campers to want to keep safe and well.
-Stress need for campers to let teachers, junior counselors, or nurse know about any minor ailments or symptoms of health problems.
-Explain to girls about procedures regarding menstruation at camp.
-Encourage campers to wear proper clothing:

Sweaters and hats when necessary.
Keep feet dry.
Do not wear new jeans on hike.

SELECTING BUNKS AND GETTING SETTLED

Let the campers go outside to get their luggage at such time as will provide relief and prolonged discussion.

Check summary of special health conditions before first meeting of cabin.
-see that bed wetters get bottom bunks near the toilets.
-put sleep-walkers on bottom bunks.
-locate campers who may need special care nearest to counselor's bunk.

Encourage campers to have a familiar friend on one side of his bunk and a stranger from another room on the other side of his bunk. Point up the opportunity for making new friends with strangers. "How do we make new friends?"

After campers have luggage by bunks, give instructions for storing and caring of luggage and demonstrate how to make up bunk bed.

CONSIDER CABIN SAFETY HAZARDS AND PROCEDURES

"Look around, what objects or situations could be unsafe in this cabin?"

-Floors (splinters)
  Wear shoes or slippers at all times
  Walk - do not run

-Beds
  Danger of falling off top bunk.
  If camper in lower bunk pushes up against bottom of upper bunk he may kick top person off or may force top bunk frame out of hinges so it may drop and land on camper in lower bunk.

-Showers
  Floor slippery
  Regulating showers - scalding
  Windows - operated by counselors only.

Discuss conservation and thrifty use of supplies.

-Paper cups
-Paper towels
-Water running in toilets
-Water in showers

Prepare group for tour of camp.

B. TOUR OF CAMP

POINT OF VIEW

The tour of the camp provides a chance for further orientation of campers to fellow campers, the camp facilities and camp grounds.

OVERVIEW

After campers have become familiar with the function of each facility they become acquainted with the camp boundaries. All cabin groups with their assigned junior counselors, along with the teacher, will assemble at the lodge in preparation for this hike. Their desire to know what is beyond is satisfied with a hike which takes them out of sight of the camp buildings and gives them some idea of the total area of camp.

EXPECTED OUTCOMES

The camper learns the location, function, and rules covering use of the:

- office
- postal letter drop
- meeting areas
- flagpole
- quarters of other campers
- weather station
- museums
- camp boundaries

The camper gains a clear idea of many of the activities offered in the camp program.

The camper releases some of his energy through hiking.

PROCEDURES

Check for proper clothing and shoes.

Explain briefly:

- How each facility is used in the camp program
- How each camper can use the facility.

Explain reasons for establishing camp boundaries and explain when they are in effect.

C. PERSONAL HYGIENE, CLEANLINESS, AND SAFETY AT CAMP

POINT OF VIEW

Shower time at camp provides the campers with an opportunity for realizing some of the important objectives of the social nygiene program.

Participating in a group activity that is accepted as a regular, normal feature of the camp program enables the camper to take great strides in understanding himself better through observing that he is just about like his fellow campers in most ways.

The values of this activity extend far beyond cleanliness and sanitation into good mental health.

OVERVIEW

Children will have an assigned time for showering.

Shower time follows shortly after the end of the afternoon or all day activities before bed time.

EXPECTED OUTCOMES

The camper

enjoys the feeling of being clean and fresh
gains understanding about himself and his fellows
learns the need for a clean mind and body

MATERIALS

Each child should have his or her own bar of soap and towel
Necessary menstrual supplies in girls' cabins

PROCEDURES

Jr. counselor or a teacher should be on duty during shower time

EMERGENCIES AT CAMP

PREVENTION

The best approach to handling emergency situations is to prevent them from happening.

PREPARATION

A good plan for handling emergency situations is to be prepared for

any accidents that have not been sucessfully prevented. We have prepared for these emergency situations by having on duty 24-hours a day, a registered nurse. It shall be the duty of all, the junior counselors, teachers, camp directors, and other adult personnel connected with the program to see that all emergency situations be reported promptly; first to the nurse, and secondly, tothe camp director.

A person shall be on duty as the Camp Director at all times.

Equipment
All first aid materials to be in the First Aid building and under the care of the nurse on duty.

General Safeguards
Hike only in approved areas
Practice safety precautions
Keep a vehicle available when activity groups are far from camp.
Store life-ring near ponds.
Carry out plans for caring for emergencies in the field

GETTING LOST IN THE OUTDOORS

HOW TO KEEP FROM GETTING LOST

IF YOU ARE WITH A GROUP, STAY WITH THE GROUP. If you find it necessary to leave, let someone know where you plan to go and when you plan to return and take a buddy with you.

PAY ATTENTION TO LANDMARKS SUCH AS GULLIES, BUILDINGS, AND LANDMARKS. Keep them located in your mind.

WHAT TO DO IN CASE YOU GET LOST

THE GREATEST DANGER IN GETTING LOST IS PANIC WITHIN YOURSELF.
Sit down, rest, think and stay calm. REMEMBER . . You will be found. Searching parties will lock for you until you are found.

STAY NEAR THOSE PLACES WHERE SEARCHERS ARE LIKELY TO LOOK FOR YOU - along a path for instance.

PROCEDURES FOR HANDLING EMERGENCIES AT CAMP

In the case of an injury (or sickness) when the person involved needs transportation back to camp, an adult or two classmates shall be sent to the Lodge for help.

In emergencies involving mass evacuation from camp, the Camp Director will arrange for such action.

In general, emergencies of all types must be documented and reported.

It is important to get eye witness reports and clear statements of all pertinent facts as quicly as possible. Forms to report accidents will be in the First-Aid station.

SAFETY FROM LIGHTNING

During a severe electrical storm remain inside of a building, if possible near the center of a room.

Avoid the immediate vicinity of electric light circuits, lightning conductors and downspouts,screened doors and windows especially if open, stoves and fireplaces, telephones and any metal object projecting through wall or roof.

If unavoidably out of doors, keep away from isolated trees, wire fences, hill-tops and wide open spaces, small sheds and shelters in an exposed location. Keep as close to the ground as possible.

Try to reach thick timber, a depression in the ground, or a deep valley, if any of these are near by.

D. MEALS AT CAMP

POINT OF VIEW

The eating of three balanced meals at regularly scheduled times in an atmosphere that is friendly and free from the pressures of issues comes as an experience that is quite new and very important to some of the children.

The most important ingredient in the meals at camp is a relaxed and friendly tone. Good fellowship and sincere consideration for each other are far more important than the mere learning of manners.

A dash of good humor is an excellent tonic and appetizer and coupled with the example and competiton of a table full of hungry campers will go further toward overcoming finicky appetites than any attempts of urging or forcing of foods.

OVERVIEW

All meals at camp are eaten in the camp dining room.

Each table of campers is counseled by a junior counselor. The meals are served family style and the students set the tables, wait on the tables, scrape the dishes, and clear the table.

DINING ROOM PRECEDURES
BEFORE THE MEAL

Children will be assigned to help in setting the tables, serving the tables with such items as milk, butter, and bread before the main group of campers enters the dining room, and to replenish food during meal time.

All girls will assemble in groups with the junior couselors near the main door prior to entering the lodge. At a given signal they will enter the lodge and go in an orderly manner to the assigned tables.

All boys will assemble in cabin groups with the junior counselors on the porch at the entrance to the lodge. At a given signal they will enter the lodge and go to the assigned tables in an orderly manner.

There is space enough at each table for one junior counselor and seven pupils. The remainder of the boys and girls in each cabin shall be seated at a table separate from the junior counselor.

ARRANGEMENT OF CAMPERS AT TABLES

Some of the objectives that should be considered in establishing procedures for arranging students together at the dining tables are listed below:

Meal time should be -
- a relaxing, enjoyable experience
- an opportunity for teaching good manners
- a chance for all students to share equally in the chores of setting and clearing tables.

The seating pattern for all meals will remain the same.

SAYING GRACE

Before the campers are seated, the assembled group sings one of the camp graces.

SETTING A GOOD EXAMPLE

The junior counselor will influence his table through example. His attitude toward the meal will "rub off" on the students.

His enthusiasm for trying foods will encourage students to try new foods.

His courteous manner will not only provide incentive for courteous behavior, it will also act as a guide as to what is courteous conduct.

TEACHING GOOD MANNERS

The teaching of manners should be done in a subtle, unobtrusive way. It is not good manners to make children self-conscious and uneasy because they feel aware of their deficiencies in training.

It should also be remembered that not all of the children coming to camp will have the same middle-class background training in manners that most teachers have. This calls for understanding in dealing with children whose background experiences made it acceptable to reach for what they want while it is still available.

Some of the manners that are taught as natural expressions of consideration and courtesy are listed below:

Take only small helpings so that there will be enough to go around. Second helpings can be had later after all have been served and the table setter has finished his portion.

Use the words "please" and "thank you" to show appreciation. These words help to establish a nice tone for the meal.

Sample a little of each kind of food. The cooks have worked hard to prepare appetizing food and it is only fair to give their food a fair try.

Wait until all are served before starting to eat so no one will feel left out.

Try to keep the table conversation generally interesting, quiet and in good tasts.

Do not reach in front of others for food.

Eat at a leisurely pace. Don't rush, grab, or gorge.

SERVING FOOD

The "Table Hopper" should be directed to carry only one dish of food at a time. He should be cautioned to be careful and to walk slowly in the dining room. This is done by counselor in charge of table setting.

In order to give the campers experience in serving themselves properly, the main dishes are passed family style around the table.

The children are encouraged to take a small helping of each of the foods passed to them. They are urged to sample the foods they say they do not like. Done with humor, the children will in most cases at least try the food. Children should not be forced or pressured into eating foods they reject. Meal time is not a time for issues.

The campers wait until all of the others at the table are served or until the counselor indicates that they are ready before they start eating. Consideration is always given to the table hopper so that he has time to eat, also.

In order to prevent many partially filled milk cartons from returning to the kitchen, one carton of milk is emptied before another isopened.

Ample milk to meet campers' health requirements is served. It may be necessary to limit the amount of milk to certain children who are washing down their food with milk, drinking it in place of water to quench their thirst or drinking it as long as it is available.

SPECIAL SITUATIONS

Junior counselors should take the initiative in giving guidance and counsel to students who may be inclined to glut themselves as a means of gaining attention. They should not hesitate to limit the amount of food in the interests of good digestion, example for others, balannce in diet, and common sense.

The junior counselor should be cautious in insisting that students eat all or any portion of the meal for the following reasons:

the student --

may feel ill
may be allergic to certain foods
may be restricted in diet for religious reasons

WHEN THE MEAL IS FINISHED

When the meal is finished, the table setter returns all unused food to the kitchen.

They scrape all plates and bowls at their table and stack like dishes to gether. These are carried to counter at dish washer. The glasses and cups are turned upside down in proper baskets, and silverware is put in proper containers.

After all tables are cleared, the tables are washed. As needed, the floor of the dining hall is to be dry mopped by an assigned group, with a junior counselor in charge.

E. HOUSEKEEPING

POINT OF VIEW

Some of the characteristics of camping are:
- It involves real work.
- It is a "do it yourself" enterprise.
- It is a shared experience.

One aspect of the camp curriculum in which these characteristics are especially in evidence is the "clean-up" of cabin quarters and other camp facilities.

OVERVIEW

"Clean-up" time:
- Some students will clean the cabin quarters.
- Some will concentrate on the surrounding ground.
- Some will clean other camp buildings where activities are held.
- Some will stay in the dining room, and assist in cleaning tables.

EXPECTED OUTCOMES

The student -
- feels that he is carrying his load of the work involved in camping
- learns that work can be enjoyed
- learns some of the skill involved in good housekeeping.
- feels satisfaction in a job well done.
- participates in and contributes to a group project
- learns the advantages of sharing the work load
- feels proud of his clean, sanitary quarters

PROCEDURES

Every student is involved in some way in the clean-up activity.

Remember:

The clean-up activity is a valuable teaching opportunity. The main purpose of the clean up activity is not just to end up with clean quarters; students grow in attitudes and understandings through their participation in this work.

Give ample orientation for clean up:

If possible, do your planning with the group before going to breakfast so that every student has a clear idea of what he is going to do.

Take time to demonstrate and take time to do the necessary job.
- The most efficient ways of sweeping (with the grain and cracks)
- without raising dust.

MAKING A BED

- A good way to make a bed.
- The best way to hang clothing and arrange personal gear.
- The use of equipment provided in dorms for clean-up.

F. BEDTIME

POINT OF VIEW

With the proper planning and a good approach, the campers can be led to view bedtime not as an objectionable and necessary nuisance but as a welcome activity to be anticipated because of the pleasant tone and enjoyable activities associated with it.

OVERVIEW

Bedtine follows the evening program, which ends at about 9:00 P.M. The students go to their dorms, wash, take care of toilet needs, and dress for bed.

EXPECTED OUTCOME

The student:

gets a good night's sleep.
gains a sense of independence and maturity in sleeping away from home.
gains a feeling of security and protection in being cared for.

PROCEDURES

GATHER GROUP TOGETHER FOR SHORT DISCUSSION

Gather group together as soon as they are ready.
Give brief orientation about what they are to do, how they are to do it.
Explain rules about need for reasonable quiet in getting ready for bed so that others will not be disturbed.
Remind about cabin group decisions about safety; running, horseplay, etc.
Suggest cutting down on drinking.
Remind about brushing teeth and washing.
Explain precedures about going to toilet after group is settled.
Explain about awakening in the morning and about rising times and procedures.
Remind that junior counselors will be on duty at all times.

ESTABLISH TONE IN CABINS

The Junior counselor can do much to set the tone by his own example.

The junior counselor should try to be:

calm, assured and obviously in control of the situation.
considerate, friendly and courteous in manner. patient.

SUPERVISE CAMPERS AS THEY GET READY FOR BED

Allow talking (not boisterous) during this "getting settled" period.
Wait until later for complete quiet.
Refrain from trying to communicate with student from a distance. Go to him. Wait until you are closer to him before you speak.
If there is some need to speak to the whole group, do not try to speak above the voices of the students.
Give the hand sign and wait for all to get quiet.
Wait until you have something important to say before you speak to the whole group.
Avoid too many interruptions.
Be alert to students who may be chief contributors to noise or confusion.
Circulate among the campers.
Flashlights should be put in suitcases on arrival at cabin for bedtime.

G. KEEPING SAFE AND WELL AT CAMP

The first responsibility of the camp staff for the students is to keep them safe and well.

It is important that a carefully planned program of health and safety be developed for and with the boys and girls in camp because the environment, activities, and potential hazards are new in their experience. The very goal of providing new experiences leads to increased hazard.

There is little room for "goofing" in safety through procrastination and rationalization. The facts are clearly seen by the student.

Over-exposure to the elements results in illness.
Unsafe conduct results in injury.
There can be no place at camp for boys and girls who jeopardize not only their own well-being but that of their fellow students.
A sick camper is taken home for treatment.
An injured camper is taken home for treatment.
A student who demostrates that he is hazardous either by attitude or behavior is restricted to whatever degree is necessary in order to protect himself and his fellow.

The health and safety program is an essential part of every activity in camp and out in the field. In a program where students are engaged in activities spread out over a large area, the health and safety program must be decentralized around each teacher as an important unit in the organization. The teacher in charge of the activity thus becomes the person responsible for the health and safety program for that activity.

The Camp Director, and the camp committee, are directly responsible for the overall health and safety program at camp. Together they plan a team approach in which every counselor understands his responsibilities and develops the skills necessary for him to fulfill his function in the health and safety program.

DESCRIPTION OF HEALTH AND SAFETY PROGRAM

There are certain activities that are included in the program primarily because of their contribution to student health and safety. The following activities, described in this section are;

Eating nourishing well-balanced meals at camp.
Resting and relaxing. --- Caring for personal hygiene and cleanliness.
Keeping the camp quarters and equipment clean and orderly.
Providing care in emergencies.
Giving first aid in case of injury - Getting lost in the Outdoors
Protecting against fire. - - - - - - - Communicating; in emergencies.
Keeping safe from lightning.

8. EVALUATING CAMP EXPERIENCES

Evaluating has proved to be a most helpful means of guidance in the development and refinement of the program.

The most severe critics of the program are the members of the camp staff themselves. In a program where experimentation is being carried on continuously, it is necessary to provide for opportunities for objective evaluation in innovations.

Each classroom teacher and junior counselor is invited to make an oral and a written evaluation of the program he has participated in during his week at camp.

The parents are able to judge the value of the program from the post-camp learnings and attitudes that are observed at home.

Two of the evaluation opportunities for campers are presented in the following descriptions:

- the last day
- questions for campers

EXPECTED OUTCOMES OF EVALUATION MEETING ON THE LAST MORNING

The camper:

- adopts a constructive, positive approach toward helping others
- learns to withhold judgment until he gives objective consideration to all evidence
- increases his insight into his own behavior and feelings
- gains a desire and ability to make some contribution to the discussion
- gains a clearer idea about the values of the camp program as a phase of his educational program
- sees relationships between school and camp that will lead to greater insight and will enrich post-camp experiences
- learns lessons in living together that can improve his relationships with his family
- expresses constructive suggestions for improving specific aspects of the school camp program

Procedures

Plan in Advance

Planning for the last evaluation meeting should begin on the first day that the campers arrive. The teacher will begin making written and mental notes regarding symptoms that will aid him in understanding the needs of the group. He will discuss his impressions with his co-workers in order to be prepared to help the campers grow in attitude, behavior, and understanding themselves.

During the orientation discussion, the teacher will continue his preparation for the last day evaluation. He will inform the group that the goals and guidelines they formulate on Monday will be discussed later in the week during the last meetings.

Throughout the week the teacher will be sensitive to any leads that might indicate need for growth in camper attitudes and behavior.

Establish "Tone"

The most important aspect of a successful evaluation is the development of a spirit or "tone" that encourages the following:

The camper feels
- secure in being with friends. He has come to know his teacher and his fellow campers well through the intimate give-and-take of a large family living and through the sharing of many experiences.
- that he is a part of a very special experience. He finds an emotional and spiritual indentification with the American heritage of explorers the pioneers gathered around the campfire at the end of a worthwhile common endeavor.
- trust in being able to express personal thoughts without fear of ridicule.
- that honesty and sincerity are the watchwords in the discussion

Set the Stage

The physical setting can contribute a great deal toward achieving the desired "tone" for the last pow-wow.

Plan for a good audience situation.
- arrange the seating so that every person can see and hear every other person.

Promote a feeling of unity in the group.
- as far as possible seat the campers in a complete circle so that everyone feels that he is a part of the circle group.
- gather in a beautiful spot or favorite place.

Develop a theme for the setting.
- sharing ideas around the "Round Table"
- make use of symbolism. Let a tree represent some major contribution or trait of the camping experience such as learning, friendship, cooperation, work, etc.

Guard against interruptions during meeting.
- encourage all campers to go to the toilet before the meeting.
- separate campers who might contribute to each other's distraction.
- select a meeting place that will not be disturbed by traffic.

Make a Good Approach

The junior counselor or teacher can do much to promote a desirable tone by observing the following techniques:

Have the campers come to the meeting area quietly and in good order.

Make effective use of voice. The teacher's voice is an important factor in establishing the tone of the meeting.

Use a matter-of-fact, business-like manner in taking care of seating and final details of preparation.

Use a warmer, more expressive quality of voice in developing the theme of a meeting. A friendly, sincere, interested voice contributed to the success of the pow-wow.

Encourage an informal, personal atmosphere.

Encourage Active Camper Participation

- Use whatever outline you may feel you need as a flexible guide rather than a blue-print to follow.
- Be ready to move into areas of discussion that you have not anticipated but try to relate the ideas to one of the objectives for the meeting.
- Be careful in using devices for symbolism or analogy so that they do not overstructure the meeting.
- Lead out with simple questions that are easy enough for all to answer, such as:
  "What did you enjoy most about camp?"
  "If you could remember only one thing about camp, what would it be?"
- Guard against over teacher-domination. Lead the campers to feel that this is their meeting.
- Refrain from using such comments as:
  "I would like for your to . . . . . ."
  "I want you to . . . . . ."
  "I think . . . . . ."
  "That is the word I wanted you to say."
- Promote a feeling of successful participation by campers. When a camper offers a reply that is not correct, do not discourage him by answering, "No, that is not correct." This will often dull the enthusiasm, not only of this child, but also of others in the group. Try to find some element of truth in his reply and build upon it. Or, give recognition to it as good thinking and use it as a means of involving others more deeply in the discussion.
- Discourage a conversational monopoly by a few and attempt to draw out the more retiring camper. Be sure that questions directed to shy campers are easy enough to insure successful answers.

Promote Creative Thinking

- Creative thinking is more than a way of arriving at ideas; it is an end in itself.
- Use questions that are thought-provoking, Phrase your questions so that they cannot be answered solely with a simple "yes" of "no"
- By sparing in the use of questions that merely ask for a recall of a particular word.
- Challenge assumptions and ideas based on shallow thinking.
- Encourage controversy. Differences of opinion can contribute to good creative thinking under the subtle direction of the counselor.
- Help the campers to arrive at a new generalization, and to gain added perspectives and deeper insight.

Encourage Constructive Evaluation

Some campers tend to be very critical of themselves and their fellow campers. They may see clearly that they have fallen short of living up to the letter of the rules they established for themselves. Were the group to concentrate upon failure, they could come to feel that the whole week was a failure.

The teacher needs to help them realize that it is possible to fail in specific ways and still have a very successful experience. It may be

that the rules and goals were unrealistic. This should be considered. Perhaps the failure was limited to but a few campers. A vocal minority my give the impression of representing the whole group.

If the failures were more in evidence during the beginning of the period,help the camper look for evidence of improvement as period progressed. Emphasize the progress that was made. How was the progress achieved? What have we learned that would help us if we were to stay at camp for a week?

If a teacher finds it difficult to guide a phase of the discussion that is yielding only negative results, he should feel free to terminate that phase by introducing an entirely new subject for discussion.

Help Campers Identify Important Values and Concept

After participating in the kaleidoscopic program of camp activities, the camper is filled with many merging impress ons and interests. Many of the goals, values and concepts have been suomerged in the excitement of the activities at camp.

There is need to help the camper see the activities more clearly in relationship to the goals and concepts established with them. There is need to help him understand the important values of his experiences.

Some of the learning questions that can be used to guide and direct the pow-wow discussion are listed below:

What is the most important thing you have learned this period at camp?
Why do you feel it is important?

Learning about Ourselves

- Have you learned anything about yourself this period that you did not know or were not aware of before?
- What did you learn?
- How did you feel when you first arrived at camp?
  How many of you felt a little uncertain or apprehensive?
- Have you learned that most of us are pretty much alike?

Living Together

- On the first day we developed a set of guidelines and rules that we thought would help us have a better week. Were theyhelpful?
  How did they help?
  Were they good rules?
  What changes would you suggest?
  Did we follow the rules reasonably well?
  Did we improve in accepting responsibility for following the rules as the period progressed? Has democracy really worked at camp? Explain.
  What have we learned about living together in harmony?
  How can we use these lessons in improving harmony at home?
  At school?
  What did you think about these cabins when you arrived?
  How do you feel about them now? Explain the difference.

Friendship

- Did you make any new friends this period?
  How did you go about it?
  What are some simple rules for making friends?
  Do all people really want to be friends? Discuss.
- Did any of you observe another camper do a helpful, friendly thing for anyone else? Tell us about it.
- Why are friends important?

Work

- Did you enjoy the work you did this period?
  Why did you enjoy it?
  What makes work fun?
  What have we learned this period that might make work at home more fun?
  How do you feel when you do work that is helpful to others?

9. Instructional Units

A. Unit I Water and Related Uses

B. Unit II Rocks and Soils

C. Unit III Living Things of the Season

D. Unit IV Forestry

UNIT I. WATER AND RELATED USES

Presentation by Specialist to large group	30 minutes
Questions and answers of large group	15 minutes
Related activities presented and supervised by classroom teacher - assisted by junior counselors and resource people	120 minutes

UNIT I WATER AND RELATED USES

Presentation by specialist Time 30 minutes
Questions and answers Time 15 minutes

I. Importance of Water

A. Water has many functions

1. Drinking
2. Preparing food
3. Washing
4. Removing wastes
5. Watering lawns and gardens
6. Turning wheels of hydro-electric plants
7. Produce steam
8. Irrigation

a. 5,000 years ago along the Nile
b. 30 trillion gallons per year delivered to U.S. farms

9. Water as a highway
10. Industry

a. 1960 - U.S. industry used 140 billion gallons of fresh water every day

11. Recreation

a. Beautifies landscape
b. Supports fish and wildlife
c. Swimming and beating

12. Support forests and grasslands

Water is "The key to Nature's treasure house".

II. The Water Problem

A. A varied problem

1. Many communities must ration their water supplies
2. Floods strike communities yearly
3. Drought is a recurring hazard in the Great Plains
4. Drainage is a common problem in the Coastal Plain (too little or too much, too soon or too late)

III. The Water Supply

A. There is just so much water

1. The earth's water supply remains relatively constant
2. The supply is always on the move

a. The water cycle - from clouds in the sky to land and ocean, and back to the sky again

3. Uneven distribution and irregular timing give rise to most problems of local water shortage or excess.
4. Average annual precipitation in the U.S. 30" or 4,300 billion gallons a day
5. Total stream flow derived from surface runoff and ground water amounts to about 8.5" a year or 1,200 billion gallons a day
(4 times the amount we use now)
(2 times the amount we'll need in 1980)

IV. Water for Human Use

A. The population today faces problems of water shortage, poor quality, sewage disposal and water pollution

1. Human needs increase with growing population
2. Expanding industry and rising standards of living require more water per person
3. Water needs are expected to double by 1980 - country will be using 2,300 gallons of water a day for every man, woman and child
4. Average daily use for all purposes increased from 600 gallons per capita in 1900 to 1,100 gallons in 1950 and 1,300 in 1955

V. Water for Industry

A. Water is industry's most important raw material

1. Industry now exceeds agriculture in total water withdrawals
2. Production of a ton of steel requires from 6,000 to 110,000 gallons of water
3. Production of a thousand yards of wollen cloth requires 40,000 to 51,000 gallons of water
4. Industrial users needed an average of 140 billion gallons of fresh water a day in 1960
In 1980 the amount of industrial water will be 363 billion gallons a day
5. Fortunately, nearly 98% of water withdrawn for industrial use is returned to streams and can be used again
6. Irrigation is the greatest single consumer of water

a. It takes 115 gallons of water to grow enough wheat to make one loaf of bread

7. Total water needs of urban areas will reach 29 billion gallons a day in 1980

VI. Controlling Pollution

A. Most uses of water damage its quality

1. Raise the temperature
2. Alter the chemical nature
3. Add to the suspended-sediment load
4. Wastes from factories, sewage, salts leached from the soil, sediment - all lower the quality of water
5. Control of water quality is a problem of management
6. During the next 20 - 30 years the principal problems will be efficient use of Water and quality control

VII. Water for Recreation and Wildlife

A. Water is the key element in many kinds of recreation

1. Indispensable to wildlife - which in turn provides recreation
2. Swimming, boating, fishing, hunting depend on suitable bodies of water
3. Recreational waters need to be clean and located in pleasant settings

VIII. Water Losses

A. Types

1. Flash runoff
2. Peak flows that exceed storage facilities
3. Sedimentation that reduces storage capacity
4. Evaporation that dissipates stored water
5. Pollution

IX. Watershed Protection and Conservation

A. Water problems are watershed problems

1. A watershed is any area of land that drains into a particular stream or body of water
2. It is within watersheds that communities can manage their water resource to best meet their own needs
3. Water control and conservation cannot be separated from soil conservation
4. Local, State and Federal agencies cooperate in planning, financing and carrying out projects under the Watershed Protection and Flood Prevention Act.

a. These projects combine soil and water conservation on the land with control and use of runoff by means of upstream structures in small watersheds

WATER AND RELATED USES

Activity Period

Step I

Time 5 minutes

I. Organize Group

A. Designate meeting place.

B. Check to see if everyone is present.

C. Tell location of work area.

D. Total time 120 minutes.

RELATED ACTIVITY

Step II

Time 15 minutes

Related area Conservatio Language Arts

Conservation area Water

Project: Review and discussion of Hydraulic Cycle and Management of Water.

Materials: Prepared question sheet, pencils, chart of Hydraulic Cycle.

Objectives: To review ideas presented by specialist.
To practice discussion technique.
To understand the importance of water management.

Procedure: Refer to discussion sheet in notebook.
Develop concepts by questions and answers.
Fill out sheet.

Suggestion: Use only in case of rain. If not raining, omit and do later or back at school as review.

THE HYDROLOGIC CYCLE AND MANAGEMENT OF WATER

Nearly every community in America has a water problem. One-fourth of the population today is troubled with water shortages, water quality, or both. And the prospects are for even more difficulty in the future. At the same time floods are a major problem in some areas.

Why this growing concern over water? Is there less water than formerly, or are we simply using more? Where do we begin to cope with the water management problem? These are some of the reasons for our study of water.

QUESTIONS - True or False

_____1. A watershed is that area of land drained by one stream or river. It is a natural division of land.

_____2. Ohio receives an average yearly rainfall of 37.7 inches which amounts to 74 billion gallons each day.

_____3. Of our annual rainfall, an average of 50 billion gallons is evaporated or used by plants each day.

_____4. The raminder, some 24 billion gallons, runs off through streams and rivers. It is this portion called runoff which we tap for municipal, industrial, and farm use.

_____5. Water cannot be destroyed although we may use it unwisely or, through pollution, damage its quality.

_____6. The ground water table is usually at its lowest level in the spring of the year.

_____7. Water runs uphill.

_____8. Flood damages may be reduced by soil conservation practices.

_____9. The accumulation of silt or mud in municipal water supply reservoirs is not a problem in Carroll County.

_____10. Farm ponds are a method of storing runoff waters from time of plenty until time of shortage.

_____11. Raindrop splash is not a major cause of soil erosion.

_____12. Soil conservation practices decrease the infiltration or "insoak" of water into soil.

_____13. Irrigation systems, tile drains, retention structures, surface and outlet ditches, are water management practice.

_____14. The Leesville Reservoir is an example of a water supply structure.

_____15. The DOVER DAM and Leesville Reservoirs are examples of flood control structures.

RELATED ACTIVITY

Step 111

Time 30 minutes

Related area Science

Conservation area Water

Project: Preserving by observing and collecting with the senses - sight, touch and smell.

Materials: Collecting containers, small bottles, aquatic net.

Objectives: To apply some of the concepts presented in the large group discussion.
To practice using the senses.
To collect
To discover and explore.

Procedure: Tell students the objective of the hike is to discover ideas related to water.
Caution students about safety near water.
Check equipment - pass out bottles - in pairs.
Conduct group to field area.
Have children work in pairs - collecting items in and near water.
Also have each pair get several samples of water (1) one sample of water they think is very clean and (2) one sample of water they thing is dirty. (3) lake water (4) stream water (5) stagnet water.
Return to work area.

RELATED ACTIVITY

Step IV

Time 30 minutes

Related area Language Arts

Conservation area Water

Project: Identification of collected materials back at work area.

Materials: Pencil, paper, reference books, charts, collected materials, samples, microscopes, magnifying glasses, medicine dropper, slides.

Objectives:
To identify as many objects collected as possible.
To relate objects collected to knowledge of water.
To practice using reference materials.
To emphasize the point - problems of water pollution.

Procedure:
Have two children pick a work area and remove collected objects from containers.
Explain that as many objects as possible should be identified.
Work in pairs on microscopes - take turns
Move about helping when needed.
Make notes of identifications.
Mount plant samples in notebook.

RELATED ACTIVITY

Step V

Time 30 minutes

Related area Art

Conservation area Water

Project: Sketch of a water or landscape.

Materials: Pencils, charcoal, white or gray drawing paper, sketch board.

Objectives: To relate art to water uses.
To enjoy an art activity in the out-of-doors.
To realize the aesthetic qualities of nature.

Procedure: Pass out materials.
Instruct when necessary - encourage choice of object - water or landscape.
Work outside.
Water color painting of sketch may be undertaken back at school.

RELATED ACTIVITY

Step VI

Time 30 minutes

Project: Fishing

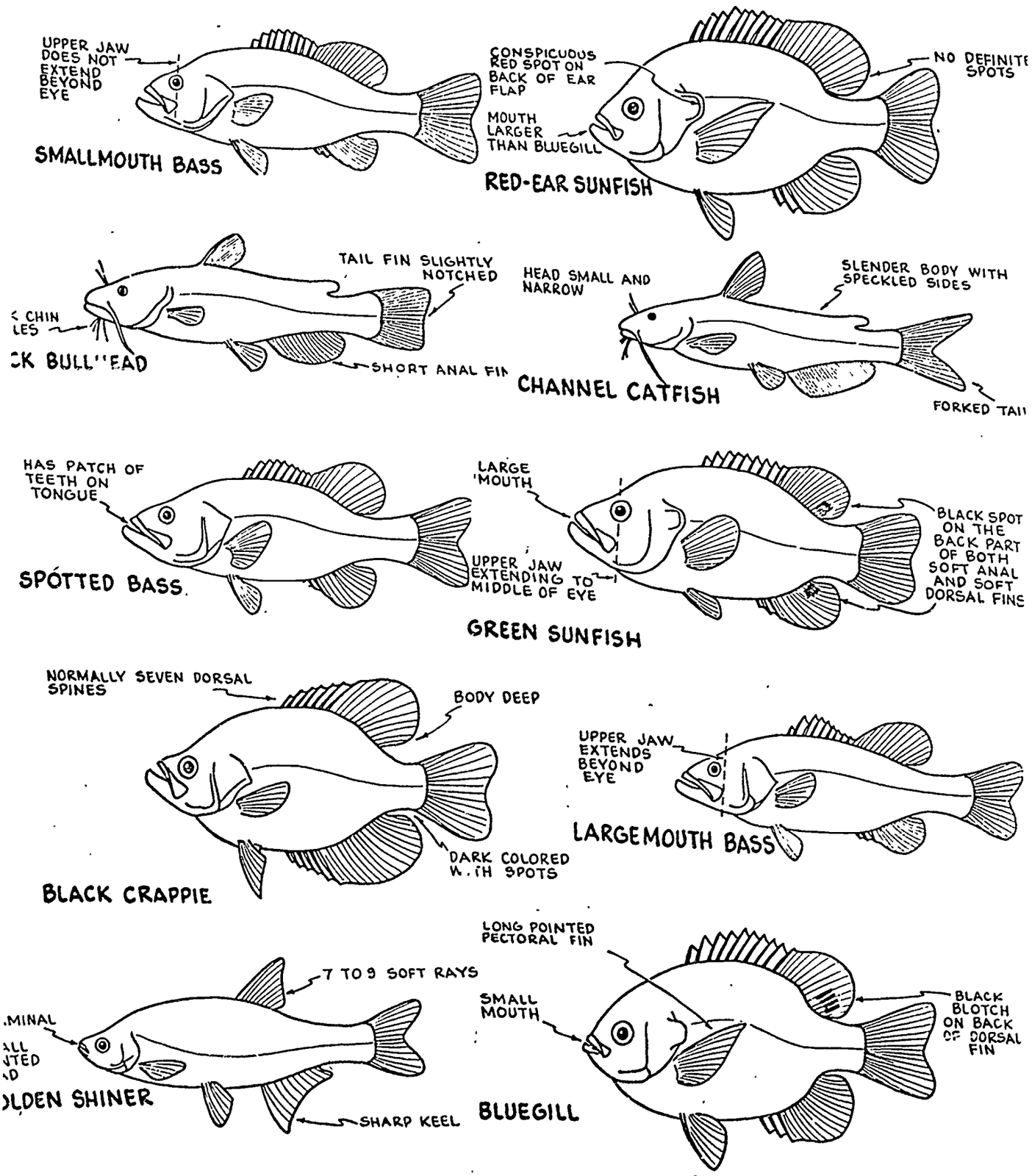
Materials: Poles, rigs, bait

Objectives:
To relate fishing to water and conservation.
To give students the experience of fishing.
To identify fish caught.
To have fun.

Procedure:
Caution students about safety near water.
Caution students about safety with fishing hooks.
Demonstrate process of baiting hook.
Pass out equipment.
Have students spread out.
Take pictures of catches if desired.
Identify fish caught. Refer to chart.
Return catch back to lake unless large enough to keep.

End of Period

Fish Observation Chart



UNIT II. ROCKS AND SOILS

Presentation by Specialist to large group	30 minutes
Questions and answers of large group	15 minutes
Related activities presented and supervised by classroom teacher - assisted by junior counselors and resource people	120 minutes

UNIT II ROCKS AND SOILS

Presentation by specialist 30 minutes
Questions and answers 15 minutes

Soil is the basis of life - food, clothing, and shelter. Civilization as we know it is dependent upon the preservation and wise use of a few inches of topsoil. In the past, we have too often exploited and exhausted our national soil resources. Now, however, the progressive farmer and landowner uses methods of soil management which provide for the conservation and improvement of these resources. However, the success of present day conservation programs is dependent upon widespread understanding and support by the general public. These are some of the reasons for our study of soil.

I. The Importance of Soil

A. Land takes up only 29% of the entire surface of the Earth.

1. not even all of this is usable.

2. on this amount of land man must grow the things he needs to make everything that he uses for food, clothing, and shelter.

3. soil is necessary for two reasons: (1) it is the foothold for the plants we grow; and (2) it is the place where plant nutrients are made and stored.

II. Soil Parts

A. Soil is made up of four basic and fairly common parts. They are: Air, Water, Organic Material, and Minerals.

1. Minerals - primarly quartz and feldspars

2. Air - primarly 21% oxygen, 78% nitrogen, 1% argon

3. Water - Hydrogen and Oxygen (H O)

B. Mineral Material

1. most important source of mineral material is rocks.

2. rocks are broken down into smaller pieces until the pieces are the size of a grain of sand or even smaller. (process called weathering)

3. three kinds of weathering - (1) chemical; (2) mechanical; and (3) organic.

4. example of chemical weathering - Rain - when falling through the atmosphere picks up Carbon Dioxide and forms a mild acid known as Carbonic Acid.

5. example of mechanical weathering - Ice - causing pressure in cracks much like that of a wedge.

6. example of organic weathering - Earthworms - in an acre area will often pass 40 tons of material through their bodies in a one year period.

7. additional examples are: sunshine, wind, frost, heating and cooling, freezing and thawing, and wetting and drying.

8. these processes release elements which by themselves, or in combinations called minerals, provide plant nutrients.

9. only 8 of the known elements are commonly found in rock formations. These 8 elements make up 98% of the weight of the Earth's crust.

10. most often found element is oxygen. It makes up 47% of the Earth's crust. Silicon is next making up 28%.

C. Organic Material

1. primative plants begin to grow in cracks and on the surface of rocks.

2. primative plants - Lichens, Mosses and Ferns - called PIONEER PLANTS.

3. after a short length of time these plants and primitive animals will die and other plants and animals will follow them - and die.

4. the cycle continues.

5. remains of plants and animals are also broken down into simple parts which in time return to the soil, air, and water.

6. decay process caused by - Bacteria, Molds, and Fungi - called DECOMPOSERS.

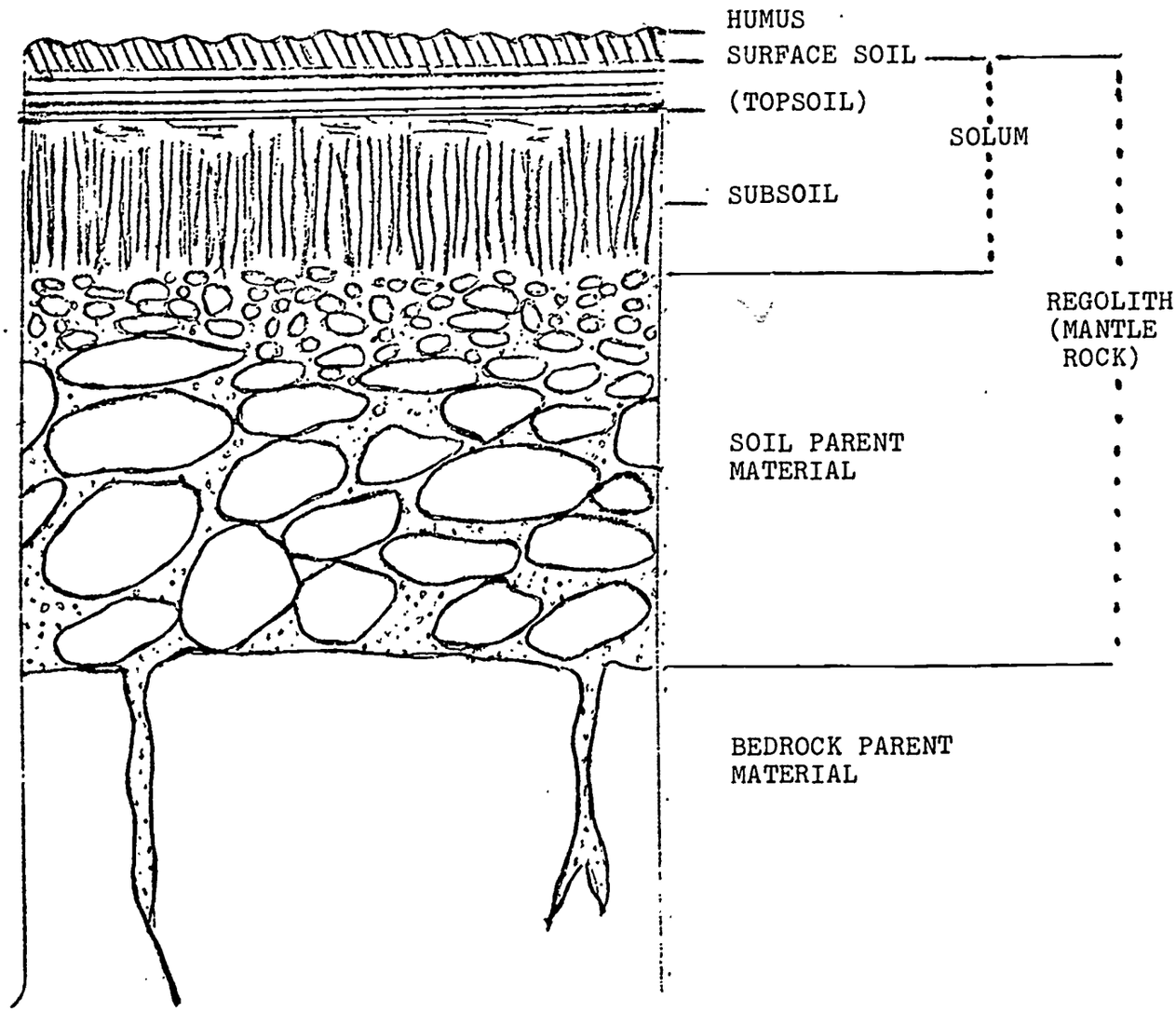
D. Soil Profile

1. Surface soil or topsoil; subsoil; and soil parent material. (both humas and bedrock lack one of the four necessary parts of a true soil)

2. Soil depth around the world averages between five and eight feet.

3. Topsoil depth averages between six and eight inches

4. Time needed to form one inch of topsoil probably averages about 500 years.



III. Erosion

A. Where there is soil, especially uncovered soil, there is erosion.

1. 3 basic types of erosion are (1) Sheet erosion - the top several layers of particles over a large area are removed; (2) Rill erosion - minature gullies up to 10 inches deep; (3) Gullying - a channel whose depth is measured in feet rather than inches.

2. erosion is the "pick-up and carry" of soil particles.

3. Four methods of moving soil particles -

a. Gravity - the most common
b. Moving air
c. Moving ice
d. Moving water

4. in our area, beside gravity, moving water is the most common.

5. some natural erosion is occuring constantly

6. unnecessary man-caused erosion as a result of plowing, over-grazing, or use of forest resources without re-foresting, has cost man unnumbered acres of producing land.

7. it takes only a few short years for man to allow soil to be washed away.

8. since soil is an irreplaceable natural resource, man-caused soil erosion must be stopped. This can only be done by a wiser management of the land resources which still remain. This is the responsibility of each and every citizen.

IV. Soil Terms

A. Abrasion	As earth materials are carried they may be used further as grinding and scouring tools to wear away and break up other rocks. Also called CORRASION.
B. Aggradation	The process whereby places below the local grade are filled up.
C. Anticline	The term given each UP-FOLD.
D. Decomposition	Chemical weathering

E. Decomposition or Chemical Weathering includes:

1. Carbonation — Certain elements unite with Carbonic acid (water + carbon dioxide) and the chemical reaction which results weathers the rocks apart.

2. Hydration — Hydration is the taking on of water in chemical combination; the accompanying "swelling", or increase in bulk, causes the rocks to "give" and fall apart.

3. Oxidation — When oxygen in the air unites with certain elements in the rocks causing the original material to weaken and rot.

4. Solution — Solution is the removal of materials which cement the rock particles together.

F. Degradation — The process by which weathered rock fragments are removed from their places of origin. The most familiar form is called EROSION. Such things as: GRAVITY, RUNNING WATER, WATER IN THE GROUND, MOVING SNOW AND ICE, WIND AND WAVES.

G. Deposition — The actual act of filling up low spots.

H. Diastrophism — The distortions which result from the constant stress and strain of the earth's crust.

I. Differential weathering — Under a given set of conditions, different kinds of rock will ordinarily weather at different rates because of differences in mineral composition and the degree of ease with which water may penetrate into the rock. Even on an outcrop of a single type of rock the rate of weathering may vary from place to place, either because of minor variations in the composition or texture or because of local differences in the numbers and sizes of joints and crevices that allow penetration of water. If the weathered material is continually being removed, the places of most rapid weathering gradually are etched out to form low spots in the surface, while places where weathering is particularly slow come to stand above the rest.

J. Element — A substance which has resisted being broken down by Chemical means. Of the 102 known chemical elements which exist in the earth's crust, only 8 are really abundant. These 8 elements make up 98% of the known crust of the earth. They are: Oxygen - 47%;Silicon - 28%; Aluminum - 8%; Iron - 5%; Calcium - 4%; and Sodium - Potassium - and Magnesium - 2 - 3% each.

K. Erosion — Is the "pick up and carry" process of weathered materials.

L. Faulting — The displacement (which means to put out of place, move from its usual place or position) of large blocks of the earth's crust along cracks in the earth called joints.

M. Folding — Is the wrinkling of the earth's crust, in tight folds, very much like a corrugated roof.

N. Humus — It is important to note that the humus is partially decayed organic matter; if decay is complete, there is no humus. Humus is usually black in color.

O. Igneous rocks — Igneous rocks are those which are molten or have cooled and become solid after being in a molten state. Such rocks are formed within the earth, where temperatures are high enough to melt solid rock. As they cook and solidify, there is time for crystals to grow to relatively large sizes and therefore the rocks are usually coarsegrained. Common examples are: Granite and Basalt.

P. Joint — Also cracks or fractures. But in this case, the joints permit the water of the ground to circulate more freely within the rocks.

Q. Metamorphic rocks — These rocks which have undergone marked change from their original condition. Most of the change is the result of heat and pressure happening occasionally as a result of burial within the earth, assisted by the cementing action of underground waters and quite often by crystal deformation. Changes include: Sandstone into Quartzite; Limestone into Marble; and Shale into Slate.

R. Mineral — Any natural component of the earth's crust. In minerals, the elements are united to form substance which are very different from any of the ingredient elements.

S. Organic weathering — Expanding roots ferret out cracks and crevices and split the rocks; burrowing animals wedge, pry, and remove materials.

T. Regolith — Any rock which has been broken away from a solid mass (bedrock) of rock as a result of weathering.

U. Sedimentary rocks — These are made up of sediments, or particles. They represent the accumulation through time of layer on layer of deposited materials. Some are carried and laid down by the wind, others by moving water or glaciers. Most of them are finally laid down in the great accumulation basins of the oceans. Each depositional layer is a Stratum, and a series of them are Strata; hence sedimentary rocks are normally referred to as Stratified. Common examples are: Sandstone, Limestone, Shale, and Conglomerate.

V. Strata — Two or more associated stratum; a series of layers.

W. Stratum — A single depositional layer.

X. Syncline — The term given to each Down-fold.

Y. Vulcanism — Has to do with molten rock which may become a volcano or a lava flow or any number of structures under the earth's surface crust.

Z. Warping — Is merely a bending of flexing, without folding, of the crustal material.

AA. Weathering — Is simply the breaking up of rocks by chemical and mechanical means. Basically it is making little pieces of rock out of big ones.

ROCKS AND SOIL

ACTIVITY PERIOD

Step I

Time 5 minutes

I. Organize Group

A. Designate meeting place.

B. Check to see if everyone is present.

C. Tell location of work area.

D. Total time 120 minutes.

RELATED ACTIVITY

Step II

Time 45 minutes

Related area Science

Conservation area Rocks & Soil

Project: Looking for and discussing erosion problems.
Collecting soil samples.
Collecting rock samples.

Materials: Soil cans, collecting container, soil core cutter, soil auger, rock hammer.

Objectives: To look for examples of rock and soil erosion. To investigate rock and soil areas and collect samples.

Procedure: Tell the students that the object of the hike is to become more familiar with rocks and soils - to look for interesting things related to rocks and soil.
Check equipment.
Conduct the group to the field area
(each class will be assigned an area).
Investigate interesting finds related to rocks and soils - discuss.
Collect several different soil samples and rock samples.
Return to work area.

RELATED ACTIVITY

Step III

Time 40 minutes

Related area Lang. Arts

Conservation Area Rocks & Soil

Project: Identification of collected materials back at work area.

Materials: Pencil, paper, reference books, charts, collected materials, samples, red and blue litmus paper, magnifying glass, scrapers, pennies, HCI, water, tissues, rock, chart, rock and soil identification sheet, soil test kit.

Objectives: To identify as many objects collected as possible.
To relate objects collected to knowledge of rocks and soils.
To practice using reference materials.
To start a rock collection.

Procedure: Have two children pick a work area and remove collected objects from containers.

Soil - Using litmus paper - check acidity of soil.
- Look for and identify different items within the soil.

Rocks -Explain that as many rocks as possible should be identified.
-Work in pairs - use all the reference materials.

Explain the use of identification sheet.

Move about helping when needed.

Demonstrate soil test.

Rock and Soil Identification Chart

Sedimentary Rock	Color	Where Found	Unusual Characteristics
Sandstone Made up of grains of quartz sand cemented together.			
Limestone Composed almost completely of calcium carbonate. Often contains fossil shells.			
Conglomerate Consists of pebbles cemented together by filling of fine sand.			
Shale Formed from mud and clay. Can easily be split into thin layers.			

Soils

Location of Sample	pH	Color	Texture-size of particles				
			Gravel	Sand	Silt	Clay	Humus

RELATED ACTIVITY

Step IV

Time 30 minutes

Related area Conservation

Conservation area Rocks & Soil

Project: Reviewing concepts learned.

Materials: Pencil - review sheets.

Objectives: To reinforce knowledge of subject.

Procedure: Refer to review sheets in notebook.

Start - finish for homework.

Move about - help when needed.

Give test if you desire.

Suggestion: Do only in case of rain, or if time permits.
If time is not available, do later on back at school.

End of period

1. What percentage of the earth is land? (1)_____

2. What three things come entirely from the sun and the soil? (1)_____

(2)_____

(3)_____

3. Give two reasons why soil is necessary. (1)_____

_____

(2)_____

_____

4. What are the four soil parts? (1)_____

(2)_____

(3)_____

(4)_____

5. Name the most important source of mineral material. (1)_____

6. Another word that means the breakdown of rocks into smaller and smaller pieces. (1)_____

7. Give three examples of the above. (1)_____

(2)_____

(3)_____

8. This is formed when rain and carbon dioxide combine. (1)_____

9. List the four kinds of chemical weathering. (1)_____

(2)_____

(3)_____

(4)_____

10. What happens when water freezes? (1)_____

11. List the two most common elements found in the earth's crust.
(1) _____
(2) _____

12. List the six other elements and percentages commonly found in the earth's crust.
(1) _____
(2) _____
(3) _____
(4) _____
(5) _____
(6) _____

13. Name three primative plants.
(1) _____
(2) _____
(3) _____

14. What are these plants called?
(1) _____

15. Three things that aid the decay process.
(1) _____
(2) _____
(3) _____

16. What are they called?
(1) _____

17. What is another word for dead and decaying plant and animal material and organic wastes?
(1) _____

18. List the five layers in the soil profile.
(1) _____
(2) _____
(3) _____
(4) _____
(5) _____

19. Which of these layers are the "true soil" layers?
(1) _____
(2) _____
(3) _____

20. How deep is the average soil? (1)_____

21. How deep is the average topsoil? (1)_____

22. How long does it take nature to form one inch of topsoil? (1)_____

23. Where is it easiest for erosion to happen? (1)_____

24. List three kinds of erosion. (1)_____

(2)_____

(3)_____

25. How is erosion defined? (1)_____

_____

26. What are four ways of moving soil particles? (1)_____

(2)_____

(3)_____

(4)_____

27. Besides gravity what is the most common agent of erosion in our climate? (1)_____

28. What kind of natural resource is our soil? (1)_____

QUESTIONS - TRUE OR FALSE

_____ 1. Each person needs 2/3 of an acre of land to provide food for a balanced diet as well as other necessities of life.

_____ 2. Soil is composed of mineral matter, organic matter, water, and air.

_____ 3. The black substance found in topsoil is organic matter or humus.

_____ 4. Soil fertility refers to the mineral content of soil. Minerals such as calcium, nitrogen, phosphorous, potassium, etc.

_____ 5. A soil profile is made up of topsoil, subsoil and parent material.

_____ 6. Soils are classified or named according to their proportion of sand, silt, and clay. An example: Alexandria silt loam.

_____ 7. Soil is a non-renewable resource.

_____ 8. Land may be classified according to its capability as cropland, grassland, woodland, wildlife land, etc.

_____ 9. Muddy water is not an evidence of soil erosion.

_____ 10. Three forms of soil erosion are sheet, rill and gully.

_____ 11. Over a million acres of productive land pass into agricultural use each year in the United States.

_____ 12. Soil conservation may be defined as the wise use and care of the land for all the people.

_____ 13. Contour farming is "farming on the level."

_____ 14. Contour strip cropping, grassed waterways and diversions are soil management practices used to control erosion.

_____ 15. A soil and water conservation district is "people" working together under Ohio law to plan and adopt a soil and water management program.

UNIT III. LIVING THINGS OF THE SEASON

Presentation by Specialist to large group	30 minutes
Questions and answers of large group	15 minutes
Related activities presented and supervised by classroom teacher - assisted by junior counselors and resource people	120 minutes

Unit III Living Things of the Season

Presentation by specialist - 30 minutes
Questions and answers------- 15 minutes

Wildlife

I. Importance of Wildlife

A. As recreational and economic resource

1. Mammals, birds, and fishes - recreational resource

2. Fish and wildlife - economic resource

3. $3 billion spent annually by hunters and fishermen

4. Millions hunt, fish, bird watch, and photograph wildlife each year

5. Public interest makes greater demands upon stocks of wildlife

6. Animals are being crowded out of their living areas by urban growth, expanding industrial areas, dredging of shorelines, pollution of streams and draining of marshes

7. Fish and wildlife resources must be adjusted to meet changing conditions

II. Water, Land and Wildlife

A. Necessities of wildlife

1. Abundant wildlife in an area indicates that the basic resources, soil and water are being wisely used

2. More private lands must be managed in ways that will preserve fish and wildlife

3. Fish and wildlife belong to everyone

4. When there are more animals than the habitat can support, the number must be reduced

5. Land and water will not produce fish and wildlife of the quantity and quality desired unless man helps with his scientific knowledge.

III. What Wildlife Needs

A. Basic necessities

1. Food, water, cover and living space ("habitat")

2. Any land can be for wildlife

a. streams - ponds - marshes - support waterfowl, mink, muskrats, beaver

b. wooded areas - support squirrels, deer porcupine

c. open range and grassland - support antelope, prairie chickens, grouse

3. Most kinds of wildlife require several kinds of "cover" to conceal nests and young, provide shade from the sun and shelter from the rain, allow escape from enimies and protect them aginst wintery blasts.

4. Food must be near.

5. Enough living space is necessary.

IV. Wildlife Management and Research

A. The practice of bringing fish and wildlife up to desired numbers and quality and then holding it in check is called "management". Research is a tool of management

1. Agencies concerned with fish and wildlife

a. State fish and game and/or conservation departments

b. U.S. Dept. of the Interior's Fish and Wildlife Service

c. Various national, state and local associations.

d. Colleges and universities

e. Private landowners

2. Most fish and wildlife management is up to the states

3. U.S. Fish and Wildlife Service manages more than 28 million acres of refuges and ranges

4. Each state fish and game department does research

5. The Fish and Wildlife Coordination Act make fish and wildlife part of the overall resources to be considered in Federal water development programs

6. Other Federal laws

   a. Federal Aid for the Restoration of Wildlife

   b. Federal Aid for the Restoration of Fish

V. Research Projects

A. Types

1. Reservoir Research

2. Selective Breeding of Fish

3. Fish Diseases

4. Farm Pond Management Research

5. Sportman-Farmer Relationship

6. Protection of Plants through "Systemics"

7. Seed Protection by "Education"

8. Wildlife management research

9. Pesticide Research

10. Exotic Bird Programs

11. Control of Blackbirds

VI. Future of Wildlife in America

A. Demands on our wildlife resources for food, industrial products and recreational use will increase.

1. Our civilization, so destructive of wildlife in the past, will be no less destructive in the future unless the public becomes "conservation conscious".

2. The survival of wildlife can never be taken for granted.

Plants (Four groups--phyla)

I. Thallophyta

A. Plants which have no stems, roots, or leaves.

B. Size ranges from microscopic to 200 feet.

C. Two classes

1. Algae

Diatoms, seaweed, pond scum

Live in water or damp places

Have chlorophyll and can manufacture their own food

Occur as a single cell, or masses of cells, all appearing similar

Supply food for both insects and fish

2. Fungi

Bacteria, yeast, mold, milaew, rust, mushrooms, puffballs.

Cannot manufacture their own food

Depend on living or dead animal or plant materials for existence

Reproduce by spores--except bacteria

D. Lichens

Contain algae and fungi

Alga manufactures food and fungus stores water and supports the plant

The first plants to fasten to rock and break it down to form soil

II. Bryophyta

A. Small plants--a few inches long--have simple leaves and stemlike and rootlike parts.

B. Mosses and liverworts

Liverworts are little, green plants with ribbon-like leaves growing flat on the back of trees in moist places, on wet rocks, or on the surface of the water. Consists of only one cell.

Mosses consist of many cells. They get their food and water through their root-like, hairy structures. They grow on trees, rocks, and soil in either wet or dry places. They grow close together.

III. Pteridophyta

A. They have true roots, stems, and leaves and produce spores, not seeds.

B. Ferns, horsetails, and club mosses.

Ferns grow mostly in shady, damp woods. Have feathery leaves. The leaves are above ground; the stem is underground with the roots.

Horsetails resemble a horse's tail and generally grow in moist places. Also called "scouring rushes", because they contain a glassy material and were once used to scour pots and pans. They have no real leaves. The green hollow stem produces the food.

Club mosses look more like mosses than ferns. They are classified with the ferns because of their structure and ways of reproduction. Commonly called ground pine, creep over the ground.

IV. Spermatophyta (seed plants)

A. Includes all grasses, wild flowers, shrubs, vines, cacti, and trees.

B. Known as seed producing plants.

C. Considered the highest and most complex.

D. Range in size from a fraction of an inch (duckweed) to 300 feet tall (redwood).

E. Some die in one season (annual) and others live year after year (perennial)

F. Some grow on land (trees), some in wet places (cattail), and other submerged under water (pond weeds).

G. Two classes

Gymnosperns--pines, firs, spruces. Have unprotected seeds that are usually borne in cones (conifers)

Anglosperns--oaks, grasses, wild flowers. Produce seeds that are enclosed in some kind of covering, usually called a fruit. Referred to as flowering plants.

H. Have five basic parts--roots, stems, leaves, flowers, and fruits.

1. Roots--the part that grows underground.

Anchorage is a primary function of the root system.

Absorption is another function.

Food storage is another function.

Extensive root system is necessary because of the quantities of water required by the plant.

2. Stem--all of the higher plant that is above ground except the leaves and reproductive structures.

Supports and displays the leaves.

Serves the important function of transportation of materials.

Serves for food storage.

Some photosynthesis takes place in young stems.

3. Leaf System

Photosynthesis is the primary function.

Protection is a secondary function.

Two types

1. Simple--no division of the blade into leaflet

2. Compound division of leaf into smaller individual leaflets

Arrangement

1. Opposite--leaves come out in pairs each pair arising from the same level on the stem.

2. Alternate--each leaf arises from stem singly and higher up on the stem.

3. Spiral--leaves come out in a spiral order

4. Whorled--three or more leaves arise at the same level on the stem.

Insects

I. Information

A. Economic Importance

1. One of the 50 classes in the animal kingdom

2. More species of insects than in all other classes of animals--700,000.

3. Include some of man's greatest enemies

Destroy food

Bite and sting

Spread germs

Destroy clothing, paper, wood

4. Provide a source of food for other creatures, including man

5. Serve as an ingredient in dyes, hair tonics

B. Metamorphosis

1. Change from the young to the adult

2. Types

Complete - egg, larva, pupa, adult

Gradual - egg, nymph, adult

Incomplete - egg, nymph, adult

No metamorphosis - egg, adult

C. Orders--(eight main orders-contain 90 percent)

3. Beetles (Coleoptera)

-fireflies
-tumble bugs
-June beetles
-potato beetles
-meal worm
-blister beetle
-weevil

8. Bees and wasps (Hymenoptera)

-ants
-bumblebee
-sawflies
-honey bee

6. Butterflies and moths (Lepidoptera)

-Cecropia moth
-Luna moth
-large emerald moth
-swallowtail butterfly
-monarch butterfly

7. Flies (Diptera)

-housefly
-mosquitoes
-fruit flies

4. True Bugs (Hemiptera)

-water bug
-bedbug
-stinkbug
-water strider
-chinch bug
-squash bug

20. Grasshoppers and crickets (Orthoptera)

-grasshoppers
-crickets
-roaches

-mantids
-walking sticks

1. Dragon flies (Odonata)

-damsel flies

5. Aphids (Homoptera)

-cicadas
-plant hoppers
-plant lice
-scale insects

D. Other Orders

1. Thysanura - bristle tails, fishmoths
2. Collumbula -springtails
3. Ephemeroptera - May fly
4. Plecoptera - stone fly
5. Isoptera - termite
6. Dermaptera - earwigs
7. Mallphaga - bird lice
8. Anaplura - head louse
9. Neuroptera - alder flies
10. Mecoptera - scorpion fly
11. Trichoptera - caddis fly
12. Siphonaptera - fleas

LIVING THINGS ACTIVITY PERIOD

Step I

Time 5 minutes

I. Organize Group

   A. Designate meeting place

   B. Check to see if everyone is present

   C. Tell location of work area

   D. Total time 120 minutes

RELATED ACTIVITY

Step II

Time 45 minutes

Related area Science

Conservation area Living Things

Project: Preserving by observing and collecting with the senses - sight, touch, taste, smell

Materials: Collecting container, pencil, notebook, collecting case, insect net, wild flower observation sheet.

Objectives: To apply some of the concepts presented in the large group discussion
To practice using the senses
To start a collection
To hunt for interesting objects

Procedure: Tell the students that the object of the hike is to become more familiar with living things - plants, insects, wildlife

Check equipment

Conduct group to field area

Hunt for interesting specimens - don't destroy

Plants - rules

(1) no wildflowers should be picked without permission

(2) some wildflower plants do not survive if the flower is picked

(3) the following is a list of plants that should never be disturbed:

Lady's slippers	Jack-in-the-Pulpit
Lady's Tresses	Birdfoot Violet
Fringed Gentian	Fawnlily
Bottle Gentian	Azaleas
Flowering Dogwood	Shooting Star
Anemones	Bluebells
Dutchman's Breeches	Bloodroot
Rose Gentian	Shony Orchis
Wild Lilies	

Study these with the sight-check observation sheet when found.

Have students note interesting finds in notebook-sketch or photograph with camera

Collect several species of insects, plants

Return to work area with collection

RELATED ACTIVITY

Step III

Time 30 minutes

Related area Language Arts

Conservation area Living Things

Project: Identification of collected materials back at work area

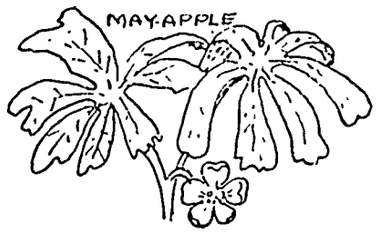
Materials: Pencil, paper, reference books, charts, collected materials, plant worksheet, samples, magnifying glasses

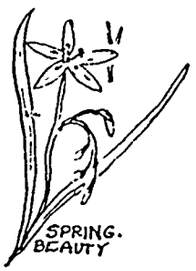
Objectives: To identify as many objects collected as possible
To practice using reference materials

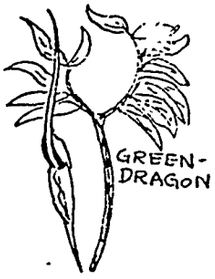
Procedure: Have children pair off and pick a work area
Identify as many objects as possible
Use reference materials and worksheets

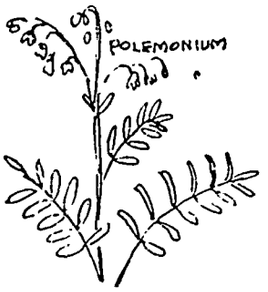
Wildflower Observation Chart

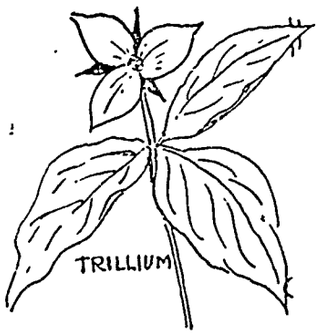
"I will be the gladdest thing under the Sun!
I will touch a hundred flowers and not pick one!"

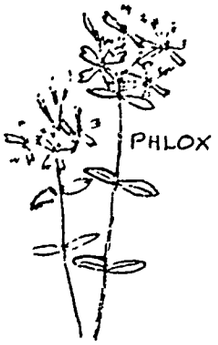


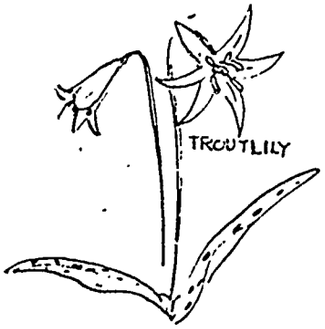




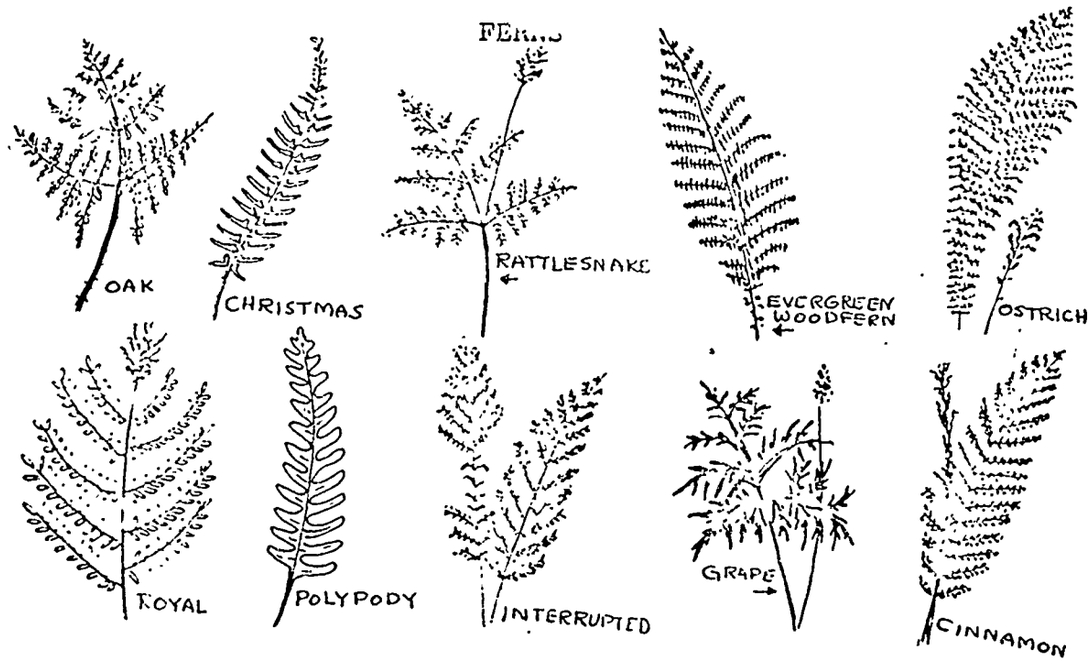




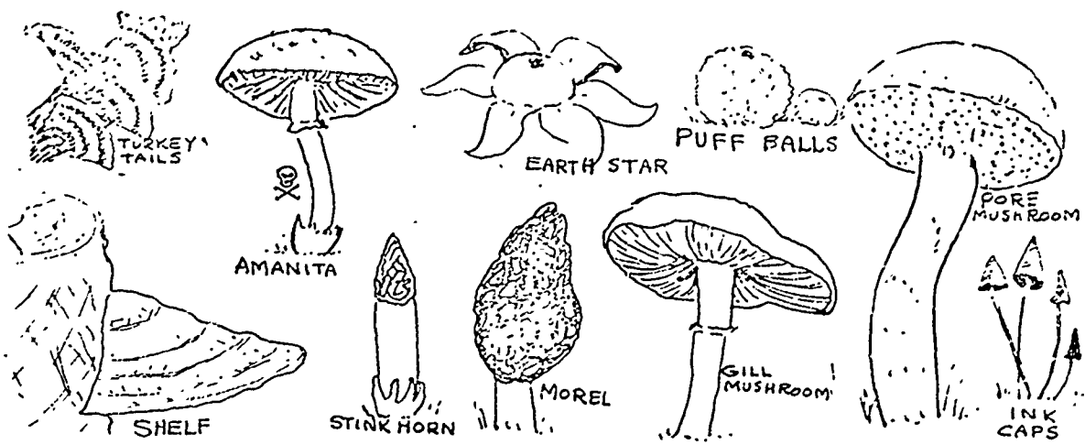




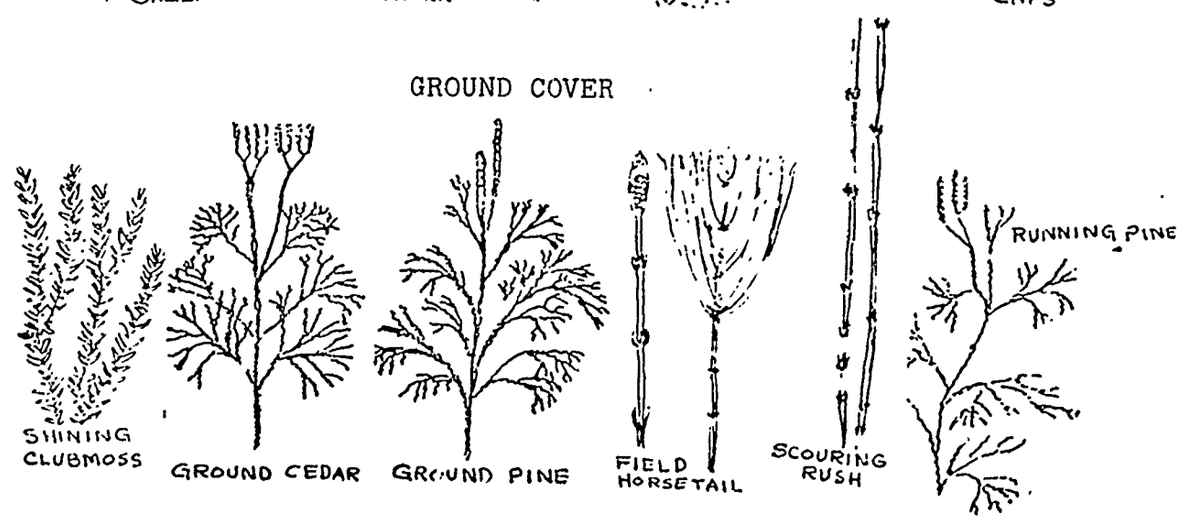
Ferns, Fungi and Ground Cover Observation Chart



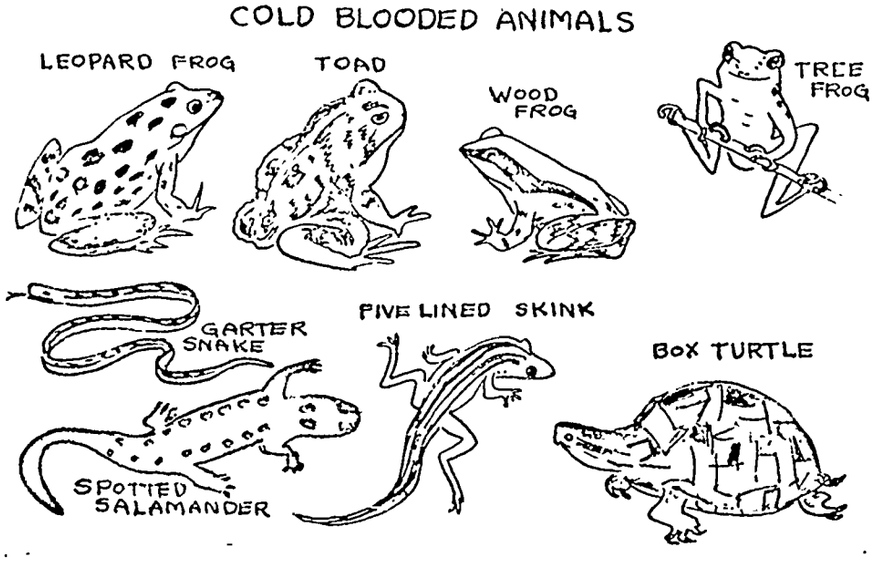
FUNGI

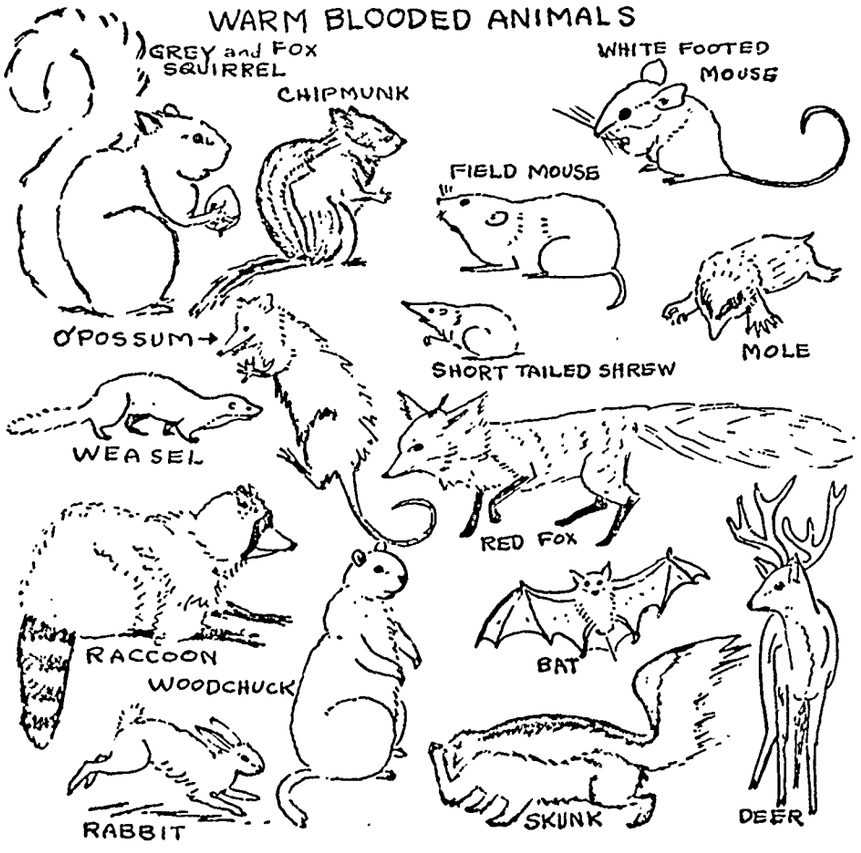


GROUND COVER



Animal Observation Chart





Insect Observation Chart

Antennae short and inconspicuous: long slender insects with long narrow wings. (Damsel flies and Dragon flies).

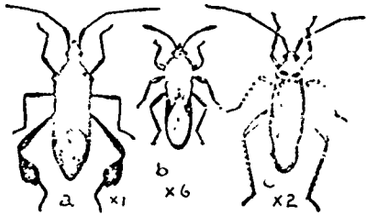
Order ODONATA

Front wings leathery, with veins; hind wings folded lengthwise. Mouth parts for chewing. (Crickets, Roaches, Katydids, Grasshoppers, etc.)

Order ORTHOPTERA

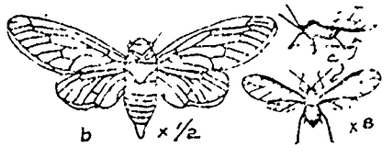
Without large pincers at the end of the abdomen. (Beetles).

Order COLEOPTERA



Front wings leathery at their base (a), membranous and overlapping at their tips (b); mouth parts a tube for sucking, usually extending from underside of head in backward direction. (True Bugs).

Order HEMIPTERA



Mouth parts a tube for sucking, attached to hinder part of the lower surface of the head. Wings when at rest sloping down and outward from center, thus ^ (Cicadas, Leafhoppers, Treehoppers, Aphids, etc.).

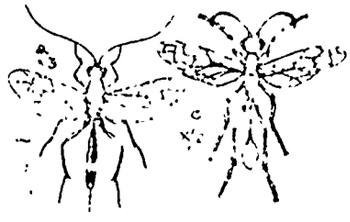
Order HOMOPTERA

Wings covered with scales (in a few species with transparent areas). Mouth parts a coiled tube for sucking (Moths and Butterflies).

Order LEPIDOPTERA

Insects with only one pair of thin, usually transparent wings; the second pair replaced with short pin-like structures (balancers). (Flies, mosquitos, etc.)

Order DIPTERA



Front wings the larger; hind wings often hooked to front wings. Mouth parts for chewing, or for chewing and sucking. (Bees, Wasps, Ants, etc.).

Order HYMENOPTERA

RELATED ACTIVITY

Step IV

Time 25 minutes

Related area Art

Conservation area Living Things

Project: Mounting specimens - insects and plants

Materials: Pins, specimens, pen - identification tags cardboard - model - killing jars - Herbarium sheets - spreading bound

Objectives: To practice mounting

Procedure: Insects:

Place specimen in killing jar - 5 minutes

Clean specimen

Place pin in specimen as shown on model

Fill out identification tag

Mount specimen on cardboard

Plants

Use Herbarium sheets

RELATED ACTIVITY

Step V

Time 20 minutes

Related area Language Arts

Conservation area Living Things

Project: Writing a story

Materials: Paper - pencils

Objectives: To practice imagination

Procedure: Explain to students that this is a chance for expression and imagination

Stick to a story about living things - animals, plants, insects

Finish for homework

End of period

UNIT IV. FORESTRY

Presentation by Specialist to large group	30 minutes
Questions and answers of large group	15 minutes
Related activities presented and supervised by classroom teacher - assisted by junior counselors and resource people	120 minutes

UNIT I FORESTRY

Presentation by specialist - Time 30 minutes
Questions and answers - Time 15 minutes

I. What Is A Forest?

A. A forest is outdoors. Located both on and in the soil. A community of living organisms, both plant and animal, and is, itself, sometimes thought of as a great single organism. Its largest and most complex individuals are trees. It is renewable.

B. Plant cover is usually composed of trees, shrubs, vines and herbaceous plants.

C. Definition of a forest is: "A community of trees and associated organisms covering a considerable area; utilizing air, water, and earthy materials to attain maturity and to reproduce itself; and capable of furnishing mankind with indispensable products and services."

II. What is Forestry?

A. Forestry is a science, an art, a business, and a public policy capable of, and concerned with, effecting continuous production and management of forests on suitable lands and promotion of their beneficial use by mankind.

B. Foresters work with trees.

III. What is a Tree?

A. Tree is defined as a woody plant which reaches a height of at least 20 feet at maturity; with a single trunk, unbranched for at least several feet above the ground, and a more or less definite crown.

B. Shrubs are smaller than 20 feet at maturity with several erect, spreading or prostrate stems, and a general bushy appearance.

C. Let's take a look at an individual tree!

1. Hardwoods (deciduous, broadleaved)
   Conifers (softwoods, evergreens, needle leaved)
2. Forest grown vs. open grown
3. Root system
   a. Anchor tree to soil.
   b. Means of entrance of soil moisture and mineral elements in solution for part of tree's food supply.

c. Tap root (oaks, hickory and walnut)
d. Primary, secondary roots; root hairs

4. Crown (limbs, branches, twigs, leaves, buds, flower, fruit)
   a. Leaves (photosyntheses - green plants with aid of light manufacture carbohydrates from CO_2 and H_2O)
      1. Vary in shape, shedding, evergreens retain leaves from 2 - 5 years.
   b. Buds
      1. Protected growing tips that will develop during next growing season into twigs, leaves, flowers.
      2. Terminals, laterals
   c. Flowers
      1. Trees bear flowers as do other seed plants.

5. Stem (trunk or pole)
   a. Bark (outer,inner)(phloem)
   b. Cambium
   c. Xylem (Sapwood- Heartwood)
   d. Annual rings
   e. Summerwood - springwood
   f. Use increment borer

6. How a tree grows (diameter, height, volume)
   a. Diameter - cell division in cambium,new phloem and bark cells on outside, new wood cells on inside. Does the cambium produce as many bark cells as wood cells?
   b. Height
      1. Develop of terminal bud and extension of individual shoot
   c. Roots - cell division; primary, secondary roots and root hairs.
7. What does a tree need to grow?
   a. Air, light, moisture, heat, food

IV. Tree Reproduction

A. Trees reproduce themselves by seeds and sprouts. All hardwoods and conifers produce seeds. Most of the hardwoods will also produce sprouts from freshly cut stumps.

1. Tree fruits
   a. With wings, plums.
   b. pulpy fruits with hard seeds sought by birds.
   c. Rich nut kernels liked by rodents and birds often bury or store them.
   d. Light seeds which float on water.

2. Dispersal of seeds

a. Wind (Ash, maple, cottonwood, willow, elm, spruce, pine, fir, sycamore, and basswood)
b. Animals (Hickory, walnut, butternut, oakes, honey locust, persimmon, beech)
c. Birds (Red cedar, yew, black cherry, hackberry)
d. Water (cypress, cottonwood, willows, sycamore)
e. Gravity (heavy seeds)

V. Forests

A. Forest Layering

1. Overstory, understory, light relationships.
2. Age groups
   a. seedling - under 3'
   b. sapling - 3' to 10' high, under 4" diameter breast high (define DBH)
   c. pole 4" to 12" DBH
   d. sawtimber over 12" DBH

B. Forest as a producer of

1. Wood
2. Water
3. Wildlife
4. Recreation

MULTIPLE USE FORESTRY

C. Forest Management for above

1. Weed, Wolf, Cull, Grapevile

D. Forest Protection

1. Insects
2. Disease
3. Fire

FORESTRY ACTIVITY PERIOD

Step I

Time 5 minutes

I. Organize Group

A. Designate meeting place.

B. Check to see if everyone is present.

C. Tell location of work area.

D. Total time 120 minutes.

RELATED ACTIVITY

Step II

Time 40 minutes

Related area Science

Conservation area Forestry

Project: Preserving by observing and collecting with the senses - sight, touch, taste, and smell.

Materials: Pencil, tree observation chart, collecting container, tree borer.

Objectives: To apply some of the concepts presented in the large group discussion.
To have meaningful experiences with these concepts - apply the concepts.
To compare the differences in trees.
To practice using the senses.
To start a collection.

Procedure: Tell the students that the object of the hike is to become more familiar with trees - to learn some characteristics of various trees - to identify some trees.

Check to see that everyone has their equipment.

Conduct the group to the field area. (each class will be assigned an area)

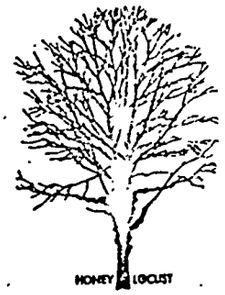
Refer to the Tree Observation Chart - complete it as much as possible in the allowed time.

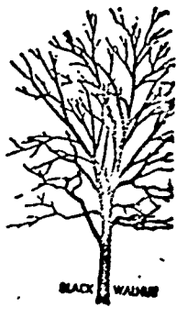
Collect as many different leaves, twigs, seeds, buds, bark and wood samples. (only those related to trees and do it while studying the trees)

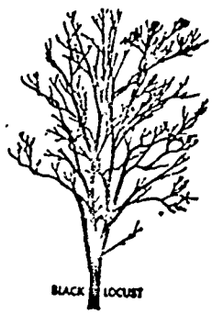
(Work quickly but thoroughly)

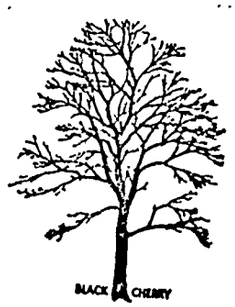
Tree Observation Chart

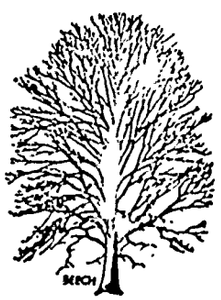
"Learn to know trees by their shape"









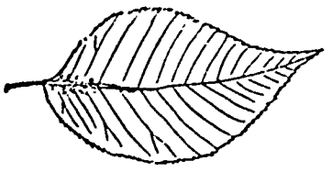


Leaf Observation Chart

"Learn to know trees by their leaves"

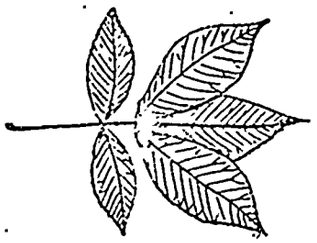
Red Cedar

Black Walnut

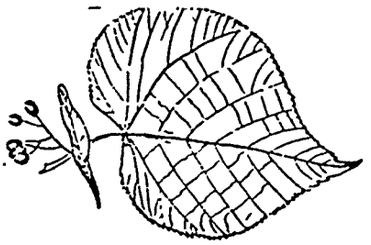


Elm

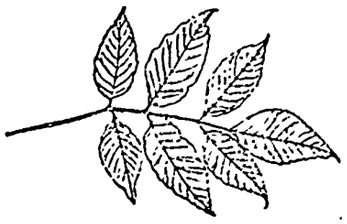
Black Locust



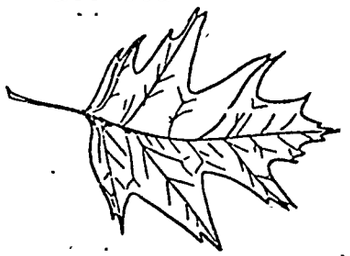
Hickory



Basswood

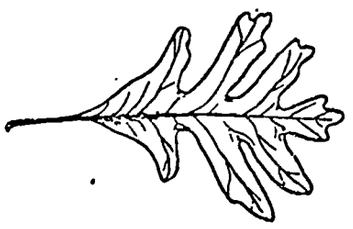


Ash

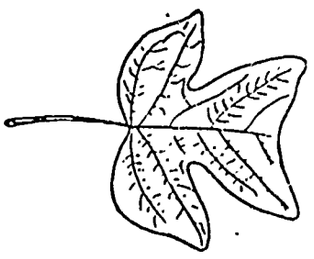


Red Oak

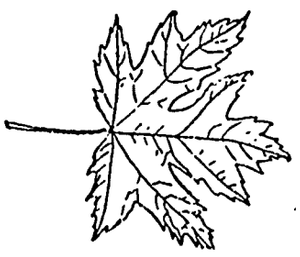
Hard Maple



White Oak



Tulip tree



Soft Maple

RELATED ACTIVITY

Step III

Time 15 minutes

Related area Language Arts

Conservation area Forestry

Project: Writing a poem related to the forest - in the forest.

Materials: Pencil, paper, quiet spot in the woods - alone.

Objectives: To practice creativity related to forestry.

Procedure: Place each child far enough away from another child so as not to be distracted.

Stress the use of fooling, creativity, awareness of surroundings.

Finish poem for homework if not completed - save for return to school as a follow-up activity.

Return to the work area with collected materials.

RELATED ACTIVITY

Step IV

Time 30 minutes

Related area Language Arts

Conservation area Forestry

Project: Identification of collected materials back at work area.

Materials: Pencil, paper, tree identification keys, reference books, charts, collected materials, samples, magnifying glasses.

Objectives: To identify as many objects collected as possible.
To relate objects collected to knowledge of trees.
To practice using reference materials.

Procedure: Have children pick a work area and remove collected objects from containers - work in pairs.

Explain that as many objects as possible should be identified.

Use all the reference materials.

Explain use of the tree identification keys and reference materials.

Move about helping when needed.

RELATED ACTIVITY

Step V

Time 20 minutes

Related area Art

Conservation area Forestry

Project: Mount and label collected materials - make a Herbarium.

Materials: Herbarium sheets, tape, ball point pen, notebook, tissues.

Objectives: To construct a lasting collection of materials related to forestry.

To reinforce knowledge of materials.

Procedure: Remove excess dirt and foreign matter from specimens with tissue.

Attach specimen to center of sheet with tape - be sure to place specimen in the center of the sheet.

Fill in identification material on sheet.

File sheets in notebook by types -

ex. maple leaf, twin, bud, bark, etc.

A good collection can be laminated later.

Specimen number_____

Genus_____

Species_____

Common Name_____

Locality_____

Habitat_____

Remarks_____

Date_____

Collector_____

RELATED ACTIVITY

Step VI

Time 15 minutes

Related area Conservation

Conservation area Forestry

Project: Planting a tree.

Materials: 1 pine seedling, shovel, bucket, water.

Objectives: To demonstrate how to plant a tree.
To relate the planting of trees to the conservation of soil and to the replacement of cut down trees.

Procedure: Pick three children who indicate the greatest need for experiencing such an activity.

Explain the procedure while the three children perform the activity for the group.

1) pick a suitable spot for the tree.
2) strip the sod away from the spot 12 to 18" square.
3) dig a hole about 6" deep.
4) crumble some of the dirt and place it in the hole - pour some water into the hole.
5) place the tree in the hole.
6) spread the remaining dirt around the tree with the hands and press down so the tree stands straight - tamp the soil thoroughly so as not to leave any air pockets.
7) add remaining water around the tree.
8) tag the tree with a tag containing the following information: date of planting, planted by, type of tree.
9) repeat watering the following day.

End of period