

West Eugene Wetlands

**A Volunteer's Guide
for the West Eugene Wetlands
Environmental Education Program**



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WEST EUGENE WETLANDS RESOURCES SHEET

What are the natural resources?

- Significant Wildlife Habitat
- Endangered and Threatened Species
- Permanent and Migratory Birds
- Rare Native Plants

What makes it necessary to manage the resources?

- Water pollution caused by runoff
- Trash / Garbage
- Habitat loss from human development
- Introduction of nonnative plants and animals

How does our community manage these resources?

- Educate community about importance of wetland resources.
- Conduct research to further explore wetland functions.
- Monitors the populations of endangered species.
- Control nonnative plants and animals.
- Continue restoration and preservation efforts.

What can STUDENTS do to help Wetlands?

- Learn about habitats, endangered species, and migratory birds.
- Share what you have learned with others.
- Learn about proper disposal of waste.
- Participate in Wetlands cleanup and restoration.
- Reduce, Reuse, and Recycle.
- Conserve water.

Goals of Environmental Education

Reasons for Coming on a Field Trip

- To learn about the wildlife habitats, plants, and animals of the West Eugene Wetlands.
- To understand the West Eugene Wetlands partners' resource management objectives, how these objectives are being accomplished and how others can help the West Eugene Wetlands.
- To develop an appreciation for the natural environment and become aware of actions that can be taken to protect that environment.

ENVIRONMENTAL EDUCATION: is a process aimed at developing individuals who are aware of and concerned about the total environment and its associated challenges; fosters individuals to have the knowledge, attitudes, motivation, commitments, and skills to work individually and collectively toward solutions of current issues and to create harmonious patterns of behavior.

The Goals of Environmental Education

Awareness: To help individuals and groups experience the total environment and acquire an awareness, sensitivity, and connection to each other and the natural world.

Knowledge: To help individuals and groups gain a variety of experiences in and acquire an understanding of basic ecological concepts of the environment and their relationship to them.

Attitudes: To help individuals enjoy the natural world and acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental enhancement, conservation, and protection.

Skills: To help individuals acquire the critical-thinking and decision-making skills needed for identifying, analyzing, and solving environmental challenges.

Action: To help individuals develop a sense of responsibility and to be actively involved, working toward prevention and resolution of environmental issues and challenges.

Basic Ecological Concepts

Discuss the ecological concepts with youth before your visit to the wetland. A basic understanding of these concepts will enhance the group's understanding of what they see and do on the field trip.

Everything has a home

During your field trip, you will be walking in, around and through several animals' living rooms, dining rooms, kitchens, bedrooms and bathrooms. We call these homes habitats. Ecology (from the Greek "oikos" which means house) is the study of the common home of all life—the earth.

Everything is becoming something else

All plants and animals undergo evolutionary changes and adaptations. When things die, they are broken down, decomposed, recycled, and used by other living things.

Every living thing eats and is eaten by something else

Three categories of life forms are in the basic food cycle: producers, consumers, and decomposers.

Everything depends on something else

Interaction and interdependence occur among living and non-living things and their environment. A change in any strand of the food cycle of life affects the entire web. Nothing exists in isolation.

There are basic necessities for life: food, water, shelter, and space

These necessities are found in the sun (Light), the atmosphere (Air), the hydrosphere (Water) and the earth's crust (Soil). These are the LAWS of the ecosystem.

Diversity is essential for life

Many similarities and differences occur among living and non-living things. This variation is essential for maintaining a healthy community and ensuring that plants and animals survive and reproduce in spite of changing situations.

Humans are capable of changing the balance of nature

We are rational, thinking beings who have changed and continue to alter the environment of the earth in many profound ways. As such, we have a responsibility to all living things and to respect their needs.

FIELD TRIP SCHEDULING PROCESS

Educator calls WEW office or hotline or emails about interest

WEW Contact takes call or email.
Fills out Field Trip Interest form.
Helps clarify educator's needs.

West Eugene Wetland topic:
Refer to Education Coordinator

Other topic:
refer to other
organization.

If educators know exactly what they want and / or have had a West Eugene Wetlands field trip orientation, schedule field trips. Complete Field Trip Planning Sheet.

If teachers don't know exactly what they want:

- * Help them decide.
- * Explain concepts / activities we have to offer.
- * Educator attends orientation.
- * Schedule field trip.
- * Complete Trip Planning Sheet.

**Educators are encouraged to use the guide and kits .
Volunteers may be available to assist or lead activities.**

Education Coordinator contacts available volunteers, shares educators' field trip information, and gives a list of activities and materials which may match the needs of the educators.

Field Trip Policies

Field Trip Orientation

Educators who desire the use of staff assistance, equipment, and facilities may bring a group to the WEW after completing a Field Trip Orientation. Field trip orientations are free.

Reservation

To use the facilities and equipment, educators must make a reservation for a field trip.

Paperwork Required

The West Eugene Wetlands Field Trip form must be completed and received by the Education Staff at least two weeks before the field trip. (Sooner is better if volunteers are needed.)

Field Trip Schedule

Visits usually range from a few hours to the entire school day. Staff assistance is available to help with planning. Visiting groups are expected to abide by the West Eugene Wetlands' rules and regulations. All ages are welcome!

Field Trip Permission and Medical Information

Educators are required to bring medical information on each student. Bring medical forms from school or use the field trip permission slip and medical information form found in this guide.

Floater Responsibility

The field trip coordinator (usually the lead educator) acts as a "floater" during the field trip. This person must attend the field trip orientation workshop. The "floater" supervises all aspects of the field trip.

Group Size

Large groups must be divided into small groups of eight to 12 for activities. Determine small group before arriving. Name tags can be used for grouping.

Adult Leaders

A ratio of two adults to eight or 12 youth is required for a field trip. One adult chaperone stays with the same group of youth and travels from station to station with them. The chaperones' name tags will correspond with the group they are leading. The other adult, an activity leader, stays at a specific station and instructs each of the rotating groups. An adult must always accompany youth.

Equipment

Groups are responsible for replacing broken, damaged, or lost equipment.

Accessibility

It is the policy of the wetlands to accommodate individuals with disabilities. If an accommodation is needed in order for a field trip group to participate in the West Eugene Wetlands program, the lead educator may contact the Environmental Educator Coordinator.

(The West Eugene Wetlands are open to the public, including organized groups not desiring the use of staff assistance, equipment, and facilities. To ensure all have a rewarding time, it is encouraged that these groups check with the West Eugene Wetlands Education Center staff when scheduling their use. Space is limited on the boardwalks and trails.)

Field Trip Planning Sheet

West Eugene Wetlands Education Office

Location: 751 South Danebo
Eugene, Oregon 97402

Phone: 683-6494
Email: west_eugene_wetlands@hotmail.com

This sheet must be received at least two weeks prior to your visit.

Your Name(s): _____	Date of Visit: _____
_____	Time Arriving: _____
Phone Number: _____	Time Leaving: _____
School/Organization: _____	No. of Youth: _____
Address: _____	No. of Adults: _____
_____ Zip: _____	Grade Level/Age: _____
Email: _____	
Means of Transportation: _____	
Any Special Needs: _____	
Have any teachers, group leaders, parents, etc. attended an orientation?	

THEME: State the focus of your field trip.
(If you do not know, you may get help during an orientation or planning session.)

OBJECTIVES:

PRE/POST VISIT ACTIVITIES: List any activities you have done or will be doing with your youth before or after your visit.

STAFF ASSISTANCE: A staff member will be available to lead the opening and closing activities. If available, would you like a volunteer to assist or lead one of the learning stations? If you would like help, please indicate the learning station and activity here:

LUNCH: Will you be having: lunch on site ____, snack on site ____, lunch at school ____, other ____. Glass, aluminum, and some plastic recycling are required. We will provide buckets for recycling. Please bring a trash bag for non-recyclable lunch trash.

(Activities we offer will be listed here)

LEARNING STATION ACTIVITIES AND EQUIPMENT:

- Choose learning station activities for your group.
- The equipment listed for each activity will be counted and ready when you arrive.
- Clipboards, hand lenses, and binoculars are available upon request.
- **BEFORE LEAVING, CLEAN AND COUNT ALL EQUIPMENT.**
- The replacement of lost or broken items is the group's responsibility.

CLEAN UP PROCEDURES:

(Clean up occurs after the last rotation, during the closing activity.)

1. Wash indoor lab equipment and leave to dry on the tables.
2. Sponge off tables and chairs.
3. Sweep floors.
4. Wipe off binoculars and microscopes.
5. Rinse outdoor equipment, including muddy nets and buckets with the hose at the Red House.
6. Count all equipment, referring to the equipment checkout list.

West Eugene Wetlands Staff Responsibilities for the Field Trip

- ___ Take field trip reservations.
- ___ Conduct field trip orientation workshops.
- ___ Assist with field trip planning upon request.
- ___ Mail out field trip confirmation letters.
- ___ Receive planning sheets and set out requested equipment prior to the field trip.
- ___ Contact volunteers.
- ___ Lead an opening activity for the students and discuss behavior guidelines.
- ___ Lead an adult orientation during the opening activity (subject to staff availability).
- ___ Lead one activity for the first rotation, if requested.
- ___ Lead a closing activity for the students; conduct volunteer “thank-yous”.
- ___ Check equipment at the end of the field trip, verifying numbers and conditions.
- ___ Check in borrowed classroom materials.
- ___ Receive and review returned completed Field Trip Evaluation form.

Field Trip Behavior Guidelines

Please go over the rules with your group before the field trip. Have the students describe the behavior they think will be appropriate. Help them fill in the points they miss. In this way, students will “come up with” their own rules and will be more likely to follow them. Please remind students that the West Eugene Wetlands are a special place for plants and animals, and a place for people to learn.

Only Take Away Memories

All plants and animals are special and some are protected. Students may only take drawings, pictures, rubbings, and memories.

Show Respect For Wildlife

Do not disturb animals in their habitats.

Replace What You Pick Up

If you investigate rocks, sticks or logs, please put them back as you found them. Otherwise, you would be re-arranging the “furniture” of many animals’ and plants’ homes.

Stay On Trails

Please stay on designated trails. Avoid stepping on or disturbing plants and animals.

Do not Pick Plants

Identify plants on the spot; do not pick them. Taste only those plants you are instructed to sample. *Caution!* Some plants are poisonous.

Listen

Pay attention to the activity leaders, other students, and the natural sounds around you.

Walk and Talk Quietly

Walk and talk quietly. This increases your chances to observe the wildlife.

Stick Together

Stay with your group! An adult must accompany each group at all times.

Be Aware of Your Trash

Litter does not belong on the West Eugene Wetlands. Put trash and recyclables in designated containers.

Respect the Equipment

Be careful with all the equipment. It must be returned in good condition at the end of the day.

Enjoy Yourselves!

Go exploring and use all of your senses!!

Emergency Procedures

Serious Injuries

If the emergency seems to be life threatening, CALL 911 from any telephone, and be prepared to give the dispatcher the following information:

- Indicate that the emergency is at the West Eugene Wetlands Environmental Education Center, 751 South Danebo. The office is in the red house, just north of West 11th Avenue. Describe where the person is located.
- Explain the nature of the injury and what, if anything, has been done to stabilize the victim.
- Stay on the phone until the dispatcher tells you to hang up.
- Notify the teacher/group leader who can use another phone at the center to notify the parents/guardians or school personnel.
- Remain in or near the building until emergency personnel arrive so you can lead them to the location of the victim.

If a person's injury appears not to be life threatening, however it appears to be serious, such as an injury involving the head, neck or back or an insect sting that results in severe swelling, then you must do one or more of the following steps:

1. Leave the person in the care of an adult and instruct them to use available clothing or rain gear to protect the victim from cold or dampness.
2. Go immediately to the Education Center. Report the injury to the education coordinator, Holly McRae, and let her take charge.
3. If Holly is not in the vicinity, CALL 911.

Minor Injuries

If a person in your group has a very minor injury (i.e. minor cut or abrasion, sore ankle, contact with poison oak), try to assess the degree of the trauma involved and if it appears minimal, continue the activity.

If a person in your group has a more debilitating injury (i.e. twisted ankle, deep cut or abrasion, or extensive contact with poison oak), use your judgment as to whether or not to return to the Center or continue the activity. If one person can handle the activity and group, then have the other adult escort the victim back to the Center. First Aid supplies are located in the yurt and in the red house.

Before any kind of first aid is administered, you should ask the supervising adult for permission to give care. It is advised not to administer any form of oral medication.

Fire Emergencies

Report all fires immediately to the West Eugene Wetlands staff.

If you are in the Red House or Yurt: Quickly leave the building. In the event of heavy smoke, stay low to the ground while you leave the building.

If you are outside the Red House or Yurt: Walk toward the parking lot.

Everyone must report to the center of the parking lot. Stand in an open area.

Take a head count to make sure everyone is accounted for.

West Eugene Wetlands staff will check on you and inform you when it is safe to leave the parking lot.

You as an Environmental Educator

Be a Role Model

“Do as I say, not as I do.” This exhortation rarely works. You are the leader and the children will follow your example. Your attitude toward the environment will register clearly with them as you carefully replace a rock rolled over for investigation, or when you pick up trash left by people exploring the area before you.

How you feel about nature will come through to the children when you stop suddenly to listen to a favorite bird song or pause to watch an ant laboring under a heavy load. Curiosity and caring are contagious.

Everyone is Afraid of Something

Most people fear, or “hate,” some things in nature. To lessen those fears by learning more about the object is a worthwhile goal, for our own sakes and for the sakes of the children we influence.

Should a person express fear or conceal it from the children? You will have to be a very good actor to hide your fear of snakes when you’re startled by one during a field trip. So you might as well be honest. When the situation arises, explain that you are afraid of snakes, or spiders, or mice, and that you are trying to increase your knowledge about them so you will become less fearful. This admission may lead to a good discussion in which children can admit their fears and be encouraged to realize they need not be trapped forever by them. Many leaders who hated bats have come away from the “Bats Workshop” still wary, but with admiration and curiosity to know more.

Some fears are too deep-seated to deal with immediately. Some are valid for safety reasons, but many can be dispelled by accurate information, simply explained. What a favor you will have done for a child if you can dispel a fear.

Sense of Humor

Children learn best when they are having a good time; your playfulness and sense of humor will keep them on their toes. Children seem to relish corny jokes and ridiculous riddles. Most often, they will laugh at yours and feel great when you laugh at theirs. Keep some jokes up your sleeve for times when things drag a bit or children are tired.

A witty remark can turn a mistake or a minor accident (like losing a shoe in the mud) into a comical situation. Make sure the comment does not make the student feel bad. Laughter is good for the soul as well as for the brain.

Expected Behavior

Whether indoors or out, respect for each other helps create respect for nature.

We all have different tolerances for commotion, but none of us need tolerate meanness or thoughtless infringement on the rights of others. It is most important for you to be clear in your own mind about which behaviors are acceptable and which are not and to explain your

expectations to the children. Review the *Behavior Guidelines*. Encourage them to discuss their expectations of each other. Then when you have to discipline a child, you are reviewing behavior codes, not initiating them. Reasonable behavior translates into a lot more fun for everyone.

Boundaries

Outdoor activities often erupt into a joyous explosion of energy and dispersal into the far reaches of an outdoor area. *Before* you give the children their final activity instructions or equipment and send them off to explore, be sure to clearly define the boundaries beyond which they may not explore. It may be specific limits like a trail or it may be more general like within sight of your red kerchief.

When children know their boundaries, they are usually more secure. Thus, freer to concentrate on finding, looking, investigating, when they know their boundaries.

Running Wild

Exuberance and pent-up energy, especially for children who have just emerged from a school bus or a classroom, can be channeled. Your plans may call for a sit down discussion or a controlled scavenger hunt, but if you feel the lid about to pop, it is a good idea to first stop and organize a relay race or a red light game or a “hop like a grasshopper” tour. Then when the kinks are out, you can go over your behavior expectations. Sometimes children need to be separated. Children have the right not to be distracted.

Sometimes children, too, have the need to stretch out, try their speed, express their joy at being let loose. The trick is knowing when to let it happen.

Do not Pick

Collecting is one of the hardest natural inclinations to regulate. Children love to pick, catch, and keep what they find. Most of the scavenger hunts in this program say “find” rather than “collect,” hoping to encourage children to leave their discoveries where they found them.

When living creatures are collected a release ceremony at the end of the session is very helpful. Our feeling is that no child should be allowed to keep a creature found during a group expedition. Possibly the activity leader may decide to keep one temporarily for the group to study and observe.

Limiting Stories

Sometimes a question is asked because the child is curious to know the answer, but some of the questions are actually lengthy stories and anecdotes. Even carefully planned discussions with the children may open a Pandora’s box of tales from their own or their family’s experiences.

It feels mean to cut short a child’s story, but children understand time limitations. If you explain there will not be enough time to go do the other activities, they will be willing to move on. Tell the children they will have a chance to tell you after the activity. Only say this if it is true.

Add a Slice of Silence

Children's lives frequently feel as hectic as our own. If you can inject a little serenity into their time with you, you will help them enjoy and understand both the natural world and themselves a little better. Occasionally encourage the children to be silent and still and let the natural flow of life in the wetland resume around them.

Field Trip Teaching Hints

If you have any apprehensions about leading a group of children, relax! The following are several techniques you can use to help keep the group's attention and maintain the feeling of freedom and open exploration.

Be Prepared

For a more fulfilling experience come prepared by becoming familiar with the activity you will teach. The more comfortable you are, the more you and your students will be able to enjoy the activity. You may learn along with them. Before the field trip, practice presenting the activity to friends and family. If possible, visit the field trip site where you will be doing the activity.

Be Enthusiastic

Be energetic and interested in what you are teaching and the students will be engaged and interested. Your own enthusiasm is contagious. Whatever you are doing, do it with gusto!! Get down on your hands and knees to look at the low-growing plants. As the leader you set the tone for the experience.

Focus Attention

Students tend to exhibit more energy when outside. Make eye contact with individual students when conducting the activity. Call students by name and get up close to them to get their attention. Get students involved in activity. Use silence as a way of getting everyone quieted down. Be sure to find out the special signal used by the teacher to indicate silence. If disruptions arise get the teacher's help.

Keep Groups Small

With all of the exciting discoveries that crop up everywhere in the field, it is hard to get everybody involved in groups of more than 10. Larger groups also have a negative impact on local flora and fauna.

Speak With the Group

Talk with the group. Speak loudly and clearly, facing the group. You should be the one facing the sun and the wind, not the students. Allow the students' backs to be towards these elements. When you stop to look at something, before talking, gather the group around you with everyone facing toward the object of attention.

Manage the Noise Level

The outdoors is a very exciting place. It is also one of the few places where people can shout. Sometimes you will want to insist on absolute quiet and listening, but understand that this can be overdone. The outdoors is one cathedral that can tolerate the buzz of excited voices.

Lead the Group on Trails

When you are at the front of the line, you can set the group's pace as well as focus the group's attention. Have one of the adult helpers or responsible students stay with the slowest members of the group. This way you will know that everyone is somewhere between two places.

Ouch! Ouch! Ouch!

Be the voice of the plants when students in their eagerness to get into the woods walk off the trails. Try and impart an ethic without negative words.

Acknowledge Respectful Behavior

Encourage students to engage in cooperation by working together in caring and respect, by showing concern for others and the environment. Also by being accountable for their individual actions. Be sure to thank students whom you observe being respectful of nature and others.

Arouse Curiosity

While they look, listen and discover what nature is doing around them listen to the students' questions and comments. Allow students to tell you what they see; every observation is valuable. If they come up with questions that you cannot answer have the students write them down. They may ask the question at the closing activity, ask the teacher, or look up the answer back at school or at home.

Reinforce Discovery

When a child points out a spider, snake, caterpillar, or snail, this is the most important thing in the world to him or her. Respond with enthusiasm to this discovery and call the group together if possible to share what has been found. Hopefully your own discoveries will excite you; share it! *Enthusiasm is a bigger catalyst than knowing a bunch of names.*

Use the Teachable Moment

As you walk down any trail in the outdoors, things are happening. A spider is eating a grasshopper or a hawk is hovering above the wet prairie. Sometimes these discoveries are made at "awkward" times in an activity. Try and adjust your teaching so that you capitalize on these special times. *BE SPONTANEOUS!*

Plan a Variety of Hands-on Activities

A picture is worth a thousand words and an experience is worth a thousand pictures. The outdoors is a very "hands-on" medium. The opportunities for involving students in action activities are endless. As you plan your day, try and have an itinerary that includes sensory, scientific, artistic, dramatic, explorative, and just plain fun activities.

Use all Your Senses

There is much more to the outdoors than meets the eye. Smell the duff of the forest floor, feel the wet, slimy skin of a slug, listen quietly to the sounds of a wet prairie at sunset, taste the tartness of a wild blackberry. We long remember things that our senses teach us. Open yourself up to all the sights, sounds, smells, tastes, and textures of our planet.

Use Tools to Aid in Discovery

Magnifying lenses, binoculars, thermometers and other tools are very valuable things to have along in the field. They are hands-on things that can be used to focus attention on special discoveries. They are, however, not essential. The American Indian is an example of a top

notch nature observer who had the best tools that anyone can have, namely one's eyes, ears, nose, mouth, and physical body.

Demonstrate

Demonstrate an activity as you explain it. Follow the teaching format. Keep your explanations and vocabulary simple.

Encourage Participation by Asking Questions

Whenever possible, ask questions instead of giving information; this encourages thinking and group interaction. For example, "Why is there a hole in the ground here?" "How did it get here?" "What would you need to live here if you were a _____?" Praise students for contributing to the discussion whether or not their comments or answers were correct.

Use Patience

Students will appreciate and remember an answer better if they come up with the answer on their own. Make sure to allow time (at least 10 second count) for students to think about an answer to your question before giving the answer.

Keep Writing to a Minimum

Writing and other activities that can just as easily take place in the classroom should be kept to a minimum. Scientists' notes, yes; reams of data sheets, no!

Label Last

Often, once we know the name of something we turn off our attention, put it into its neat little box and search for something else to label. Names are good to know, but so is information on why something is what it is, why it does certain things and lives where it does.

Learn With Students

Do not feel like you need to be a "walking encyclopedia" of facts to lead a good field trip. How you react to something speaks so loudly that often people cannot hear what you are saying. Be an enthusiastic facilitator rather than a boring lecturer. Do not be afraid to say, "I don't know, but let's find out."

Learn From Your Mistakes

Be prepared to make mistakes. Learn from the things that did not work well and those that did and change your plan accordingly. After each rotation assess what happened with the group. Be open to what students can teach you.

Wrap-up the Activity With a Discussion

At the end of an activity be sure to pull it all together with a summary question.

Dress Properly

Teaching in the outdoors requires a great sensitivity to the effects of weather. Nothing can ruin a field trip faster than a group of cold, wet students. Raingear, hats, and gloves are essentials along with adequate footwear in rainy western Oregon. Wind, too, can be a problem. When talking to a group, talk downwind. Your body will act as a wind break and it will be easier for

them to hear you. Keep your students interested and active and you will have fewer complaints about the weather. Instead of a list of clothing requirements make a study of exposure and hypothermia part of your preparation. Help your students learn how to take responsibility for their physical well-being by teaching them what their bodies require.

A Note About Hypothermia

HYPOTHERMIA: means chilling of body resulting in a rapid and progressive mental and physical collapse. It is caused by exposure to cold. It is aggravated by wetness, wind, and exhaustion.

When planning short hikes and field trips, the following precautions should be taken.

STAY DRY: although wool is the best insulator when wet, all fabrics lose most of their insulating value when they get wet.

AVOID WIND: wind acts as a refrigerant on the skin and on wet clothing.

WATCH your students for shivering and evidences of physical and/or mental exhaustion.

If you cannot keep your students warm and dry, return to a shelter (the bus, a car, a restroom, etc.). Do not risk continued exposure. The more students you have under your supervision, the more cautious you need to be. When everyone in a large group gets cold and wet, it becomes difficult to watch each person carefully.

For outdoor activities where you are more than an hour or two from shelter, prepare yourself more carefully by consulting *Four Lines of Defense Against Hypothermia*, available from Motion Picture Consultants, Inc., N.E. 130th Ave., Seattle, Washington 98125, from which this information has been taken.

Refuel the Bodies

Protein snacks such as nuts, sunflower seeds, or gorp go a long way towards sparking a group's energy level (especially when it is a surprise). Remember that before humans can contemplate ecological concepts, their primary needs must be met. Water also is invaluable on a field trip.

Have Fun!

Relax and enjoy the students! Have a sense of humor about yourself. Spark their imaginations.

Guide to Making Classroom Visits

Thinking about making an environmental education presentation to a classroom full of “wiggly” students can be a frightening vision in the minds of those not familiar with teaching strategies and techniques. Often, it is a frightening vision even to those familiar with the teaching profession. Fortunately, there are ways to make classroom visits rewarding experiences for students and visitors.

The “*Guide to Making Classroom Visits*” provides an overview of goals, pointers, and elements of effective presentations, questioning strategies, and a list of “Do... Because...” teaching tips.

Goals

Why should teachers request environmental educators and scientists to visit their class and work with their students? Is it just for a pleasant break from normal routine?

Why should an environmental educator or scientist volunteer to visit?

There are four very important, basic goals for having environmental educators and scientists make presentations in the classroom. These goals are to help:

1. Students understand science and the environment;
2. Students understand the work scientists and environmental educators do;
3. Students see scientists and environmental educators as real people; and
4. Scientists and environmental educators develop insight into today’s students and schools.

While visiting a sixth-grade classroom, a geologist showed students a small bottle of HCl acid she had brought. The class recognized it as being similar to acid they had used in tests to determine properties of unidentified rocks. They realized their classroom activities were similar to what a real scientist does. Because of this shared experience, the students could relate to the scientist and her work. The geologist was surprised and pleased that students had been introduced to science while in elementary school.

What Teachers Should Do

1. Select a topic and contact a scientist or environmental educator.
2. Let the visitor know what your class has been studying. Have textbooks/unit guides available for the scientist to scan.
3. Get the necessary audio-visual equipment ready. Make sure everything works properly before the visitor arrives.
4. Prepare students for the visit.
 - a. Discuss and practice appropriate behavior.
 - b. Prepare students with content background, if needed.
 - c. Brainstorm appropriate questions to ask the visitor.
 - d. Organize students into cooperative learning groups.

5. Let the visitor know about established classroom rules.
6. Take responsibility for discipline problems during the visit.
7. Assist the visitor by writing key words or directions on the board.
8. After the visit, mail selected thank you notes from students telling what was learned during the scientist's presentation.

What Scientists Should Do

1. Prepare a list of topics you feel comfortable presenting.
2. Check the list of topics covered in the school district's curriculum to get an overview of science topics presented at each grade level to see where your presentation fits best. These guides can usually be obtained from the school district's main office. Call in advance.
3. Discuss with the teacher exactly what you will present to the class. Ask about background information already covered by the class. If appropriate, you may suggest that specific content be introduced to the students so that they can understand your activities more clearly.
4. You may want to look at a copy of the science textbook and teacher's guide used in the classroom.
5. Let the teacher know ahead of time what audio-visual equipment you will need so that it will be ready when you arrive.
6. Tailor your presentation to the age group of the class.
 - a. Kindergarten students can listen attentively for up to 20 minutes and are usually active with "wiggles." These groups especially need to handle or explore whatever you bring.
 - b. Students in grades one through three can sit still and listen from 20 to 30 minutes with interest.
 - c. Students in grades four through six can be interested during 45 to 60 minute sessions

"Wiggles" by any grade level indicate a need for change in pace or activity. Students listen longer and learn more if you bring visual aids, such as slides, movies, tapes, specimens, pictures, maps, booklets, or other suitable hands-on items. Visual aids and hands-on materials add focus as well as enhance interest and comprehension among students. Pictures should be large enough to be seen by all. Objects for handling by students should be safe.

In particular, students in elementary schools need hands-on experiences to help them process information. Students at all levels enjoy active involvement. Because of the variety of learning

styles in every classroom, your presentation should include a variety of experiences involving reading, listening, writing, speaking, and doing.

7. On arrival at the school, go to the office and tell them who you are, why you are there, and the name of the teacher(s) with whom you will be working. This is standard procedure in schools.
8. If something unexpected happens and you are not able to make your visit as scheduled, arrange a substitute if possible. Whether you can send a substitute or not, call and make the teacher aware of the situation. Discuss rescheduling as a possibility.
9. Try to be flexible when considering requests from teachers. One particular geologist was asked to speak on the subject of dinosaurs. Although the subject was not her area of expertise, she planned a presentation from a geological perspective using fossils. The lesson was a great success! Remember that you do not have to be an expert about everything. Just know more about the subject than the students do.
10. Enjoy your visit and look at the world from the eyes of a child!

Elements of Effective Presentations

Introduction

Introduce yourself. Tell the class why you are visiting. Ask questions to determine what they already know about your topic. Tie your topic in with what they have been studying. Tell the students what you and they will be doing.

Rules

Tell students you expect them to follow classroom rules and to raise a hand for recognition to ask or answer questions.

Content

Give students information about your topic. Use visual aids, demonstrations, and samples. Relate to the students' community and experiences as much as possible.

Check for Understanding

Review as you go. Make connections about what you said or did by asking questions. Have the students make connections.

Practice/Activity

Provide a way for students to use the information you have presented to them. Have them do an experiment, play a game, make an observation, or do a worksheet, which you and/or the teacher developed for the purpose.

Closure

At the end of your presentation, ask students three or four review questions about the information you presented.

Teaching Tips

Do...	Because...
Make eye contact with them...	students love personal contact.
Have materials organized prior to presentation...	students have a hard time waiting around sometimes.
Use boys and girls from all areas of the room to help set up and distribute materials...	they love to feel important.
Require raising of hands...	they usually want to talk at once.
Make sure the students understand each task...	you can really work with students rather than just answer questions.
Use movement to maintain or regain student's attention...	it helps them focus on you.
Be sure to face the students...	they are interested in you, and will be more apt to pay attention.
Model good safety practices...	they learn to follow role models.
Give specific directions when distributing specimens...	disagreements happen about who has been holding the objects longest.
Use a signal to get attention during activities (hand clap, duck call, etc.)...	it is hard to give directions unless students are quiet.
When students get noisy, stop and wait for them to let you continue speaking...	they have probably had the "cold silence" before and know it means to be less noisy.
If necessary, ask the teacher for help with discipline...	the teacher will know exactly what to do.
Don't prematurely distribute handouts...	students will be distracted while you speak.
Ask students to touch a sample, an item on equipment, or a word in a handout...	it helps them focus on your presentation and lets you monitor their attention level.
Encourage participation and help students rethink facts if they give incorrect answers...	they are sensitive and easily discouraged, but eager to please you with right answers.
Make questions one part, clear, and simple...	students might have trouble with two and three part questions.
Wait several seconds before picking someone to answer your question...	everyone needs time to think about the question before an individual answers it for you.
Use sincere praise for positive behavior...	this is the behavior you want to encourage.
Move toward disruptions as you are speaking...	it helps disruptive student(s) refocus on your presentation.

Matching Science Processes and Content With Children’s Cognitive Development, Grades K-9

Science is more than learning facts about the physical and natural worlds.
Scientists do things that help them discover and understand how things work.

Grade Level	Science Processes	<i>Description of Content</i>
K-3	<ol style="list-style-type: none"> 1. Observing: gathering information about the world by looking, touching, smelling, hearing, or tasting. 2. Communicating: telling others about something you know, usually through speaking, writing, drawing, or graphing. 3. Comparing: thinking about the qualities of objects by focusing on their similarities and differences. 4. Ordering: arranging things in sequence of occurrence along a continuum, such as small to large or rough to smooth. 5. Categorizing: grouping and classifying things according to common traits. 	Focuses on one-word descriptions and discrete ideas.
3-6	<p>1-5 above, plus</p> <ol style="list-style-type: none"> 6. Relating: demonstrating understanding of interactions or of cause-and-effect events. 	Focuses on principles, generalizations and/or laws.
6-9	<p>1-6 above, plus</p> <ol style="list-style-type: none"> 7. Inferring: using knowledge gained through observation to understanding things that are remote and cannot be observed. 	Focuses on ideas that are not directly observable.

Asking Better Questions

Teaching has sometimes been defined as “purposeful conversation.” A good teaching session (or discussion period) proceeds purposefully from one idea to another. To provide for this orderly movement, the educator requires certain skills. One of the **key skills** is that of asking questions. Questions must be phrased in such a way that students understand what is being asked and are free to think and respond.

In learning to ask better questions, it is helpful to be able to identify some of the poor examples. We are all prone to fall into the habit of asking questions that are not as productive as they might be. Here are some of the typical questions that should ordinarily be avoided:

- *Can you ... (remember? tell me? recall? etc.)*

When asking “Can you...?,” the educator is really asking the student to do two things: 1) to answer whether or not the student can remember, tell, etc.; and 2) to go on and state what it is that he or she can share. Such questions imply: “I’m the teacher, you are the student.”

- *Do you... (know? remember? etc.)*

To ask questions that begin “Do you...?” is to focus again on the student’s ability rather than to get directly at the ideas for discussion.

Also to be avoided are the vague questions that begin in such ways as “Well, what about...? Or “Does anyone have anything to say about...?” These questions leave the learner puzzled as to what the leader hopes will be the response.

- *Do you think that...? or Don’t you think that...?*

When questions begin this way, it usually means that the educator is expressing his or her own opinion (or the opinion of someone else) in the form of a question. For example: “Don’t you think that people should mow their lawns once a week?” Obviously, the educator thinks they should. All the students can do is answer yes—unless they defend their viewpoints. But most of the time, these questions do not get us very far. It would be better to ask, “What is your opinion regarding such and such an issue?”)

There are two principal problems with all of these questions: 1) they are simply yes or no questions, and they do not stimulate participation; 2) they do not provoke thinking. In fact, they sometimes embarrass the student or group member.

The better questions begin with these words:

Who?
What?

Why?
When?

Where?
How?

Four Types of Questions

Open Questions

Designed to provide an opportunity for all persons to answer regardless of their background. Designed to obtain a body of data upon which to later focus. They are completely free of the element of “Guess what is on my mind.”

Example:

“What are some of the things you see as you look at the hillside?”

Focus Questions

Designed to focus thought on specific observable data that will be compared and contrasted to other data later in the discussion.

Example:

“What do you notice about the vegetation on the north slope of the hillside?”

“What do you notice about the vegetation on the south slope?”

Interpretive Questions

Designed to compare, contrast, and seek logical relationships between specific points brought out in focus questions. The learner is asked to express an inferred relationship based on observation.

Example:

“How could we account for the differences in vegetation on the north and south slopes?”

Summary Questions

Designed to obtain conclusions, summary, or closure. These call for a generalization or big ideas that may be applied to a variety of situations. Usually no new data is introduced here.

Example:

“How could we state a general rule that might be true about north and south slopes elsewhere?”

A typical “chain” of questions could be: Open – Focus – Interpretive – Summary.

Questioning Strategies

Observation Questions

What do you see?

What color (size, shape, etc.) is it?

What do you hear, feel, see, or smell?

What attributes does it have?

How did it/is it changing?

What was the sequence of events?

What happened before?

What happened after?

Classification Questions

How are they alike?

How are they different?

How can we group or order these things?

(appearance, composition, uses, origin, habitat, age, physical characteristics, attributes, etc.)

Measurement Questions

How much does it weigh?

What is its mass?

What is its volume?

What is its temperature?

How many/much...?

How often...?

How fast...?

What is the increase/decrease?

What was the rate of...?

Estimate the...?

Inferring Questions

Why did this happen?

From what you know/have seen, what can you assume?

What do you suppose?

Prediction Questions

What will happen if we change/do this?

What will happen next?

If this is so, then...?

Questioning Skills

Questions may be used for a variety of reasons. They can be used to see how well students understand information, to increase retention of facts and concepts by emphasizing them, and to guide students in a particular direction or toward a certain point. However, probably the most important use for questions is to elicit high-order thinking skills by students. The visiting scientist or environmental educator should make an effort to elicit thinking at all levels, but particularly at the analysis, synthesis, and evaluation levels.

Here are descriptions of each level, and an example illustrating a question or an activity to elicit thinking at that particular level.

Knowledge

Students are asked to recall information they have been taught, or to recognize new information you have presented. Example: "What are the three basic types of soil?"

Comprehension

Students are asked to translate, interpret, or extrapolate, indicating that the information has meaning to them. Example: “In your own words, summarize the process of organic soil formation.”

Application

Ask students to use rules, principles, or generalizations in situations that are new, unfamiliar, or have a new slant for them. Example: “Using test methods we have discussed, identify the soil type of this soil sample.”

Analysis

Students are asked to break something down into parts. Example: “In this news article about an oil spill, what words or phrases did the reporter write that make the article biased?”

Synthesis

Students create something new from previously existing elements or principles. Example: “Make a picture book illustrating how water cycles through a watershed.”

Evaluation

Students are asked to form a value judgment and explain justification for the judgment.

Example: “Write a letter to the editor of a newspaper supporting or opposing the development of a road through a wetland in your area.”

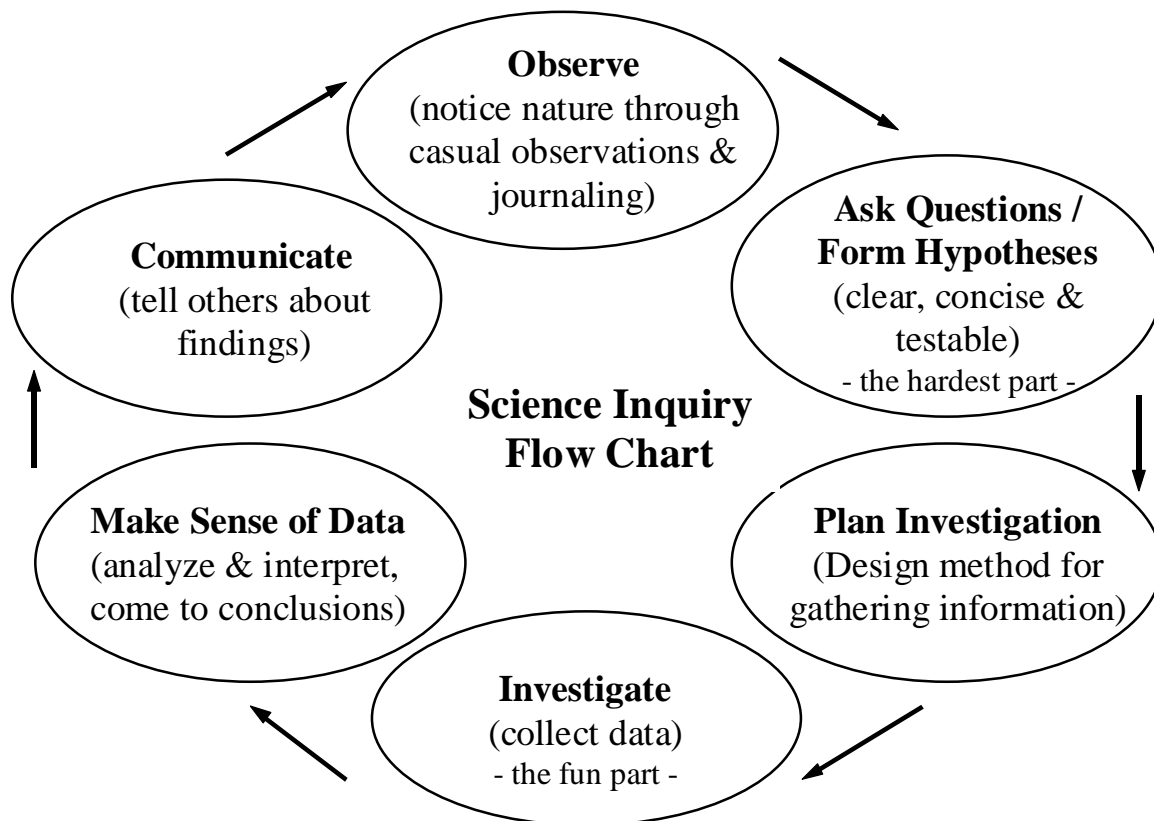
Science Inquiry

Science inquiry is an investigation of how the world works. It is a process for answering questions and solving problems based on observations.

Here is how science inquiry works:

1. Make observations of your surroundings using all your senses. Pay attention to what you see, hear, smell, and feel. Write about or sketch observations in a journal as a way to remember what you have experienced.
2. Ask lots of questions (inquire) about your observations and then focus on the one question or develop one hypothesis that you are most interested in and that you think you will be able to answer. Make sure that it is clear, simple and testable.
3. Plan an investigation. Use your creative and critical thinking skills to come up with a method for collecting data to answer your question or determine whether or not your hypothesis is correct.
4. Conduct the investigation and gather data.
5. Make sense of your data. Analyze and interpret what you found so that you can answer your question or confirm your hypothesis.
6. Communicate! Tell people about your findings.

When you design and conduct your own investigations you gain a better understanding of the world.



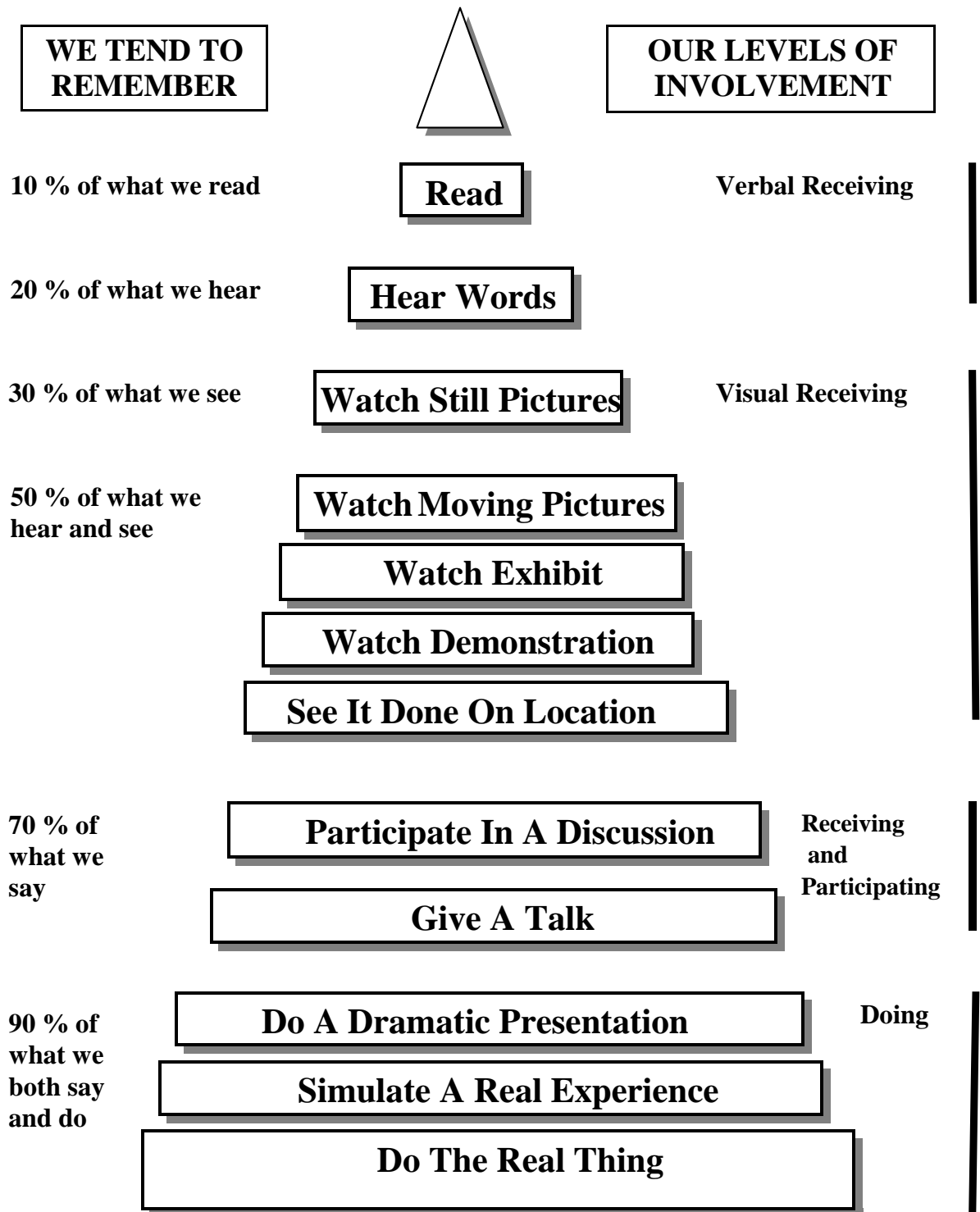
What is a hypothesis?

Observations give us answers to questions about the natural world, but they almost always give rise to still more questions. When a scientist wants to know the answer to a very specific question, forming a hypothesis that can be tested is usually the best way to find the answer. A hypothesis is a testable explanation for an observation. See the following examples.

Hypothesis Examples:

- There is more dissolved oxygen in the river than in the wetland.
- The bigger the diameter, the older the tree.
- Plants that are herbs prefer slightly acidic soil.
- There is more wildlife activity near water in the forest.
- A higher diversity of macroinvertebrates live in slow moving water.
- Ground beetles are predators.

EXPERIENCE AND LEARNING



Characteristics of Children: Implications for Environmental Education

The Lower Grades

<u>Children in the lower grades tend to...</u>	<u>Implications for environmental education:</u>
1. ...be curious and employ all their senses in exploring the world around themselves.	1. Activities should promote touching, hearing, and use of the other senses as ways for gathering information about their environments.
2. ...bring to school a wide variety of cognitive abilities.	2. Activities should be developed which offer children of differing cognitive abilities the opportunity to participate and succeed.
3. ...be limited in their ability to interpret time, space, and distance.	3. Activities emphasizing time, space, and distance should be introduced slowly and with great care, particularly in the early grades.
4. ...have difficulty in recognizing that objects have several properties.	4. Activities should emphasize objects with relatively small number of properties.
5. ...have difficulty maintaining logical consistency in their thinking.	5. Activities requiring logical development of relationships should be introduced slowly and with great care.
6. ...begin developing the ability to reason simple cause-effect relationships.	6. Activities should promote the examination of simple cause and effect relationships in their environment.
7. ...like immediate results and lose interest in prolonged experiences.	7. Activities should be varied, brief, and scaled to the attention span of the children.
8. ...be seeking out identification and clarification of their individual roles as persons.	8. Activities should include experiences aimed at answering the question, "Who am I?" in relation to their environment.
9. ...be limited in the complexity and variety of their communication skills	9. Activities should assist children in expanding and strengthening their use of verbal and nonverbal communication skills.

- | | |
|---|---|
| 10. ...be capable of recognizing the mood of the speaker as factual, serious, or humorous. | 10. The children's ability to sense to mood of the teacher in relation to the environmental activates will determine, to a great extent, the impact of these experiences on the children. |
| 11. ...enjoy pictures and read their own experiences into them as they talk about what they are. | 11. Careful selection of the illustrations by the teacher can promote interest in the environment and foster the consideration of simple relationships. |
| 12. ...enjoy using various art forms and media as a means of expressing their ideas and feelings. | 12. The children's use of art forms and media can provide valuable "feedback" concerning their knowledge of, and attitudes toward their environment. |
| 13. ...enjoy sharing their experiences with others in their class. | 13. Encouraging verbal sharing of children's experiences with the rest of the class can lead to valuable insights into the children's knowledge and attitudes and foster group socialization. |
| 14. ...enjoy listening to stories read to them. | 14. Careful selection of stories to be read to the children can arouse interest in various kinds of environmental experiences. |
| 15. ...have limited psychomotor coordination, dexterity, and stamina. | 15. Activities should be selected which do not make unrealistic demands on the children's psychomotor capabilities and endurance. |
| 16. ...possess a rudimentary value sense based on highly personal concepts of right and wrong. | 16. Activities should be selected which avoid complex value dilemmas related to externally-based value frameworks. |

The Middle Grades

Children in the middle grades tend to...

1. ...initially have difficulty isolating variables and often proceed from step to step in their thinking without relating each link to all others.
2. ...begin to distinguish between observations and inferences.
3. ...begin to distinguish between fact and opinion.
4. ...be developing special interests and hobbies.
5. ...begin to understand the relationship between cause and effect.
6. ...have increased and refined their psychomotor skills.
7. ...show increasing concern for the authenticity of materials which they read.
8. ...detect more subtle forms of a speaker's intent: informative, persuasive, evasive, etc.
9. ...become increasingly involved in activities as a personal commitment is made.

Implications for environmental education:

1. The teacher, in arranging activities for children should carefully control the number of variables and emphasis on logical relationships.
2. Activities should promote the distinction between observing and inferring and the logical basis for the process of inferring.
3. Activities should promote the distinction between the fact and opinion and their relative worth as a basis for decision-making.
4. Activities can offer children the opportunity to pursue their individual interests.
5. Activities should present situations in which cause and effect relationships may be examined.
6. Activities can be developed which require increased psychomotor coordination.
7. With the teacher's assistance, children can be helped to question the authenticity of their readings and consider means for testing their accuracy.
8. The degree of interest, enthusiasm, and commitment that the teacher possesses in relation to environmental issues becomes increasingly evident to the children.
9. Activities can begin to stress an action orientation that will result in a stronger commitment to the improvement of the children's environment.

10. ...become more capable, and desirous of, involvement in making decisions.
 11. ...gradually learn to function as part of a group and begin to understand social requirements and social responsibility.
 12. ...often relate to people and places vicariously through literature.
 13. ...begin to express value reasoning based on viewing life from various points of view other than their own.
10. Activities can begin to involve the children in making decisions about themselves and their environment.
 11. Activities can foster group experiences and promote the idea that the actions of individuals affect groups and that the individual has a responsibility to the group.
 12. Consideration of other environments revealed in literature can help children examine their own environments more critically.
 13. Activities can provide opportunities for making value decisions on a basis other than that which is right or wrong for them as individuals.

The Upper Grades

Children in the upper grades tend to...

1. ...begin to handle two or more variables with ease and comprehend logical relationships.
2. ...begin to make predictions based on systematic analysis of past experiences.
3. ...begin to develop the capability to hypothesize and develop tests of hypotheses.
4. ...are beginning to develop the ability to discriminate, clarify, and challenge experiments.
5. ...begin to see discussion as a way of working toward group decisions and the resolution of issues.
6. ...become capable of understanding decision-making processes and the resulting implications of these processes.
7. ...require the opportunity to assume responsibility in order to learn the relationship between choice and responsibility.
8. ...begin to examine and question established belief systems.
9. ...begin to comprehend value reasoning based on what is best for society, the greatest number, or the social order.

Implications for environmental education:

1. Activities can deal with larger number of variables and promote the search for logical relationships.
2. Activities can be developed which emphasize the process of predicting.
3. Activities can promote the formulation of hypotheses based on data and the development of means for testing them.
4. Activities can promote the identification of significant environmental questions and the clarification of environmental issues.
5. Activities can be developed around more complex issues to be resolved through group presentations.
6. Activities can provide operatives for children to be involved on decision-making in a context of responsible action.
7. Activities can promote the concept of choice and promote decision making in a context of responsible action.
8. Activities can be developed which raise questions about belief systems and allow the examinations of the foundational beliefs on which such systems are based.
9. Activities can be developed which allow more complex value judgments about environmental issues.

Multicultural Education

Connecting with Environmental Education

Environmental and multicultural education are compatible efforts united by mutual interests and shared perspectives. Both are primarily interested in human interaction; environmental education examines the human-nature relationship, whereas multicultural education probes the human-human relationship. Each discipline views a student's actions as being embedded within a cultural context, a context that mediates his or her attitudes and behaviors.

Increasingly, both environmental and multicultural educators are advocating a problem-posing and problem-solving approach to take students beyond the fear of diversity and difference. Through the use of such an approach, each hopes (1) to enable students to critique our society's habits regarding diversity and (2) to examine how life choices can be changed so as to achieve a more caring, connected, and respectful way of living.

Provide opportunities for students to develop:

- Self-awareness
- A means of pursuing their own interests regarding the topic of study, in a manner consistent with their own learning style.
- Ways of coming to know the topic of study through learning styles that are less familiar to them.
- Interpersonal and group communication skills around the topic of study.
- An understanding of the meaning of 'culture.'
- An understanding that everyone embodies a culture.
- An appreciation for different perspectives and how that diversity provides a richer, more complex pool of ideas concerning the topic of study.
- A sense of community within the classroom; that is, creating a place where students feel comfortable, yet engaged, and where different points of view can be expressed.
- Familiarity with a variety of ethnic and cultural communities' experiences with and contribution to, the topic being studied.

Adapted from Project Learning Tree: Environmental Education Activity Guide.

West Eugene Wetlands Volunteer Evaluation

(To be completed by Environmental Education Coordinator)

Date: _____

Volunteer's Name: _____

Evaluator's Name: _____

<u>Presentation:</u>	<u>Excellent</u>	<u>Good</u>	<u>Needs Work</u>
1. Was the volunteer audible and did he/she make eye contact?			
2. Was the volunteer friendly and approachable? Did he/she develop a good rapport with the students?			
3. Was the volunteer dressed appropriately?			
4. Were the volunteer's explanations age-appropriate?			
5. Did the volunteer encourage participation and listen well to the students?			
6. Was the guide flexible and attentive to the interests of the students?			

<u>Organization:</u>	<u>Excellent</u>	<u>Good</u>	<u>Needs Work</u>
1. Were the activities well organized?			
2. Was there an introduction and explanation of the rules?			
3. Did the volunteer manage the group well?			
4. Was the volunteer attentive to each student's physical needs?			
5. Were time constraints considered?			
6. Did the volunteer develop a good rapport with the adult(s) and seek their cooperation?			

<u>Information:</u>	<u>Excellent</u>	<u>Good</u>	<u>Needs Work</u>
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1. Was the volunteer knowledgeable about the subject matter presented?			
2. Was the information presented accurate?			
3. Did the volunteer demonstrate comfort and skill in using the WEW curriculum materials?			

Comments & Suggestions:

**West Eugene Wetlands
Field Trip Evaluation Form**
(To be completed by volunteer)

Each volunteer that works with your group will submit a copy of this form to the Environmental Education Coordinator for the West Eugene Wetlands.

Teacher's Name: _____

School: _____

Date of Field Trip: _____

Volunteer: _____

1. **Rate the level of academic preparation exhibited by the students.**

2. **Rate the overall level of non-academic preparation exhibited by the students. (Includes things like gear, group dynamics, etc.)**

3. **In the following categories, what problems (if any) did you encounter, and what solutions did you and the teacher do to correct them?**
 - a. **Student Behavior:**
 - b. **Logistical Operations:**
 - c. **Other:**

4. **Please evaluate the overall effectiveness of the chaperones.**

5. **Are there any special considerations that should be kept in mind in the future when working with this teacher and this school?**

6. **Any other comments?**