Florida
PLT, WET, and WILD Facilitator Handbook

Third Edition
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Footnotes

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The Florida Facilitator Handbook for Projects Learning Tree (PLT), Project Water Education for Teachers (WET), and Project Wildlife in Learning Design (WILD) is a culmination of efforts from many individuals.

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Introduction

This handbook is a guide for facilitators who conduct educator professional development training workshops for Project Learning Tree (PLT), Project Water Education for Teachers (WET), or Project Wildlife in Learning Design (WILD). It explains the responsibilities that are common to all environmental education facilitators: how to find a workshop site, how to publicize your workshop, and what to include in the workshop itself.

It discusses group dynamics, workshop materials and equipment, and how to involve resource specialists, and gives suggestions for workshop follow-up. It also examines educational strategies you may want to model and discuss, including cooperative learning, teaching outdoors, and adult education. Finally, this handbook contains templates and documents for your use in planning and conducting workshops.

You can use this handbook as a step-by-step guide for planning and conducting your workshops. If you are a “seasoned” facilitator, you can use it to find new ideas to enhance your workshops.

Based upon past experience, the main tasks for effective facilitator development include:

- Becoming familiar with the project’s mission and goals
- Becoming familiar with the materials
- Understanding the role of the facilitator in administering the program

The term “projects” as used in this handbook refers to any of the three environmental education projects commonly used in Florida — Project Learning Tree, Project WET, and Project WILD.
Part I: Educator Workshop

The only way to receive the core activity guides is through an educator workshop. The activity guides cannot be purchased by organizations or individuals. Supplemental information to the projects can be purchased by individuals (Contact the project coordinator for additional details). During workshops, participants become familiar with the project’s missions and goals and the guide’s layout and contents. A good workshop provides participants with the confidence, experience, and inspiration to use the materials they receive.

WORKSHOP GOALS

Workshops vary widely, depending on the presenter’s style and the audience’s needs and backgrounds. However, the main goals of any project workshop are always the same:

- To learn how to use the activity guide and become familiar with material in the activity guide
- To encourage educators to approach learning and teaching from an environmental and multidisciplinary perspective
- To prepare educators to use project materials by providing a sampling of teaching strategies and activities that will help educators and students become aware of the environment, their impact upon it, and their responsibilities for it
- To create a setting in which educators, resource personnel, and others can share information and to encourage ongoing communication and support for environmental education
- To prepare educators and students to make informed and educated decisions
- To provide a fun and motivating forum that encourages educators to enjoy learning
- To demonstrate how to address the Florida Sunshine State Standards (SSS) using activities from the guides

Educators will use educational materials if they are shown how these resources will actually enhance what they are already teaching. In the workshop setting, educators should experience several activities that model various styles of teaching and could even select activities to present themselves. In this way, they see for themselves how activities can be adapted to fit their own curricula and styles. During the activity wrap-
ups, where attendees are encouraged to share ideas, learning takes place in the exchange between participants, as well as with workshop leaders.

**WORKSHOP DESIGN**

The workshop format should show teachers how to use the projects to teach in all subject areas: science, math, reading, language arts, social sciences, art, health, and even physical education. Nonformal educators — such as naturalists, outdoor educators/instructors, resource professionals, interpreters, docents/volunteers, home school instructors, and youth organization leaders — should be shown how the projects can be used as a resource of activities to enhance or complement their work with young people.

Wherever possible, plan to use hands-on instructional methods and demonstrate to participants how to use these activity-based teaching methods with their students.

The entire workshop structure should follow a “learning cycle” model. There are many different learning cycles, some with two steps and some with five. All have two elements in common: 1) information, insights, or concepts are introduced, and 2) learners reflect on that information and apply it to their own world. An experiential learning cycle suggests that a good way to introduce that information is through orchestrated experience or activity.

The Five E’s Learning Cycle is one of many good models that can be used. Page 57 describes this model in more detail. Many of the project activities follow an experiential learning cycle. Your workshop can demonstrate the cycle at the activity level and also reflect the cycle in the entire agenda.

- **Experiencing.** The learning process usually starts with an experience. The learner becomes involved in an activity by doing, observing, or saying something.

- **Processing.** The processing phase involves learners in thinking about and sharing what happened. Learners first share their reactions, and then discuss and evaluate their reactions with others. Questions to help processing include the following: What was ___ like for you? What were your reactions to ___? How did others react to ___? What happened?

- **Generalizing.** In this phase, learners explore what they learned from the experience. They may also try to abstract generalizations from it. Questions to help generalizing include the following: What did you learn from this? How does this relate to other experiences? What was the most enlightening part? What would you do if you could do it again? What do you think the consequences of ___ were?
Applying. Building on the knowledge they have gained, learners in this phase confer personal meaning into the abstracted learning. Questions to help them apply the concept include the following: How could you apply or transfer that? How could you repeat this again? How will you use this activity when you get back to the classroom? How should this activity be structured for younger students?

REGISTRATION FEES

Workshops are typically conducted at either no charge or a nominal fee to participants. Because it is sometimes easy for workshop participants to sign up for a “free” workshop and then not attend, you may wish to pursue the idea of charging a workshop fee that can be refunded (in full or in part) if an enrollee actually attends the workshop.

Income from workshop fees is intended to be used to cover the costs of snacks, special materials, meeting room fees, and any other direct costs that you or the sponsoring organization incur while conducting the workshop. Check in your project’s facilitator handbook supplement for specific details. If you provide college or university credit or continuing education credits for teachers, additional fees may be required by the specific college or university.

BECOMING A FACILITATOR

Facilitators are the lifeblood of the projects. They are trained and certified to conduct workshops for educators. Facilitators guide workshop participants through the process of learning how to use the project’s materials. Many facilitators enjoy interacting with other facilitators and benefit from sharing their experiences.

Add your own experiences to this handbook, things you want to try at future workshops, and ideas you pick up along the way. If you find an approach that works that you would like to share, please contact any of the project coordinators.

Being a facilitator means that you are sometimes a teacher and sometimes a leader. A facilitator serves as a guide, helping workshop participants gain a better understanding about the program, its use, and potential impacts on a learner’s environmental awareness and understanding.

As a facilitator, you set the stage for learning and encourage participants to explore and develop as professionals. See Appendix A for a checklist of facilitator skills.
FACILITATOR RESPONSIBILITIES

- Planning and conducting a minimum of one six-hour workshop each year
- Setting up a workshop, completing and returning forms, and preparing materials
- Structuring a positive, hands-on experience that allows each member of the group to participate in activities, and as much as possible, achieve his or her objective for being at the workshop
- Modeling the philosophy of “awareness” (what is the project, and what does it contain) to “action” (participants make plans for use of the activities, then return home and use it)
- Motivating (through an enthusiastic presentation) and assisting the participants in developing applications of program for their own settings

A PLACE FOR OPINIONS

It is the facilitator’s role to ensure that the integrity of the program remains intact as educators learn how to use the materials. By no means should a project be used to promote political agendas by the facilitators or educators who use this program. As a facilitator you are representing the sponsoring agency of the project. This doesn’t mean that facilitators and workshop participants cannot have their own political views, but as an agency volunteer opinions should be kept to yourself.

In fact, each project promotes tolerance for diverse viewpoints and all viewpoints should be discussed. Some activities encourage lively debate about controversial issues which is crucial to the educational process. If confronted with disagreement or conflict in a workshop, encourage others to express their views: “Are there other ways to think about this question?” And ask the group how a teacher should handle a situation like this in the classroom. Let your participants answer the hard questions!
Part II: Before the Workshop — Planning

Workshops consist of planning and preparing, conducting the workshop, and assessing and evaluating the workshop. In this section, you will learn about the preliminary actions to take to arrange a workshop, and how to create the workshop format (Refer to the Workshop Checklist in Appendix A).

PRELIMINARY WORK

Arranging an Educator Workshop

Workshops may happen in a variety of ways. Sometimes a sponsoring organization or the project coordinator identifies a need and then arranges with a facilitator to plan and present the workshop. More often, a facilitator decides to do a workshop where he or she sees a need and arranges the workshop through a sponsoring organization.

To arrange a workshop, begin by checking with your local school, your school district, a nature center, teaching colleges or universities, resource agency, county extension office, or other such organizations to find out if they would be interested in sponsoring a workshop. A survey of PLT educators in Florida revealed that a majority enjoyed outdoor workshop locations and remembered them. Other possibilities could include contacting museums, county or state parks or forests, or conservation-oriented organizations (such as an Audubon Chapter, Girl Scouts, or 4-H) to gain their interest in sponsoring a workshop. Sponsoring a workshop can involve donating “freebies” to give away, providing snacks and/or lunch for all participants, or providing a room for the workshop. Many state parks are willing to offer a fee waiver for educational purposes. Contact or write a letter to the manager of the park requesting a fee waiver.

Co-facilitating

It is highly recommended, although it is not a requirement of Projects WET or WILD, to have at least two facilitators leading a workshop. “Team teaching” brings people with different backgrounds together and gives you free time to prepare for the next activity or take a break. You might co-facilitate with a resource specialist or educator trained in the project.

Resource professionals include individuals with expertise in such areas as air quality, energy, forestry, hydrology, soil science, water, or wildlife. A professional can work with educators on the activities you lead, help with specific content information, or provide technical assistance in hands-on activities. The resource specialist may also be able to supply workshop materials and equipment, supplemental handouts, and other resources, and may be able to provide follow-up to teachers as a classroom speaker.
Educators include people who are teachers, interpreters, extension agents, naturalists, and program coordinators. They often have a good ability to speak to groups and should be up-to-date on Florida’s education reform activities.

One of the best co-facilitation strategies is to pair an educator and a natural resource specialist — in this way, the expertise of each can be tapped for the workshop. You may find it useful for each of you to complete the Co-facilitating Worksheet questions in Appendix A and discuss your responses. This cooperative planning early on will allow for smooth transitions and will also enhance your working relationship.

**Arranging for In-service or University Credit**

Offering some kind of credit can be a big selling point to potential workshop participants. Although the state project offices are not certifying agencies, many school systems offer in-service credit for educators that attend project workshops. Contact your local school district for information on how to arrange for credit. If you are affiliated with a college or university, you may be able to work this material into a course that offers graduate or undergraduate credit. If credit is provided, use this when you market your workshop, but do not promise credit if it may not be available.

In-service credit sometimes requires copies of agendas and certificates, as well as follow-up work. Contact your project coordinator or credit-giving organization for suggestions and examples of possible assignments.

**Combined Project Workshops**

The opportunity to offer a multi-project workshop has many benefits to you and to the participant. Participants walk away with multiple guides and training on how to combine activities from the guides to their youth programs and lesson plans. It may even be more of an incentive for an educator to attend. Facilitators will have opportunities during the workshop to prepare for their next activity, learn something about the other program, and see new ways for the activities to be integrated with other programs.

It is important to remember that each project requires a minimum of 5 to 7 activities. When planning the workshop, you may want to consider offering a two-day training to allow enough time to meet the project requirements. Contact your project coordinators for assistance in creating a combined project agenda.
Combined Project Workshop Tips

- Contact both project coordinators about your interest to do a combined workshop
- Allow enough time during the workshop to meet all the requirements
- Use the combined Project Interactive History Activity (available for download on projects facilitators’ webpages) and the Project Venn Diagram to show the similarities and differences between the programs (see Appendix A)

Deciding Where and When

Two important considerations in designing your workshop are the site and the time. Everything you do during the workshop will depend to some degree on these two factors.

Workshop Site

Successful workshops have been conducted in a variety of settings, from school sites to city parks, from museum classrooms to wooded retreats. Before selecting a site for the workshop, think about its advantages and disadvantages and compare these to the workshop goals. For example, a workshop at an environmental education center in a regional park can acquaint teachers with resources available to them in their area, while one held at the school site might help teachers see how the activities can be used in their own classrooms and will show them that the environment is wherever we are!

Think about ways you might overcome any disadvantages or constraints the space presents. For example, a retreat location may be wonderful for the spirit, but consider ways to include activities and discussion that help teachers relate to the day-to-day classroom setting. A meeting room can help participants focus on the day’s task, but can be stifling for nature lovers; plan a way to get participants outside for at least some of the day.

Wherever you plan to conduct the workshop, be sure to reserve the facility well in advance. Some facilities book up quickly. Confirm your reservation in writing or through email. Question the manager of the site about the facilities and the available audio visual equipment. It is also a good idea to provide the facilities with a copy of the workshop flyer in case they receive any questions about your workshop. Also, call a few days in advance of the workshop to be sure your reservation is not lost and to find out if there have been any site changes. If you are not able to visit the site prior to the workshop to check the room size, layout, etc., arrive at the site early enough to allow time to walk around.
Time

Although a typical workshop will be at least six hours long, you have a lot of flexibility about how this time is distributed. You may wish to conduct one day-long workshop. This type of workshop enables participants to become exposed to the materials through hands-on involvement with the project’s activities.

There are also advantages to shorter sessions spaced over a one- to four-week period. One approach to take with these shorter sessions is to offer an initial after-school session of an hour or two and concentrate on activities that fit the teachers’ curricula. A good selling point for participants is to show how the project’s activities easily complement what they do without more work on their part.

Between sessions, ask participants to conduct the activities (or other activities they select) in their classroom. At the next workshop session, they can share what happened and discuss adaptations or extensions they developed. Also, participants are able to review the activity guides and prepare additional activities for classroom use or for presenting to other participants at the next workshop session.

This two-session format provides a wonderful opportunity for the participants to try out activities while they are curious and excited about the project. If you decide to use this format, be sure that participants have an incentive and are accountable for attending both sessions. The drawback is that educators may not return for the second session if you distribute the guide at the first one.

Publicizing Your Workshop

Effective publicity gives potential participants information in advance, including

- A brief summary statement about the project.
- Goals of the workshop and key concepts to be covered
- Contact person, including address, phone number, and email address for further information
- Workshop materials — activity guides and other resources that may be available
- Attendance requirement for multiple sessions if the workshop is conducted on two or more days
- Date, time, and location (including a map and directions, if necessary)
- How this project can help teachers address SSS and Teacher Professional Development Protocol
- College or continuing education credit if available
- Sponsors
- What to wear
- Registration deadline
- Registration fee, if any
- Inclement weather guidelines
- Bag lunch, if needed
Use your imagination to create a flyer, a poster, or an announcement that conveys the above information (see Helpful Hints for Making Flyers on page 64 and sample flyers starting on page 65). Use whatever format works well in your setting. Show a draft flyer to a few potential participants and ask if they have ideas for improving it. Find out ahead of time whether the sponsoring organization will create flyers for you to distribute. The more specific you can be, the more likely you are to attract the audience you want.

Whenever possible, make use of existing communication channels within your organization or your school district. Flyers may be sent by mail, email, or fax to local schools, addressed to the principal or the in-service or curriculum coordinator. You may also want to include the workshop on your county or district calendar. Also, each project coordinator can post your workshop information on their website.

Another possibility is to announce your workshop through the newsletters and websites of various local educational associations, such as science, social science, or math councils, or environmental education or outdoor education organizations. A press release that features a spotlight or regular section on education may also be sent to local daily or weekly newspapers. Contact your project’s coordinator for guidelines and assistance in doing this.

It is helpful to know in advance the number of people who will be attending your workshop, so you may want to include a registration form at the bottom of your flyer and an email address or fax number. Besides letting you know how many people to expect, a pre-registration form can also help you structure the workshop to accommodate the participants’ specific grade level interests. To encourage early sign-ups, you may also state “Enrollment is limited — Registration will be accepted on a first-come, first-served basis.”

In order to make the workshop experience as positive as possible for those attending, you might consider setting a minimum and maximum number of participants. If you do this, make sure you have a way to contact participants before the workshop to let them know they are registered or to inform them if the workshop is canceled. Include a map on the flyer if you are not sending a confirmation letter or an email.

**Considering the Audience**

Before you plan the specifics of your workshop, it is helpful if you know some of the needs and interests of your participants. If you have enough lead time, you might prepare a pre-workshop questionnaire to find out their expectations for the workshop or their individual professional development focus areas. If you know beforehand that the group you will be working with has a special area of interest, you can tailor the entire workshop to suit their needs. For instance, you might announce the workshop as
“Project WET for High School Science Teachers,” “Project WILD and Literacy,” or “Project Learning Tree in the Urban Environment.” You then plan a workshop agenda to fit the special interests of the audience.

The state department of education has a teacher professional development protocol by which all public school teachers must follow to maintain their teaching credentials. The protocol outlines requirements teachers must meet at workshops where in-service points are given. For the projects this means that our workshops need to be modified to meet the teachers’ needs. As facilitators, it is important to know how our resources meet the need and understand the terminology used in the protocol. An explanation on the components of the protocol and examples of how projects meet the requirements is in *Improving In-service Teacher Workshops in Florida* (see Appendix A).

Even if you do not know the specific needs of your audience before you begin planning, try to imagine what the audience would want from the workshop. Is their attendance mandatory or voluntary? If it is mandatory, ask yourself who is making them attend, and why, and be prepared to show what they can gain from using the project’s activities with their students.

You might also consider whether there are any local issues or current movements in education or natural resources that the participants might be concerned about or interested in discussing. If you identify possible issues or trends, think about how you could address these during the workshop so that each person has an opportunity to participate.

**Educational Techniques**

A variety of teaching techniques teachers use that could help your workshop format can be found in Appendices C and D. These techniques cover topics that range from the types of learning styles of people and how to engage them to what to consider before leading outside activities.

The next section on Adults as Learners provides additional techniques that you can incorporate with the educational theory articles.

**ADULTS AS LEARNERS**

Adults as learners are somewhat different than children as learners. The following characteristics of adult learners may help you plan and present your workshops.

**Orientation to Learning**
- Adults will commit to learning something when they consider the goals and objectives of the workshop to be important to them — job-related and perceived as being immediately useful.
• Adults want to initiate their own learning and be involved in selecting objectives, content, and assessment.

**What you can do.** State workshop goals early in the schedule. Be prepared to help participants see the need for learning something new. Assume that each person wants to understand or learn. Ask participants what they expect to get out of the workshop.

**The Learner’s Self-Concept**

• Adult learning is ego-involved. Learning a new skill, technique, or concept may promote a positive or negative view of self. Adults may fear that others will judge them, which produces anxiety during new learning situations.

• Adults reject prescriptions by others for their learning, especially when what is prescribed is viewed as an attack on what they are presently doing.

**What you can do.** Provide an environment in which the participants feel safe to try something new or to consider new ideas. Never criticize participants, but be positive and affirm each person in some way.

**The Role of the Learner’s Experience**

• Adults come to any learning experience with a wide range of previous experiences, knowledge, skills, self-direction, interests, and competencies. This means that the richest resource for learning is often the group of adult learners themselves.

• Adults will resist learning situations they believe are an attack on their competence, thus they may resist imposed workshop topics and activities.

**What you can do.** Accept and value participants as individuals with their own experiences, knowledge, and skills. Provide ways for participants to contribute to each other’s learning through techniques like group discussion, problem-solving, and peer-helping activities.

**Motivation**

• Motivation is produced by the adult learner: all one can do is encourage and create conditions that will nurture what already exists in the adult.

• Adult learning is enhanced by behaviors that demonstrate respect, trust, and concern for the learner.

**What you can do.** Show participants that you respect them and are concerned for them. Do not blame participants who do not pay attention or are reluctant to participate; instead, look for ways to adjust the workshop to increase interest. Consider questions like, “How would you do this in your setting? What would you see as some of the challenges of this activity?” Questions that acknowledge that each person comes with their own set of experiences and expertise help to value every workshop participant.
WORKSHOP FORMAT

Selecting Activities

After you have considered your audience, you are ready to select your activities. Do this while you are planning the agenda so that you get an idea of how much time you will have for modeling activities. Keep in mind, however, that a six-hour workshop typically includes participants’ experiencing about five activities (this may vary, based on which project is being offered) in order to get a good sense of the nature of those activities.

The activities you choose for the workshop should depend on the goals of your workshop, the interest areas of the participants, the time and space available, the site, and your own personal preference. For a diverse group of educators, select activities that demonstrate the interdisciplinary nature of the materials, their usefulness in many subject areas, and applicability to several grade levels. If you know that your audience has a special interest or age group, select activities to meet their needs. If the workshop focuses on a particular theme, choose activities connected with that theme.

Select activities that involve a variety of learning strategies, for example, creative writing, simulation game, drawing, outdoor investigation, and role play. You might also want to select activities that demonstrate the project’s ability to help students move from awareness of ecosystem and environmental issues to action skills.

Give participants an opportunity to participate in action-oriented activities as well as a chance to sit periodically during quiet activities. By providing this variety, you give participants a nice sampling of the activities in the guides and create a more enjoyable and well-rounded workshop. Also allow for a mix of indoor and outdoor settings, weather permitting. Educators can see first-hand how flexible the activities are, and they get a chance to enjoy the outdoors too.

In general, plan to include activities you find exciting — your enthusiasm and excitement will be contagious. Many facilitators are more comfortable using the
activities they have experienced themselves or have done with students. Trying out an activity before the workshop will help you in several ways: you will know first-hand how the activity works; you may develop interesting extensions or variations or locate valuable resource materials you can share; and you may be able to bring in student work to demonstrate the activity’s effectiveness.

Feel free to modify any of the activities with your own ideas and adaptations to fit local issues or interests, the time and space available for the workshop, and your own facilitation style. Through your variations, you will be emphasizing an important idea: the activities are useable as written, and they can also serve as points of departure for new explorations. It is also helpful to point out that the activities use materials that can easily be found in the home or school. Clearly convey this flexibility during your presentations.

To demonstrate current practices of teaching conceptual learning, you may want to plan your workshops in a way that will show how the project does this. For example, use a storyline to connect the activities you choose to demonstrate. These activities can be built around a theme or can focus on a special interest in your community.

**Using the Sunshine State Standards or Next Generation Standards**

Depending on your audience, you may want to emphasize that the project complements their classroom goals. The project’s correlations with the SSS are an exceptionally strong marketing tool for the involved teachers and their administrators. It is a good idea to select a variety of subjects to emphasize and to highlight at least one standard for each activity you select. Highlight the benchmarks addressed on all marketing pieces for the workshop.

Project Learning Tree correlations are available online at [http://sfrc.ufl.edu/plt](http://sfrc.ufl.edu/plt).

Project WET correlations are available by printed copy, as a CD, or online at [http://www.sjrwmd.com/education/projectwet/facilitators.html](http://www.sjrwmd.com/education/projectwet/facilitators.html) or [http://www.swfwmd.state.fl.us/education/projectwet](http://www.swfwmd.state.fl.us/education/projectwet).

Project WILD correlations are available as a CD or online at [http://myfwc.com/educator/sss.htm](http://myfwc.com/educator/sss.htm).

You may wish to print out all of the benchmarks that are identical for several activities you will be conducting and use the benchmarks in your discussion to emphasize the connections. There are two types of visual items that can be incorporated into your workshop — table posters or SSS note cards.
Table Posters

Table posters showcase a particular activity and the benchmarks that apply. The following supplies are needed: file folder, old magazines, markers, crayons, glue, scissors, activity guide, and standards.

1. Pick an activity to display as a table poster
2. Write out title, objective, and method (grade level is optional) of the chosen activity on file folder or use word processing, print from computer, and glue to file folder.
3. Cut out pictures from magazines that represent the activity and glue them in a collage format all over the folder – front and back.
4. Print standards that correlate to the activity and glue them on the back of the folder.
5. Display the folder on a table.

See sample in Appendix A.

SSS Note Cards

Before the workshop, gather the SSS benchmarks that correlate to the theme of the workshop. If the workshop focuses on science, then chose the science standards for the appropriate grades. Or, if the workshop is focused on reading, bring the reading benchmarks.

For example, if the workshop focused on fourth- through sixth-grade energy activities then all the benchmarks and standards would relate to energy. The following is a sample activity to help participants make SSS correlations.

1. Go to the Florida Department of Education SSS web site (http://www.firn.edu/doe/cerrick/prek12/frame2.htm).
   A. Go to the column that reads SSS with Grade Level Expectations.
   B. Find the subcolumn 4–6 and go down until you reach the Science line.
   C. Click on that dot.
   D. Print out the Science Standards.
   E. Cut out each standards with associated benchmarks.
   F. Glue them to note cards.

2. Hand out the note cards so that each participant has one at the beginning of the workshop.

3. After each activity, ask the participants if the standards that they have on their card would apply to that activity. The great thing is that there is no correct answer! Usually more than one benchmark will fit an activity. Each participant may see that
the activity has a different value to the curriculum they use. Summarizing the benchmarks will aid in seeing how PLT activities can enhance their existing curricula.

If your group is made up a variety of grade levels, you can make cards for all levels and give the appropriate ones to the correct teacher. For example, a third-grade teacher would receive the 3–5 grade SSS and benchmarks.

**Planning the Agenda**

After you have considered your audience and have begun selecting activities to present, you are ready to plan the workshop agenda. The following sections will give you some ideas. Workshops should follow these steps to lead the participant from an **awareness** of the project to **knowledge** on the specifics of the program to an opportunity to **learn** about environmental concepts presented in activities and then, finally, to **action** — to use project materials in their teaching.

See your project’s Facilitator Handbook Supplement for examples of an agenda. This book provides a workshop agenda planning sheet example and sheet for your use in Appendix A.

The most important workshop elements to include in an agenda are

- Welcome, agenda overview, and goals
- Getting acquainted/icebreakers
- Project information/history
- Activities experienced by participants
- Hike through the guide
- Other resources
- Individual classroom planning
- Workshop wrap-up and evaluation
- Certificates and feedback

Following are things to consider when planning each of the above workshop elements.

**Welcome, Agenda Overview, and Workshop Goals**

Plan how you will welcome the participants, introduce yourself and other presenters, and give a brief overview of the agenda. Allow 15–20 minutes to do this. Gather supplies for name tags, such as markers, stamps, and stickers.

If offering in-service points, plan on having educators take the pre-assessment during this section or as they arrive. Make enough copies, plus a few extra. Check with the credit-giving organization for any rules they have on the pre-assessment test. They may
have a particular type of pre-assessment test they want used, like multiple choice versus matching (see Appendix A for examples).

**Getting Acquainted/Icebreakers**

Plan how you will have participants introduce themselves. They are coming together for the workshop as learners and, especially if they do not know each other beforehand, creating a friendly and informal atmosphere at the beginning of the workshop can enhance the learning environment. Even if participants know each other, this is an opportunity for you to learn something about them, for their friends to learn something new about them, and for some general learning to begin. An icebreaker can also be used to begin teaching your environmental topic or could include an activity from the project guide. Although icebreakers can go on for 30 minutes, you may want to cut it short to allow time for other activities (see Appendix A for examples).

**Project Information/History**

Plan to present the following information—five to ten minutes is usually sufficient.

- When, why, and by whom was the idea for the project initiated
- An explanation of the project’s national and/or state sponsors
- What materials are offered
- How the project materials were developed, tested, and evaluated

**Activities Experienced by Participants**

Plan to present activities in a way that engages the participants as learners first, then allows them to reflect on the activities from their perspective as educators (see “Adults as Learners”).

Depending on your audience, you could have them share in small groups or in the group as a whole. Many of the discussion questions in the activities are excellent and demonstrate how the activities teach higher order thinking skills.

Be prepared to do outside activities inside, or have an alternate activity prepared in case of rain. If your workshop runs fast, you may want another activity planned and ready. You can never guess what might happen. But if you have prepared carefully and stay flexible during the workshop, you can deal with whatever comes up.
Hike through the Guide

Plan how you will help participants become familiar with the contents of the activity guide. You may choose to conduct a “walk-through,” pointing out important elements along the way. Or you might prefer to use questions in a competition between small groups. Another option is to create a hike that has participants thinking how to incorporate activities into their lesson plans or educational programs. An example of a WET, WILD, and PLT Hike Through the Guides can be found in Appendix A. See your project’s Facilitator Handbook Supplement for examples of other guide-specific hikes.

Other Resources

Consider how you will introduce participants to books, materials, or local resources that can supplement the project’s activities. For example, you could display books and materials throughout the day. For resources such as parks, arboretums, nature centers, museums, and local conservation groups, you might make a “resource chart” that participants add to throughout the day — then copy and send the ideas to participants afterwards. If your workshop is held at a park or a nature center, consider having a staff member welcome the group and take a few minutes to discuss the setting, what offerings may be available to school groups, and other resources they may have available for educators. See Appendix A for national and state resource agencies for available handouts, speakers, and other resources.

Refer to your project’s Facilitator Handbook Supplement for additional resources to help in your workshop.

Individual Classroom Planning

One of the initial questions participants are most likely to ask when they attend the workshop is “How can I use the projects in my classroom?” Individual classroom planning is an important component to include. Once your workshop participants have become familiar with the project and some of the activities, they need time to directly connect these new materials to the needs of their students and to their own teaching goals.

Plan adequate time for this component, even if you have to shorten something else. You might lead a brainstorming session and ask everyone to share their ideas. You could have participants form groups and devise plans for implementing the project in their classrooms, and then come together for discussion with the whole group at the end. Clustering participants by grades or subject areas is often helpful here. You might also consider asking them to select lessons that they might use in the next week, month, or school term. This helps to emphasize that the projects are not “something extra” for them to do, but actually can help participants teach what they already are planning to cover.
If offering in-service credit, often the teacher must turn in an assignment on how they will incorporate what they learned into their teaching. Set aside extra time for teachers to start this process at the workshop. Participants might also work independently to prepare specific plans for using project activities in their everyday teaching. If you want to include this individual planning, you might ask participants to bring textbooks or lesson plans to the workshop. This works particularly well in a school or in-service setting. Also, make a copy of the Curriculum Planning Worksheet handout in Appendix A for each participant.

**Workshop Wrap-up and Evaluation**

Workshop endings are just as important as workshop beginnings. Plan 15 minutes to have a good ending. Plan time for each participant to complete a Participant Survey or Evaluation form at the end of the workshop. Have enough copies for all participants, plus a few extra.

If this is an in-service workshop, now is the time to hand out the post-test. Gather all the information you need to provide additional instructions for how they will receive their in-service points, if needed.

**Certificates and Feedback**

If you know the names of the participants ahead of time, you can enter the names and the date on the certificates. Or you can wait until the day of the workshop and have participants print their names on the sign-in sheet as they would like them to appear on their certificate. If you cannot do this ahead of time, distribute them in a ceremony where each person states something they gained from the workshop.

**Arranging the Agenda Items**

Once you have thought about how you will present the different workshop elements, you will need to decide how much time to allow and the order of each element. An agenda planning sheet may be helpful to you and can be found in Appendix A. Refer to your project’s supplemental facilitator handbook for sample agendas.

It may be helpful to you to create two agendas. The one for facilitators should indicate the time period for each activity. The one for participants will not have times. Give them break, lunch, and stop times only. You can post their agenda on the wall if you do not want to make copies. For in-service credit, teachers will need a copy of the agenda to submit with their paperwork.

When planning the agenda, remember that the pacing of workshop activities is important. Offering a variety of activities will help participants stay interested in the
materials and ideas you present. Keep in mind that certain modes work better at certain times of the day. For example, after lunch — when many of us tend to get sleepy — physical movement activities can be more stimulating than watching a video. Activities work best if you alternate between indoor and outdoor or active and passive.

It is important also to think about ways to make the activities you plan to use accessible to all of your workshop participants. To allow participants to reflect on what they have learned, try to include some “alone time,” when individuals can reflect on the ideas or events of the workshop, as well as small group time, when they can share ideas with each other.

Be sure to include time for breaks. Short, frequent breaks can do wonders for reviving everyone’s energy levels. Plan on at least a 15-minute break every two hours. You may want to consider offering door prizes to keep participants on task and entice them back from breaks.

**Planning for Food and Beverages**

Snacks and beverages will help participants feel comfortable and welcome. Find out ahead of time whether the sponsoring organization will provide snacks and beverages or whether you will be responsible. Also, find out whether the workshop site has equipment for serving food and beverages, such as a hot water pot, cups, and spoons. If not, you will need to make arrangements for these items. Remember to provide a choice of beverages and food to accommodate different dietary preferences.

If the workshop will be an all-day session, you should also consider how much time to allow for the lunch break. Be sure to allow the time needed. In addition, remember that participants will need to know what to expect **ahead of time**. Consider the following options:

- Have participants bring a brown bag lunch; allow 30-45 minutes for eating.
- Order lunch to be delivered or provide a simple catered lunch (make sure it arrives 30 minutes before you want to eat).
- Prepare a sandwich, cookie, and fruit smorgasbord. This requires someone to set it up and 15 minutes for everyone to collect their food.
- Go somewhere nearby — include one hour for transportation and seating.
- Schedule a working lunch: participants work on a project while eating.

**Gathering Equipment and Materials**

Well before the workshop date, carefully plan what materials and equipment you will need for your workshop. Decide what you will need to present each agenda item and what participants will need. Find out what equipment is available at the workshop site
and how you can reserve the equipment you need. You can also ask participants to bring some items for the workshop — anything from food for a group snack to scrap paper (see Facilitator Resource Trunk on page 23).

If you plan to use AV equipment, check it before the workshop. Check to see that someone is available onsite to help with set-up of their equipment or make sure that you can set it up. Consider the group size when you choose audio-visual equipment. A video player and monitor work well in small groups, but an LCD projector is better suited for large groups (see Visual Aids Compared in Appendix A).

**Materials from the Project Coordinator**

At least four to six weeks before your workshop, send a completed workshop proposal form (refer to your project’s Facilitator Handbook Supplement for this form) to the appropriate project coordinator. The coordinator will send you the following materials:

- Activity guides
- Sign-in form
- Participant surveys/evaluations (check your Projects’ supplemental handbook to find out which forms they use). During the workshop wrap-up, participants *must* complete this survey/evaluation. Survey/evaluation responses are used to measure progress toward the statewide implementation goal. Return the surveys/evaluations to the project coordinator as soon after the workshop as possible (see your project’s Facilitator Handbook Supplement for a copy of this form)
- Facilitator surveys, evaluations, and summary reporting forms summarize some pertinent facts about your workshop. Return these to the project coordinator as soon as possible after your workshop (see your project’s Facilitator Handbook Supplement for a copy of this form)
- Certificates
- Other supplementary materials

**Use of the Project’s Exhibit**

Florida PLT has a portable exhibit which is effective at promoting the program. Requests for the exhibit should be made four weeks in advance, and the exhibit can only be kept for two weeks. The exhibit can be mailed if the requester pays shipping charges. Use the Exhibit Request Form in Appendix A of the PLT Facilitator Handbook Supplement.

Contact your local water management district or the Florida Department of Environmental Protection to make arrangements for using their interactive educational tabletop displays, which include the Groundwater Flow Model and the EnviroScape® Watershed Model.
Facilitator Resource Trunk

In addition to the materials the project coordinator will send, you may want to bring the following supplies as well as any other props for specific activities you are planning. If you conduct workshops often, you may wish to keep a “resource trunk” full of miscellaneous items such as the following:

- Masking tape, glue, or scissors
- Non-permanent and permanent marking pens, different sizes and colors
- Pens or pencils
- Name tags
- Paper clips or rubber bands
- Thumbtacks or push pins
- String or yarn
- Rulers
- Ziploc bags
- Blank paper, index cards, or crayons
- Supplies and props needed for specific activities, and instructions
- Resource materials that supplement activities and related environmental education curricula and guides
- Flip chart, easel, and markers, or white board and dry erase markers
- Receipt book for workshop payments, if needed
- Poker chips or some kind of counting chip
- Post-it notes
- Portable computer
- Computer projector
- Extra bulb for projector(s)
- Extension cord and power strip
- Flag tape and tree diameter tape
- Calculator
- Tree Cookie
- Door Prize Box
- Pipe Cleaners
- Tree identification handbook
- World globe or atlas
- Handouts, masters, and copies
Part III: Day of and During the Workshop

WORKSHOP TASKS

When you have finished planning and preparing for the workshop, you can focus your attention on setting up and conducting the workshop. When the workshop is over, do not forget a few essential post-workshop tasks that will need to be completed. These tasks are described in the next section.

SETTING UP

Consider location, travel time, and co-facilitators on day of the workshop. Allow yourself at least 60 to 90 minutes to set up the workshop space. Be sure someone is available to let you in early. If possible, you may want to set up the night before. Setting things up in advance means one less thing to worry about on the day of the workshop.

If you are not already familiar with the workshop site, locate restrooms, and emergency exits, the quickest or easiest way outside to the area where you are holding the outdoor activities, and light switches and plugs for audio-visual presentations. If you will be using any AV equipment, set it up and test it in advance.

The arrangement of tables and chairs is important. Arrange the room in a way you feel will best accommodate your workshop goals. For example, if you will be presenting both small group and large group activities, arrange tables and chairs to promote small group activities and still enable participants to get up and move around in larger groups. When possible, try to avoid the traditional “row of desks” arrangement.

Set up the materials you will be using so that they will be easily accessible when you need them. You might want to establish one table as your “home base” and place on it the items you will need during the workshop, such as handouts and materials for the activities. It is a good idea to mark your resource materials “For Display Only,” or participants may assume they are for the taking!

Consider setting up a separate table for resources, which can be taken by participants. Or consider developing workshop packets/folders with materials already placed in them. This lessens the time needed to distribute materials, but takes more preparation. If you have lots of stuff for the participants, include something to carry the items away in, such as a bag or a large envelope. If you don’t want participants taking materials until the end of the workshop, you may want to cover them with a table cloth.

Set up a table near the entrance with a sign-in sheet, name tags, and pens. If you like, make a sign that asks participants to make their name tags and to print their names on the sign-in sheet as they would like them to appear on their certificates. Also ask them
to print or double-check their contact information (mailing address, email, etc). If this is a teacher in-service workshop, have them pick up a pre-assessment test and complete at this time.

Post the workshop agenda where everyone can see it, or have copies available for each participant on the sign-in table. In-service credit teachers will need a copy of the agenda to submit with their paperwork. If beverages or snacks will be provided, set up a convenient, but separate, snack area.

**CONDUCTING THE WORKSHOP**

**Welcome, Agenda Overview, and Workshop Goals**

No matter how clearly you have stated the workshop purposes and time frame in your pre-workshop publicity, it is a good idea to restate them when you begin the workshop. People feel more comfortable if they know what to expect — and when to expect it. It is a good idea to post the workshop agenda on the wall, along with the workshop objectives. Provide name tags, tell them where the restrooms and drinking fountain are located, and give them other important information.

If offering teacher in-service points, this is a good time to ask them to take the pre-test or pre-assessment. Next, you may want to state the objectives of the workshop, then ask participants to suggest additional individual and professional reasons for being there. Write down the responses and post them in a visible area. Periodically throughout the workshop, take a moment to see if the individual or group reasons are being met. If you plan not to address an issue (reason), let people know so that they won’t expect it. If possible, suggest another workshop that will meet their need.

**Getting Acquainted**

All facilitators should participate in the icebreaker. This will allow you to get to know your participants and for them to become more comfortable with you.

**Activities Experienced by Participants**

To help participants reflect on an activity, you should have a quick debriefing after each activity. *Debriefing is often the most important part of leading an activity.* This is where you model the types of questions that educators can use with youth to help them process, generalize, and apply the information learned from experience. These will probably also be questions that engage higher-order thinking skills. For debriefing, you might invite participants to share:
• (process) What they observed or realized through the experience; what surprised them

• (generalize) What science, social studies or math concepts are stressed; how learners are likely to experience and understand these ideas

• (apply) What they would like their students to learn

• (apply) How they might adapt the activity to fit the needs of their students (for example, to fit a particular grade level or to accommodate students with special needs) or curriculum

• (apply) Ways that the activity could be enriched or extended

• (apply) Any classroom management ideas or other suggestions they might have

• (apply) How they see it addressing the SSS

**Hike through the Guide**

If you allow participants to work alone or in groups to complete a Hike worksheet, walk around to check on everyone to see if they have questions on locating an item or need clarification about a question. Consider handing out the activity guides and doing the hike after lunch or at the end of the workshop to keep participants in attendance. Otherwise, if guides are given out before lunch you may lose some of the participants during lunch. Remember, participants must take the full 6-hour workshop in order to receive an activity guide.

**Other Resources**

Introduce additional resources that you, your co-facilitators, or speakers have brought. Encourage participants to take handouts. If you run out of resources, keep a list of names and addresses of those to send copies to. This is a good time to point out how the additional resources complement project activities.

**Individual Classroom Planning**

Providing planning time is one of the most important things we can do in a workshop. Project coordinators have discovered that teachers trained through workshops have consistently used the activities they participated in while attending the workshop. This speaks highly of those facilitating the workshops, but also creates potential repetition for students if teachers representing different grade levels from the same school attend the same workshop. Students might repeat the same activities every year.
The opportunity to partner with a team of teachers from a school or district across grade levels provides unique advantages to “integrating” project activities as part of the adopted curriculum. By using activities as part of an overall plan for integration of the environment into all subject areas, students have access to a more coherent learning experience (see School or District Curriculum Integration in Appendix D).

**Workshop Wrap-up and Evaluation**

The emphasis here is less on fun and more on developing a renewed spirit of responsibility toward teaching about the environment. You might also allow time for verbal feedback and suggestions for improving future workshops. Some suggestions for “wrap-ups” include:

- Memory circle. Have participants share something they learned or experienced at the workshop.
- Complete the sentence “I plan to use this guide to…."
- Postcards. Have participants address postcards to themselves and then write a goal on the back on how they plan to use the guide. Project coordinators then send these postcards to participants approximately six months later as a reminder of the goal they set.

It is very important that the surveys/evaluations are completed and turned in since this is how the participants are added to the national project databases and how project coordinators keep track of book distribution.

If this is an in-service workshop for credit, now is the time to hand out the post-test. Provide additional instructions for receiving their in-service points, if needed. For example, if an assignment is due in order to get their points, inform teachers when the assignment is due and where to turn it in.

**Certificates and Feedback**

Once participants have turned in their evaluation/survey, you may want to give them their certificate of completion, or send a letter with the certificate later.
Workshop Tips

✓ Make time before the workshop to greet individuals as they enter the room. This will help participants feel welcome and will also help you feel more at ease with the group as a whole.

✓ Begin and end the workshop on time to be fair to those who come on time.

✓ Keep an eye on the pacing of activities and be aware of when participants need a break or a change of pace.

✓ Follow the agenda. Stay on task as much as possible.

✓ Provide contact information for all facilitators and guest presenters in case participants have questions later.

✓ Review the Workshop Checklist and the Facilitator Skills Checklist.

✓ Have enough copies of all handouts for all participants.
Part IV: After the Workshop

When the workshop is over, pat yourself on the back! Then take time to do the following tasks.

PARTICIPANT FEEDBACK

Read the participant evaluations/surveys to find out what went well and what did not go well from their perspective. This information provides a way to gauge the program’s strengths and weaknesses and start the process of making improvements. Do not take adverse comments personally, but consider why something happened and what you could have done differently.

EVALUATING THE WORKSHOP

Spend some time evaluating the workshop for yourself. What went well, and what things would you like to improve for the next workshop? Jot down your thoughts, or use the Facilitator Skills Checklist for a guide. You will find these personal notes helpful when planning future workshops. Meet with your co-facilitators to discuss the workshop. It is helpful to allow a few days to pass before completing your workshop assessment.

SENDING FORMS TO PROJECT COORDINATOR

As soon after the workshop as possible (within 2 weeks), complete the Facilitator Survey/Evaluation/Summary Report and mail it to the project coordinator, along with the completed participant surveys/evaluations. Without these forms, the project coordinator cannot place participants on the mailing list to receive future mailings, confirm their participation in workshops, provide needed participant data to the national office, or give credit to volunteers for facilitating a workshop.

Return any extra guides or materials to the project coordinator.

If teacher credits have been offered, make sure to turn in the proper documentation in the allowed time frame. Before the workshop, check with the organization giving the credit for the details.

ADDITIONAL FOLLOW-UP (optional)

The extent of your post-workshop follow-up will depend on your available time and resources. If time permits, a thank you note to each participant is nice. Include a summary of key concepts and a list of names and addresses of the workshop participants — these can help participants begin their own local project network. If you
did not distribute the certificates during the workshop, you can send them at the same time.

Follow-up can also be leading discussions with participants through an online network, organizing a learning community for participants to freely discuss success and challenges in using materials with youth, or collecting assignments due to finalize authorization of in-service points.

**Closing Thoughts for the Facilitator**

You’ve just digested a lot of material, but don’t let that scare you. The facilitator handbook is designed to be a help as you plan and present educator workshops. It’s a reference book we want you to consult often.

We realize, though, that you can’t really interact with a book. That’s why it’s important to remember that the PLT, Project WET, and Project WILD organizations are made up of a lot of individuals who are there to help answer your questions and address your concerns — the national office staff members, your project coordinators, and your fellow facilitators.

Conducting workshops takes a lot of time and hard work, but we want you to enjoy your association with each project. If you need help, just let us know. You’re a valuable part of the environmental education effort, and we appreciate your dedication. Good luck!
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Facilitator Skills Checklist

Important attributes for an effective workshop facilitator

- Listening to and understanding participants’ needs
- Developing a credible trust level with participants
- Having a composed and friendly manner
- Having a sense of humor
- Being willing to learn from mistakes and experiences
- Being flexible
- Projecting confidence
- Motivating participants
- Presenting information in an unbiased format

Important skills for leading a successful workshop

**Organizational:**

- Ability to allow adequate time for planning and preparation
- Ability to time and sequence tasks, activities, and demonstrations
- Ability to maintain a balance between paperwork and verbalized instructions

**Communication:**

- Is accepting
- Is supporting
- Actively listens
- Is encouraging

**Listening:**

- Being an active listener, not limited by one’s own preconceived notions or answers

**Reading a group:**

- Can convey key concepts without overwhelming participants
- Solicits verbal feedback — questions and comments
- Is aware of nonverbal feedback — noise level, restlessness
- Imparts information at everyone’s level of understanding

**Interactive:**

- Promotes each individual’s participation
- Gives value to processes and techniques of involvement
- Encourages feedback and questions
- Avoids teacher dependency
- Focuses participants in a positive way

**Transitional:**

- Summarizes where group has been
- Ties activities together
- Identifies where the group is going
- Keeps the momentum going
Co-facilitating Sheet

As you begin to plan a workshop with a co-facilitator, think about the following questions and share the questions with each other to help you clarify your roles.

★ Which parts of the workshop would each person like to be responsible for?

★ What elements would you like to include in the workshop? For example, consider what is important to you or what worked well in other workshops.

★ What signal could you use for interrupting when the other person is presenting?

★ How will you handle staying on task?

★ For each portion of the workshop, how will you field participant questions?

★ How will you make transitions between each of your presentations?

★ How will you get participants back from breaks in a timely manner?

★ Who will handle the creation and production of the agenda?

★ How will you manage the setup and cleanup process?

★ Who will be responsible for collecting materials?

★ Who will be responsible for calling time?

★ Who will be responsible for follow-up items, if necessary?
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</tr>
<tr>
<td>8:30</td>
<td>Welcome and Introductions</td>
<td>Introduce presenters and participants</td>
<td>Me</td>
<td>Name tag icebreaker</td>
<td>Room B</td>
<td>Name tags Marking pens Agenda</td>
</tr>
<tr>
<td>9:00</td>
<td>Birds and Worms</td>
<td>Learning about camouflage and incorporating math</td>
<td>James</td>
<td>Relay tag and graph creating</td>
<td>Courtyard</td>
<td>Pipe cleaners Markers Legal-size paper</td>
</tr>
</tbody>
</table>
In-Service Assessment (using the goals assessment method)

Workshop Assessment

Name: ___________________________ Emp ID#: ___________________________

School name/address: ___________________________________________________

Grade level(s): ___________ Subject(s): _______________________________________

Title of workshop: __________________ Facilitator: __________________________

Location: ___________________________ Date: ______________________________

Pre-assessment

During this workshop, I want to: ____________________________________________

_____________________________________________________________________

_____________________________________________________________________

I need the following skills and knowledge to accomplish these goals: ______________

_____________________________________________________________________

_____________________________________________________________________

Post-assessment

During this workshop, I ________________________________________________

_____________________________________________________________________

_____________________________________________________________________

By using the skills and the knowledge I gained from this workshop, I now will be able to

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

(Continue on the back if you need additional space)
In-Service test (using the quiz method)

Workshop Test for Energy Workshop

Name: ____________________________ (Circle one)  Pre-test  Post-test

In the blank to the left of the clues listed, write the letter of the answer that matches.

1. _____ The greatest source of energy for the earth.
2. _____ This process uses sunlight to produce sugars and release oxygen.
3. _____ The splitting is called fission, the coming together of atoms is called fusion.
4. _____ When moving electrons are forced along a path of copper wire.
5. _____ Visible wavelengths and invisible wavelengths like x-rays.
6. _____ Heat generated by natural processes beneath the earth’s surface.
7. _____ Uneven heating of the earth provides this source of energy.
8. _____ Snow on top of a mountain.
9. _____ Legs pumping the pedals of a bike.
10. _____ Wind, water, solar, and biomass are examples of this type of energy.
11. _____ One can refine 20 gallons of gasoline from one barrel of this.
12. _____ Turning down the thermostat, adding insulation, riding a bike, and turning off unnecessary lights.

A. What is radiant energy?  G. What is potential energy?
B. What is electrical energy?  H. What is kinetic energy?
C. What is nuclear energy?  I. What are ways to conserve energy?
D. What is wind energy?  J. What is petroleum?
E. What is geothermal energy?  K. What is sun?
F. What is renewable energy?  L. What is photosynthesis?
Icebreakers

Icebreakers are an important part of your workshop. They set the tone for the workshop by getting everyone up and participating. They are also a great opportunity to model a project activity. You may have your own favorite that you wish to use in place of one of these. Make sure you include introductions.

PLT: We All Need Trees
Project WET: Super Sleuth, Incredible Journey
Project WILD: Good Buddies; Aquatic WILD: Are You Me?

Human Scavenger Hunt
Create a form that reflects characteristics that will be interesting for your workshop (see page 45 for a sample). Give each participant a form and ask them to find someone who can meet each characteristic, filling in the names on the form.

Mute Squares
Make some large shapes (leaf shape, animal silhouette, etc.) and then cut them up into various geometric shapes (don’t make pieces too small). Place everything into an envelope and ask participants to take one piece as they arrive. Instruct participants to mingle and — without talking — try to assemble their shape.

The Obvious
Provide the group with hammers, goggles, and a large piece of ice and ask them to “break the ice.” Discuss states of matter for water.

Meet My Partner
Ask each participant to find another participant whom they don’t know well and find out things about the other person, such as where they work and what their interests are. Allow time to reverse the process, so that each learns something about the other. When the group reassembles, each participant should introduce his or her partner.

Bingo
Give each participant a Bingo card and tell them to find someone who fits each description listed in the Bingo squares and ask that person to sign their name in the box. A name can only be used once. The first person to fill in all the squares wins a prize. Page 46 has a Project WILD Bingo example.
Human Scavenger Hunt

Directions: Try to have at least one person sign his or her name after each statement. Each person can sign your list only once.

1. Has or had a tree house _____________________________________________
2. Knows the difference between a red oak leaf and a white oak leaf __________
3. Has camped in a state forest __________________________________________
4. Likes to sit by the fire _______________________________________________
5. Can name the river that drains this watershed __________________________
6. Has hiked in a national forest _________________________________________
7. Recycles newspapers ________________________________________________
8. Lives in a wooden house _____________________________________________
9. Knows what aspirin came from _______________________________________
10. Ate part of a tree today _____________________________________________
11. Knows Florida’s state tree ___________________________________________
12. Planted a tree on Arbor Day _________________________________________
13. Has counted rings on a tree __________________________________________
14. Has waded into a wetland ___________________________________________
15. Can name two pine trees that grow in Florida __________________________
16. Can name two endangered species in Florida ___________________________
Project WILD Bingo

Find “someone who” fits each description. Ask the person to sign their name in the box. You can only use the person’s name once. The first person to fill in all the squares wins a prize. Good luck!

<table>
<thead>
<tr>
<th>Was born in Florida</th>
<th>Has seen a black bear in the WILD (any state counts)</th>
<th>Has taken all WILD workshops (Project, Aquatic, Schoolyards, and Black Bear)</th>
<th>Has a pet other than a cat or a dog</th>
<th>Knows what “Okeechobee” means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is ticklish on their feet</td>
<td>Can name two invasive (exotic) animal species</td>
<td>Hunts or fishes</td>
<td>Is a vegetarian</td>
<td>Has visited a national park in the last 6 months</td>
</tr>
<tr>
<td>Is a bird watcher</td>
<td>Has a butterfly garden at home</td>
<td>Can name a mutualistic relationship</td>
<td>Can name a Florida habitat that depends on fire</td>
<td>Can name the three types of bears in North America?</td>
</tr>
<tr>
<td>Watches the “Crocodile Hunter”</td>
<td>Has seen a sea turtle lay eggs</td>
<td>Can name an animal that is in danger because it has a specialized food or habitat</td>
<td>Can name a National Wildlife Refuge in Florida</td>
<td>LOVES chocolate and peanut butter</td>
</tr>
<tr>
<td>Has never been to Disney World</td>
<td>Has read a book that was based in Florida</td>
<td>Knows what the acronym WILD means</td>
<td>Rides a bike or walks to work</td>
<td>Is a member of LEEF</td>
</tr>
</tbody>
</table>
Using the indices, find WET, WILD, and PLT activities that are appropriate for at least one of the following scenarios. Be prepared to discuss your selected activities, how you would use the activities, and/or how could you adapt the activities to your needs.

1. You teach first grade. One of the standards you are required to teach is exploration with the five senses. Find three activities that will help you meet this standard.

2. You teach a multi-age class of students ranging from kindergarten through third-graders. You are teaching a unit on habitats. Select activities that could work well with a small, multi-age group. Also find an activity that you can use as an assessment tool of how well the students comprehend these concepts.

3. In third grade, students are expected to know that plants and animals share and compete for limited resources such as oxygen, water, food, and space. Plan activities that will help you integrate this concept into a two-day interdisciplinary experience.

4. You teach math. Some of your students are having difficulty graphically representing the data they collect. Find activities where students can practice communicating results through words, tables, and graphs.

5. You teach fifth grade. It’s only the first month of school, but already you are noticing that students have broken off into cliques. You need a series of activities that will build tolerance for a diversity of viewpoints, preferably with a group learning experience.
Objectives: Students will be able to:
1. Describe the life cycle of sea turtles;
2. Identify specific mortality factors related to sea turtles;
3. Make inferences about the effects of limiting factors on sea turtle populations;
4. Make recommendations for ways to minimize the factors, which contribute to the possible extinction of sea turtles.

Method: Students “become” sea turtles and “limiting factors” in a highly active simulation game.

Processes of Life
SC.F.1.3.: The student describes patterns of structure and function in living things.
SC.F.1.3.1.: understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.
SC.F.1.3.7.: knows that behavior is a response to the environment and influences growth, development, maintenance, and reproduction.

How Living Things Interact with Their Environment
SC.G.1.3.: The students understands the competitive, interdependent, cyclic nature of living things in the environment.
SC.G.1.3.2.: knows that biological adaptations include changes in structures, behaviors, or physiology that enhance reproductive success in a particular environment.
SC.G.1.3.4.: knows that the interactions of organisms with each other and with the non-living parts of their environments result in the flow of energy and the cycling of matter throughout the system.
National and State Resource Contact Information

The listing of an organization does not necessarily mean an endorsement of the philosophy presented, but is intended to provide an objective list of educational sites.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Website</th>
<th>Address/Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopt-A-Watershed</td>
<td>adopt-a-watershed.org</td>
<td>P.O. Box 1850, Hayfork, CA 96041 (530) 628-5334 (fax)</td>
</tr>
<tr>
<td>American Forest Foundation</td>
<td>affoundation.org</td>
<td>1111 19th Street NW, Suite 780, Washington, DC 20036 (202) 463-2462 (fax)</td>
</tr>
<tr>
<td>Caribbean Conservation Corporation</td>
<td>cccturtle.org</td>
<td>4424 NW 13th Street, Suite A1, Gainesville, FL 32609 (352) 375-2449 (fax)</td>
</tr>
<tr>
<td>Children and Nature Network</td>
<td>childrenandnature.org</td>
<td>7 Avenida Vista Grande B-7, #502, Santa Fe, NM 87508</td>
</tr>
</tbody>
</table>
| Comprehensive Everglades Restoration Plan         | evergladesplan.org       | For educational materials:  
- South Florida Water Management District  
P.O. Box 24680, West Palm Beach, FL 33416 (877) 452-3371 (561) 682-6010 (fax) |
| Cooperative State Research, Education, and Extension Service | csrees.usda.gov         | United States Department of Agriculture  
1400 Independence Avenue SW, Stop 2201, Washington, DC 20250-2201 (202) 720-7441          |
| State Office                                      | extension.ifas.ufl.edu   | P.O. Box 11010, Gainesville, FL 32611 (352) 392-1761                                      |
| For detailed information on a specific topic, visit the following sites:  
Forestry Department                                | sfrc.ufl.edu/Extension/ExtInfo.html |
Soil and Water Science Department                  | soils.ifas.ufl.edu/extension |
Fisheries and Aquatic Sciences Department           | fishweb.ifas.ufl.edu/ExtensFac.htm |
Wildlife Department                                 | //www.wec.ufl.edu/extension |
<table>
<thead>
<tr>
<th><strong>Energy and Environmental Alliance Center</strong></th>
<th>eea.freac.fsu.edu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida State University</td>
<td>(850) 644-0707</td>
</tr>
<tr>
<td>C-2200 University Center</td>
<td>(850) 644-7360 (fax)</td>
</tr>
<tr>
<td>Tallahassee, FL 32306</td>
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<thead>
<tr>
<th><strong>Environmental Education Resource Council</strong></th>
<th>unf.edu/dept/eerc/index.htm</th>
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<tbody>
<tr>
<td>Department of Natural Sciences</td>
<td>(904) 620-2636</td>
</tr>
<tr>
<td>University of North Florida</td>
<td></td>
</tr>
<tr>
<td>Jacksonville, FL 32224</td>
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<table>
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<tr>
<th><strong>U.S. Environmental Protection Agency (EPA)</strong></th>
<th>epa.gov/epahome/educational.htm</th>
</tr>
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<tbody>
<tr>
<td>1200 Pennsylvania Avenue NW</td>
<td>(202) 564-0443</td>
</tr>
<tr>
<td>Mail Code 3213A</td>
<td></td>
</tr>
<tr>
<td>Washington, DC 20460</td>
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<thead>
<tr>
<th><strong>Regional Contact</strong></th>
<th>epa.gov/region04</th>
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<tbody>
<tr>
<td>Education Coordinator</td>
<td></td>
</tr>
<tr>
<td>Atlanta Federal Center</td>
<td>(800) 241-1754</td>
</tr>
<tr>
<td>61 Forsyth Street SW</td>
<td></td>
</tr>
<tr>
<td>Atlanta, GA 30303</td>
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<tr>
<th><strong>Feller’s House Field Station</strong></th>
<th>cas.uc.edu/biology/facilities_feller.php</th>
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<tr>
<td>c/o Department of Biology</td>
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</tr>
<tr>
<td>University of Central Florida</td>
<td>(407) 823-2148</td>
</tr>
<tr>
<td>Orlando, FL 32816</td>
<td>(407) 823-5769 (fax)</td>
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<thead>
<tr>
<th><strong>Florida Ag in the Classroom, Inc.</strong></th>
<th>flagintheclassroom.com/about.cfm</th>
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<tbody>
<tr>
<td>P.O. Box 110540</td>
<td>(352) 846-1391</td>
</tr>
<tr>
<td>Gainesville, FL 32611</td>
<td>(352) 846-1390 (fax)</td>
</tr>
<tr>
<td>Email: <a href="mailto:faitc@mail.ifas.ufl.edu">faitc@mail.ifas.ufl.edu</a></td>
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<tr>
<th><strong>The Florida Bat Center</strong></th>
<th>floridabats.org</th>
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<tbody>
<tr>
<td>P.O. Box 496422</td>
<td>(941) 627-4180</td>
</tr>
<tr>
<td>Port Charlotte, FL 33949</td>
<td>Email: <a href="mailto:floridabats@aol.com">floridabats@aol.com</a></td>
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<tr>
<th><strong>Florida Department of Education</strong></th>
<th>irm.edu/doe/curriculum/environ/index.htm</th>
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<tbody>
<tr>
<td>Access to programs, publications, and the free Florida Interdisciplinary Learning Resources in Environmental Education online database.</td>
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<tr>
<th><strong>Fl. Department of Environmental Protection</strong></th>
<th>dep.state.fl.us/secretary/ed/default.htm</th>
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<tbody>
<tr>
<td>FDEP Office of Environmental Education</td>
<td>(850) 245-2130</td>
</tr>
<tr>
<td>3900 Commonwealth Blvd., MS-30</td>
<td>(850) 245-2139 (fax)</td>
</tr>
<tr>
<td>Tallahassee, FL 32399</td>
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<tr>
<th><strong>Florida Fish and Wildlife Conservation Commission</strong></th>
<th>myfwc.com/</th>
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<tbody>
<tr>
<td>620 South Meridian Street</td>
<td>(850) 488-4676</td>
</tr>
<tr>
<td>Tallahassee, FL 32399</td>
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<tr>
<td><strong>Florida Institute of Phosphate Research</strong></td>
<td><a href="http://fipr.state.fl.us">fipr.state.fl.us</a></td>
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<tr>
<td>1855 West Main Street, Bartow, FL 33830</td>
<td>(863) 534-7160</td>
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<td>(863) 534-7165 (fax)</td>
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<tr>
<th><strong>Florida National Forests</strong></th>
<th><a href="http://southernregion.fs.fed.us/florida/">southernregion.fs.fed.us/florida/</a></th>
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<tbody>
<tr>
<td>Heather Callahan</td>
<td></td>
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<tr>
<td>325 John Knox Road, Suite F-100</td>
<td>(850) 523-8590</td>
</tr>
<tr>
<td>Tallahassee, FL 32303</td>
<td>Email: <a href="mailto:heathercallahan@fs.fed.us">heathercallahan@fs.fed.us</a></td>
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<tr>
<th><strong>Florida Solar Energy Center</strong></th>
<th><a href="http://fsec.ucf.edu">fsec.ucf.edu</a></th>
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<tbody>
<tr>
<td>1679 Clearlake Road</td>
<td>(321) 638-100</td>
</tr>
<tr>
<td>Cocoa, FL 32922-5703</td>
<td>(321) 638-1010 (fax)</td>
</tr>
<tr>
<td>Email: <a href="mailto:info@fsec.ucf.edu">info@fsec.ucf.edu</a></td>
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<tr>
<th><strong>Florida State Marine Laboratory</strong></th>
<th><a href="http://marinelab.fsu.edu/sas/index.html">marinelab.fsu.edu/sas/index.html</a></th>
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<tbody>
<tr>
<td>3618 Highway 98, St. Teresa, FL 32358</td>
<td>(850) 697-4095</td>
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<tr>
<td></td>
<td>(850) 697-3822 (fax)</td>
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<tr>
<th><strong>Get Outdoors Florida! Coalition</strong></th>
<th><a href="http://getoutdoorsflorida.com">getoutdoorsflorida.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob Wattendorf, Chair</td>
<td>(850) 488-0520 Ext. 17245</td>
</tr>
<tr>
<td>620 South Meridian Street</td>
<td></td>
</tr>
<tr>
<td>Tallahassee, FL 32399-1600</td>
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</table>

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<thead>
<tr>
<th><strong>Florida Yards and Neighborhoods</strong></th>
<th><a href="http://hort.ufl.edu/fyn">hort.ufl.edu/fyn</a></th>
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<tbody>
<tr>
<td>P.O. Box 110670-1545, Fifield Hall</td>
<td>(352) 392-7938</td>
</tr>
<tr>
<td>Gainesville, FL 32611</td>
<td>(352) 392-3870 (fax)</td>
</tr>
<tr>
<td>Email: <a href="mailto:fyn@gnv.ifas.ufl.edu">fyn@gnv.ifas.ufl.edu</a></td>
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<tr>
<th><strong>Kids Planet</strong></th>
<th><a href="http://kidsplanet.org">kidsplanet.org</a></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defenders of Wildlife, National Headquarters</td>
</tr>
<tr>
<td>1101 14th Street NW, #1400, Washington, DC 20005</td>
<td>(202) 682-9400</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:info@defenders.org">info@defenders.org</a></td>
</tr>
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<tr>
<th><strong>National Arbor Day Foundation</strong></th>
<th><a href="http://arborday.org">arborday.org</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Arbor Avenue, Nebraska City, NE 68410</td>
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<thead>
<tr>
<th><strong>National Association of Conservation Districts (NACD)</strong></th>
<th><a href="http://nacdnet.org">nacdnet.org</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>509 Capitol Court NE, Washington, DC 20002</td>
<td>(202) 547-6223</td>
</tr>
<tr>
<td>Email: <a href="mailto:washington@nacdnet.org">washington@nacdnet.org</a></td>
<td>(202) 547-6450 (fax)</td>
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</table>

<table>
<thead>
<tr>
<th><strong>State Contacts</strong></th>
<th><a href="http://www.nacdnet.org/resources/FL.htm">http://www.nacdnet.org/resources/FL.htm</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the website for your local office.</td>
<td></td>
</tr>
<tr>
<td><strong>National Audubon Society</strong></td>
<td>audubon.org</td>
</tr>
<tr>
<td>----------------------------</td>
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</tr>
<tr>
<td>700 Broadway</td>
<td>(212) 979-3000</td>
</tr>
<tr>
<td>New York, NY 10003</td>
<td>(212) 979-3188 (fax)</td>
</tr>
<tr>
<td>Email: <a href="mailto:education@audubon.org">education@audubon.org</a></td>
<td></td>
</tr>
</tbody>
</table>

**State Chapter**
Audubon of Florida
444 Brickell Avenue, Suite 850
Miami, FL 33131
(305) 371-6399

<table>
<thead>
<tr>
<th><strong>National Park Service</strong></th>
<th>nps.gov</th>
</tr>
</thead>
<tbody>
<tr>
<td>1849 C Street NW</td>
<td>(202) 208-6843</td>
</tr>
<tr>
<td>Washington, DC 20240</td>
<td></td>
</tr>
</tbody>
</table>

**Southeast Regional Office**
100 Alabama Street SW, 1924 Bldg.
Atlanta, GA 30303
(404) 562-3100

<table>
<thead>
<tr>
<th><strong>National Science Resources Center (NSRC)</strong></th>
<th>si.edu/nsrc</th>
</tr>
</thead>
<tbody>
<tr>
<td>901 D Street, SW, Suite 704B</td>
<td></td>
</tr>
<tr>
<td>Washington, DC 20024</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>National Science Teachers Association (NSTA)</strong></th>
<th>nsta.org</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840 Wilson Blvd.</td>
<td>(703) 243-7100</td>
</tr>
<tr>
<td>Arlington, VA 22201</td>
<td>(703) 522-5413 (fax)</td>
</tr>
</tbody>
</table>

**State Chapter**
Http://fastscience.org

<table>
<thead>
<tr>
<th><strong>National Oceanic and Atmospheric Administration</strong></th>
<th>education.noaa.gov</th>
</tr>
</thead>
<tbody>
<tr>
<td>14th Street and Constitution Avenue NW</td>
<td>(202) 482-6090</td>
</tr>
<tr>
<td>Room 6217</td>
<td>(202) 482-3154</td>
</tr>
<tr>
<td>Washington, DC 20230</td>
<td>Email: <a href="mailto:noaa-outreach@noaa.gov">noaa-outreach@noaa.gov</a></td>
</tr>
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<thead>
<tr>
<th><strong>National Wildlife Federation</strong></th>
<th>nwf.org/education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400 16th Street NW</td>
<td>(202) 797-6800</td>
</tr>
<tr>
<td>Washington, DC 20036</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Southeastern Field Office</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1330 West Peachtree Street, Suite 475</td>
<td>(404) 876-8733</td>
</tr>
<tr>
<td>Atlanta, GA 30309</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Natural Resources Conservation Service (NRCS)</strong></th>
<th>nrcs.usda.gov/feature/education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation Communications Staff</td>
<td></td>
</tr>
<tr>
<td>P.O. Box 2890</td>
<td>(800) THE-SOIL</td>
</tr>
<tr>
<td>Washington, DC 20013</td>
<td></td>
</tr>
</tbody>
</table>
Your county district office can be found in the government pages of your local telephone directory. Look under U.S. Government, Department of Agriculture, Natural Resources Conservation Service.

No Child Left Inside  
http://www.cbf.org

Partners in Amphibian and Reptile Conservation  
http://www.parcplace.org
An inclusive partnership dedicated to the conservation of the herpetofauna--reptiles and amphibians--and their habitats. Education materials are available.

Project Food, Land, and People  
http://www.foodlandpeople.org/index.html

State Contact
Florida Ag in the Classroom Organization  
http://www.flagintheclassroom.com/about.cfm

Save the Manatee  
http://www.savethemanatee.org

Sea Grant Program  
http://www.nsgo.seagrant.org/index.html

State Contact
University Of Florida  
http://www.flseagrant.org

Soil and Water Conservation Society  
http://www.swcs.org
State Representative
Carl Goodwin
9100 NW 36th Street, Suite 107
Miami, FL 33178
(305) 717-5845
Email: dc_fl@usgs.gov

U.S. Department of Agriculture Forest Service
P.O. Box 96090
Washington, DC 20090
(202) 205-8333
Email: webmaster@fs.fed.us

State Contact
Division of Forestry
3125 Conner Blvd.
Tallahassee, FL 32399
(850) 488-0863 (fax)

U.S. Fish and Wildlife Service
1849 C Street NW
Mail Stop 3012
Washington, DC 20240
(202) 208-4717

Waste in Place
Keep America Beautiful
1010 Washington Blvd.
Stamford, CT 06901
(203) 323-8987

Water Management Districts of Florida
The five water management districts of Florida are overseen by the FL. Department of Environmental Protection. Below are the different offices and how to contact them.

Northwest Florida WMD, Havana
state.fl.us/mfwd
(850) 539-5999

Southwest Florida WMD, Brooksville
Watermatters.org
(800) 423-1476

St. Johns River WMD, Palatka
sjrwmd.com
(386) 329-4500

Suwannee River WMD, Live Oak
srwmd.state.fl.us
(904) 362-1001

South Florida WMD, West Palm Beach
sfwmd.gov
(800) 432-2045
Curriculum Planning Worksheet

Name: _____________________________________________

Grade/subject(s) taught: _________________________________________

The program was designed to provide students with concepts, skills, and attitudes in environmental education. Students learn these things best when the activities are integrated with the ongoing curriculum, rather than taught as isolated activities. This worksheet is designed to help you think about how you will apply these program activities to your existing curriculum.

1. The unit in which I could begin integrating the activities is ____________________________________________

2. List the skills or concepts you would like your class to learn from this unit. For each skill or concept listed, select several appropriate activities.

<table>
<thead>
<tr>
<th>Skills/Concepts</th>
<th>Project Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Curriculum Planning Worksheet Example

Name: Suzy Brown
Grade/subject(s) taught: 5th grade science

The program was designed to provide students with concepts, skills, and attitudes in environmental education. Students learn these things best when the activities are integrated with the ongoing curriculum, rather than taught as isolated activities. This worksheet is designed to help you think about how you will apply these programs activities to your existing curriculum.

1. The unit in which I could begin integrating the activities is **Ecosystems**.

2. List the skills or concepts you would like your class to learn from this unit. For each skill or concept listed, select several appropriate activities.

<table>
<thead>
<tr>
<th>Skills/Concepts</th>
<th>Project Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify an ecosystem</td>
<td>Field Forest and Stream, #48</td>
</tr>
<tr>
<td>Describe parts of an ecosystem</td>
<td>Watch on Wetlands, #71</td>
</tr>
<tr>
<td>Compare a Florida pine flatwoods ecosystem to a Sequoia forest in California</td>
<td>Environmental Exchange Box, #20</td>
</tr>
<tr>
<td>Role of fire in an ecosystem</td>
<td>Living With Fire, #81</td>
</tr>
<tr>
<td>Human effects on ecosystems</td>
<td>Our Changing World, #86</td>
</tr>
</tbody>
</table>
The 5 E’s Learning Cycle in Science

The learning cycle is an established planning method in science education and consistent with contemporary theories about how individuals learn. It is easy to learn and is useful in creating opportunities to learn science. You can think of the learning cycle model as having five parts, though these parts are not discrete or linear.

**Engage:** In most instances you will want to begin with Engage. In this stage you want to create interest and generate curiosity in the topic of study; raise questions and elicit responses from students that will give you an idea of what they already know. This is also a good opportunity for you to identify misconceptions in students’ understanding. During this stage students should be asking questions (Why did this happen? How can I find out?) Many project activities begin with questions, demonstrations, or discussions that reveal discrepant events or curious facts.

**Explore:** During the Explore stage students should be given opportunities to work together without direct instruction from the teacher. You should act as a facilitator helping students to frame questions by asking questions and observing. Using Piaget’s theory, this is the time for disequilibrium. Students should be puzzled. This is the opportunity for students to test predictions and hypotheses and/or form new ones, try alternatives and discuss them with peers, record observations and ideas, and suspend judgment.

**Explain:** During Explain you should encourage students to explain concepts in their own words, ask for evidence and clarification of their explanation, listen critically to one another’s explanation and those of the teacher. Students should use observations and recordings in their explanations. At this stage, you should provide definitions and explanations using students’ previous experiences as a basis for this discussion.

**Extend:** During Extend students should apply concepts and skills in new (but similar) situations and use formal labels and definitions. Remind students of alternative explanations and to consider existing data and evidence as they explore new situations. Explore strategies apply here as well because students should be using the previous information to ask questions, propose solutions, make decisions, experiment, and record observations.
Evaluate: Evaluation should take place throughout the learning experience. You should observe students’ knowledge and/or skills, application of new concepts and a change in thinking. Students should assess their own learning. Ask open-ended questions and look for answers that use observation, evidence, and previously accepted explanations. Ask questions that would encourage future investigations.

References

Http://www.coe.ilstu.edu/scienceed/lorsbach/257lrcy.htm
## Visual Aids Compared

<table>
<thead>
<tr>
<th>Item</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Tips for Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flip charts</strong></td>
<td>Can store and use repeatedly</td>
<td>Bulky and awkward to handle</td>
<td>Make charts simple to read and understand</td>
</tr>
<tr>
<td></td>
<td>Can use for display after presentation</td>
<td>Not legible for very large groups</td>
<td>Have them in correct order and set up ahead of time</td>
</tr>
<tr>
<td></td>
<td>Can be prepared ahead</td>
<td>Time-consuming to produce</td>
<td>Keep the number of charts to a minimum</td>
</tr>
<tr>
<td></td>
<td>Can use color</td>
<td>Paper can rattle, crease, rip, or smudge</td>
<td>Write information reminders or key points lightly in pencil on the chart. During the session, you will be able to read these, but they won’t be visible to participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not permanent</td>
<td>Cut pieces of masking tape beforehand for taping charts to walls</td>
</tr>
<tr>
<td><strong>Handouts</strong></td>
<td>Good for reinforcement and review</td>
<td>Must prepare in advance</td>
<td>Design handouts clearly to promote understanding</td>
</tr>
<tr>
<td></td>
<td>Good for presenting ideas for discussion</td>
<td>Distribution can be distracting</td>
<td>Number the handouts beforehand, in case you want to refer back to a particular handout</td>
</tr>
<tr>
<td></td>
<td>Can eliminate the necessity to take notes</td>
<td></td>
<td>Proof for mistakes</td>
</tr>
<tr>
<td></td>
<td>Can be copied and used again</td>
<td></td>
<td>Have source printed on each handout and do not violate copyright laws</td>
</tr>
<tr>
<td><strong>Videos</strong></td>
<td>Good for attention, if doing a dramatic presentation</td>
<td>Don’t work well with large groups unless you can project to a large screen</td>
<td>Set up beforehand and check machine operation</td>
</tr>
<tr>
<td></td>
<td>Room need not be darkened, permits note-taking</td>
<td></td>
<td>Brief participants — give them something to watch for</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Preview thoroughly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Used better in a darker room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Keep short — can select just certain segments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cue up ahead of time</td>
</tr>
<tr>
<td><strong>Overhead projector</strong></td>
<td>Can use under normal lighting</td>
<td>Requires practice</td>
<td>Set up equipment beforehand and check machine operation</td>
</tr>
<tr>
<td></td>
<td>Can maintain eye contact</td>
<td>Facilitator may have difficulty seeing the projected image</td>
<td>Practice using the projector: Don’t stand in front of the image, don’t look behind you at the screen, and don’t move the transparency Material can also be used for handouts</td>
</tr>
<tr>
<td></td>
<td>Materials are easily prepared</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dry erase board</strong></td>
<td>Familiar and convenient</td>
<td>Lettering may be hard to read</td>
<td>Plan use of space in advance, especially if you have drawings or charts</td>
</tr>
<tr>
<td></td>
<td>Allows spontaneity</td>
<td>Can lose eye contact with participants when they are writing</td>
<td>Write heavy and large</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not good for large groups</td>
<td>Use colors, if possible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Try writing some things on the board ahead of time and covering until use</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Keep the group talking while using — ask follow-up questions</td>
</tr>
<tr>
<td><strong>Computer/LCD projector</strong></td>
<td>Allows easy transfer of electronic documents</td>
<td>Technological expertise required</td>
<td>Set and practice the presentation ahead of time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expensive</td>
<td>Used better in a darker room</td>
</tr>
</tbody>
</table>
Workshop Checklist

Before the Workshop—Planning

- REQUEST or initiate the workshop
- Request permission from your school system and/or organization for approval
- Pick DATE and TIME
- Find co-facilitators
- Identify audience
- Select a LOCATION
- RESERVE site for the date, time, number of hours (include setup and take-down time), and people expected
- Submit workshop plan to district or college for credit approval, if necessary
- ANNOUNCE workshop – flyers, posters, media release, Web site, etc.
- Submit workshop PROPOSAL and ORDER MATERIALS from program coordinator – at least 4-6 weeks prior to workshop
- Develop workshop design, take into consideration
  - Audience needs and workshop objectives
  - Constraints (e.g., space or time) and strategies for overcoming constraints
  - Requirements for credit (district; college or university), if offered
  - Materials and equipment needed for activities
  - Workshop protocols
- Make an AGENDA – invisible and visible
- PREPARE and gather materials (i.e., projector, paper, pens, and art materials)
- Arrange for refreshments and snacks, if planned
- Send confirmations and maps to registrants, if needed
- VISIT SITE location before workshop
- LOCATE restrooms, light switches, plugs, and easiest access to the outdoors
- SELECT appropriate areas to conduct activities
- SHOW UP EARLY to set-up, if possible afternoon or evening before
- CHECK that EQUIPMENT is working

Day of and During the Workshop

- Be flexible
- Position Sign-In Sheet close to the entrance for participants to sign
- Hand out pre-assessment tests (not required by PLT)
- Introductions — orient participants to the restrooms, etc.
- Ice breaker
- Review OBJECTIVES of workshop
- Explain how they will receive in-service points, if offered
• Brief overview of AGENDA, including breaks and lunch
• Project HISTORY
• ACTIVITIES and summarize them
• WALK thru the guides
• Have each participant fill out a POST-ASSESSMENT TEST (if used a pre-test) and PARTICIPANT SURVEY/EVALUATION
• Workshop wrap-up

After the Workshop
• Take time to REFLECT
• Complete the FACILITATOR SUMMARY REPORTING FORM/EVALUATION and other paperwork
• RETURN all paperwork and extra materials to program coordinator
• Follow up with the organization giving credit
• (Optional) Send thank you letters with a list of workshop participants’ contact information
Improving Inservice Teacher Workshops in Florida

The process of education reform has brought a number of changes to Florida's public schools. The movement strives to increase teacher accountability by standardizing the curriculum content (with Sunshine State Standards and benchmarks), assessing student achievement (with Florida Comprehensive Achievement Tests), providing funding to schools where student test scores increase, and reorganizing schools that repeatedly score poorly. EDIS Fact sheet FOR 87 provides additional information.

In 2000 the Florida Legislature approved legislation that changes the nature of the teacher professional development system in Florida. School districts will be evaluated every year to make sure that teacher professional development programs are aligned with increasing student achievement and other school improvement documents. Teacher workshops shall primarily focus on subject content as related to Sunshine State Standards, teaching methods, technology, assessment and data analysis, classroom management, school safety, and family involvement. The current focus of professional development in Florida is primarily literacy (reading and writing) and ESOL (English for Speakers of Other Languages). Other academic subject areas (e.g. math, science, social studies) are generally a lower priority for teacher inservice. Teachers will be required to document how their inservice workshops help increase student performance.

In some school districts, professional development providers will have to be certified to conduct workshops for their teachers. To learn how to best meet the needs of local teachers, contact the staff development coordinator in your school district. The North East Florida Education Consortium (NEFEC) plans to offer workshops to train nonformal educators how to work within their 14 school districts.

To increase their usefulness to educators, workshop facilitators should be familiar with terms and concepts now used to describe Florida's professional development. These terms should be incorporated into inservice programs. This fact sheet defines the terms that are most helpful and provides suggestions for planning, advertising, delivering, and evaluating workshops to meet the needs of our teachers. Project Learning Tree (PLT) workshops are used as an example of how nonformal education facilitators could adapt their workshops to better address the new professional development system.

Individual Professional Development Plan (IPDP)

Every educator creates this working document by listing the subject areas, based upon identified student needs, that he/she wants to improve by attending professional development workshops. The challenge is for the educator to find appropriate workshops that meet his/her different needs. A workshop with an interdisciplinary focus covering more than one subject area would be beneficial because it helps meet many teachers' needs simultaneously. PLT workshops often link subject content areas
together with all activities at a workshop. Facilitators can ask educators how activities modeled at workshops fit into their IPDP.

**School Improvement Plan (SIP)**

Each school administration creates a working document listing areas it wants to concentrate on school-wide in order to increase student learning. When presenting the benefits of your workshop to administrators, ask them what their SIP is focused on to help you obtain permission to do a workshop at their school. For example, if the SIP may call for increasing reading scores on the FCAT, PLT Facilitators can discuss conducting a PLT and Reading workshop that focuses on inter-disciplinary activities with reading elements. In addition, teachers can meet their IPDP goals by attending PLT workshops that also align with the SIP.

**Sustained Professional Development**

Professional development programs need to allow for educators to build mastery level skills and receive sufficiently sustained training to develop these skills. The basic six-hour PLT workshop needs to be revised to meet educator's new needs. Consider the length and the depth of coverage of the materials when developing a workshop. To sustain skill-building, a one-day workshop can be turned into a multi-day workshop or one that meets several times throughout a semester. The additional time allows educators to practice and develop skills and increase their knowledge in particular subject areas. A PLT facilitator can model the use of activities to reinforce concepts and allow participants time to think of and discuss ways to incorporate activities into their existing curriculum. Part of the workshop could also include having participants lead activities. Providing time to go through activities and conduct them in front of their peers allows educators to receive feedback on ways they can improve their delivery and enhance the activity for their own students. Dividing the workshop into several meetings over a semester allows educators to try the activities in their classrooms and come back to discuss successes and challenges. Educators can work together to find the best ways to utilize PLT in their classrooms.

**Use of Technology**

Incorporating educational technology into a PLT workshop is simple, providing one has the technology resources at hand. There are many ways to incorporate technology into a PLT workshop. One is to use computer technology. A PowerPoint® presentation can be used to introduce the PLT program. Later in the workshop, participants can use digital cameras to record images of natural areas and display them in a presentation for the group. This technique shows educators how technology can be used to present information and gives them time to work with technology in the same way they would
use it with their students. A set of forester’s tools is also technology. Inviting a forester to the workshop to demonstrate how he/she uses the various tools in the field can be incorporated into a classroom presentation. Simply using a VCR or DVD player to show an informational video is also technology. In addition, the use of graphing calculators, digital probes, graphing software, and internet resources are other examples. When possible, facilitators should provide opportunities for teachers to learn, use, and grasp educational technology that they can use in their own classrooms.

**Professional Development Target Areas**

Professional development programs should focus on one or more target areas identified by the state. These eight major areas are Sunshine State Standards (SSS), subject content, teaching methods, technology, classroom management, school safety, family involvement, and assessment and data analysis. Finding out about the IPDPs and SIPs of the participants prior to the workshop could help the facilitator understand what target areas schools and teachers need to address. Table 1 (on page 62) summarizes how PLT workshops can address the eight identified target areas for professional development.

**Learning Communities**

Learning communities are small groups of teachers that support their own professional development through meetings, discussion, and study that is relevant to their teaching practices over the course of a semester or year. PLT Schools may find it easy to develop a learning community around teachers using the outdoors as a study site. PLT workshops can support the development of learning communities by providing suggestions of books for book club discussions and classroom tools, providing the names and contact information for other PLT-certified educators in their district, and encouraging educators to use the program to support the instructional models of issue investigation and service learning in the their classroom. A community of educators can explore the community issues that students identify and determine the teaching methods that are best for their own community of learners.

**Transfer of Learning to Students**

An important outcome of any professional development experience is that the knowledge and skills gained in the workshop are used to improve teaching and learning. In the case of PLT workshops, this is often done when teachers participate in activities and discuss how they could use these activities in their own classrooms. To help reinforce their good intentions, send out email reminders and postcards several weeks following the workshop. In addition, a letter to each teacher’s principal (with a copy to the teachers) could introduce the new teaching techniques that should be visible in their classrooms. Beyond encouraging teachers to use PLT, teachers will need to
document that students have learned about the environment or have gained reading or math skills because of their PLT workshop. You could suggest that teachers keep copies of student PLT activity worksheets and note what they would change the next time to increase student achievement.

Coaching and Mentoring

Teachers often need assistance to begin to use new skills and teaching methods. If facilitators could be available to assist teachers in the classroom, teachers will be more likely to take students outdoors and use PLT activities. PLT facilitators could offer to meet with learning communities or sponsor advanced workshops to increase teachers' comfort level with the teaching methods. PLT Schools may be best suited to support teachers with coaching and mentoring because each school has a PLT Coordinator who can provide assistance to teachers.

Web Resources

The World Wide Web provides an enormous number of resources and possibilities for assistance to teachers. PLT Facilitators can hand out a reference sheet to help make teachers aware of Web sites that are relevant to what teachers and students need to understand forest resources. The Florida PLT Web site (http://sfrc.ufl.edu/plt) will soon be structured to encourage teachers to share ideas about activities and ask questions. Adaptations they have made to activities would be particularly helpful to other teachers. Strategies for using PLT activities to address SSS could also be listed. Teachers can join the PLT listserv of educators and facilitators in order to share resources. Several sites (http://sfrc.ufl.edu/plt/Resourceindex.htm) have Web resources for teachers and students, supporting their use of technology.

Student Change

The ultimate goal of teacher professional development is to increase student learning. PLT facilitators can help teachers report on student change by using the assessment elements of each activity to measure student learning and keeping a portfolio documenting student growth. For some key concepts, a PLT handout with sample quiz questions could be useful for teachers who wish to assess student knowledge with a pre-post test. Facilitators could also remind teachers in the workshop that research on environmental education programs tells us that PLT programs increase student knowledge of ecological principles. Students exposed to PLT showed gains in environmental knowledge and positive attitude shifts, particularly in grades two through eight (http://www.plt.org/about/PLT%20Exec%20Summary.pdf).

Action Research

Appendix
The new professional development system encourages teachers to use action research principles to examine and improve their own practice. Although a PLT workshop cannot teach action research methods, a facilitator could mention the types of research questions that PLT activities could support. Teachers could compare the active involvement and learning of lower-achieving youth during in-class activities and outside activities (outdoors activities are often credited with engaging students who perform poorly in traditional classrooms), or explore the involvement of girls in science-based activities that involve trees and wildlife as opposed to chemistry and physics. Teachers could also explore their own comfort level with becoming a facilitator of student involvement instead of a lecturer of information. For more information about action research, direct teachers to http://reach.ucf.edu/~CENTRAL.

Summary

This fact sheet provides a number of concrete suggestions and key phrases that educators and their administrators are using to describe professional development in Florida. The more nonformal educators can use these terms and comply with these strategies, the more relevant their workshops will be for Florida teachers. And the more Florida teachers participate in meaningful environmental education workshops, the closer we will be to building a citizenry that understands and cares about our natural resources.

Reference

<table>
<thead>
<tr>
<th>Target Area</th>
<th>PLT Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunshine State Standards</td>
<td>Familiarize educators with the PLT Web site to identify the SSS correlated to each activity used in the workshop. The standards and benchmarks govern what is taught. Everything a teacher does must relate to a standard. Engage teachers in an exercise to illustrate how benchmarks can be addressed with each activity. Choose activities that emphasize subject areas identified in schools.</td>
</tr>
<tr>
<td>Subject Content</td>
<td>Content is important in the context of the standards. Highlight several activities that focus on one or more subject content areas. Point out how specific skills such as reading comprehension can be addressed through selected activities. Also, show the natural integration of subject areas found in most activities.</td>
</tr>
<tr>
<td>Teaching Methods</td>
<td>Allow teachers to practice implementing an activity as though they were students. Conduct a follow-up discussion on the teaching strategies used in that activity and how the activity addresses various learning styles. Information on learning styles can be found in the Facilitator Handbook, pages 70.</td>
</tr>
<tr>
<td>Technology</td>
<td>Demonstrate how tools can be used to understand forest resources and the environment. Demonstrate how teachers can use video, PowerPoint®, digital probes, and Web sites to enhance instruction. Invite a natural resource professional to the workshop to demonstrate the use of the technology he/she uses in the field. A forester can bring his/her tools that demonstrate technology used in field work.</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>Allow teachers to discuss successful ways they handle classroom management during interactive and outdoor lessons. Demonstrate the benefits of using small groups, clear instructions, and follow-up questions. Allow teachers to simulate student behavior during sample activities and elicit their suggestions. See Facilitator Handbook pages 16-24.</td>
</tr>
<tr>
<td>School Safety</td>
<td>Using the outdoors for learning could put some students at risk of accidents. Discuss how to minimize risks during workshops and model good field trip management strategies, e.g., stress the importance of familiarity with the field trip site.</td>
</tr>
<tr>
<td>Family Involvement</td>
<td>Use parent volunteers in the PLT workshop or suggest that teachers bring parents to the workshop as part of their teaching team. Encourage the use of parents with PLT activities to help manage small groups and field trips.</td>
</tr>
<tr>
<td>Assessment &amp; Data Analysis</td>
<td>PLT activities have excellent discussion questions that enable teachers to engage students in higher order thinking skills. Encourage the use of the twenty-five FCAT-like prompts created to go with nine PLT activities for different grade clusters. These prompts can be downloaded off of the PLT Web site.</td>
</tr>
<tr>
<td>Project Learning Tree</td>
<td>Project WILD</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>WORKSHOP REQUIREMENTS</strong></td>
<td><strong>WORKSHOP REQUIREMENTS</strong></td>
</tr>
<tr>
<td>• Six-hour minimum for PreK-12; Four-hour Minimum for Secondary</td>
<td>• Six-hour minimum</td>
</tr>
<tr>
<td>• Minimum of 15 participants</td>
<td>• Minimum of 15 participants</td>
</tr>
<tr>
<td>• Minimum of six activities (include three core activities from the list provided)</td>
<td>• Minimum of five activities must be taught (if teaching from both guides – six activities)</td>
</tr>
<tr>
<td>• Have at least two facilitators (when possible 1 resource person and 1 educator)</td>
<td>• Fill out workshop proposal form and notify Project WILD coordinator or assistant four weeks prior to workshop</td>
</tr>
<tr>
<td>• Fill out workshop proposal form and notify state coordinator at least four weeks prior to workshop</td>
<td>• Include Project history and overview</td>
</tr>
<tr>
<td>• Include Project History and overview</td>
<td>• Include a “walk” through the guide</td>
</tr>
<tr>
<td>• Pre/Post test (other assessments) are optional</td>
<td>• Complete sign-in sheet and evaluation</td>
</tr>
<tr>
<td>• Include a variety of activities from each theme in the guide and to show subject content integration</td>
<td>• Include a variety of activities from the three major sections in the guide</td>
</tr>
<tr>
<td>• Return necessary paperwork within two weeks of workshop conclusion - including facilitator survey, participant surveys/evaluations, registration fees and extra books.</td>
<td>• In-service credits are up to the participant to arrange and WILD will work with the participant to meet their needs (fill out paperwork, assign a follow-up assignment, etc).</td>
</tr>
<tr>
<td>• In-service credits are up to the participant to arrange and PLT will work with the participant to meet their needs (fill out paperwork, assign a follow-up assignment, etc).</td>
<td>• Include a variety of activities from each theme in the guide</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>FACILITATOR REQUIREMENTS</th>
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<tbody>
<tr>
<td>• Attend a full training session on PLT as a participant</td>
<td>• Attend a full training session on Project WILD as a participant</td>
<td>• Attend a full training session on Project WET as a participant</td>
</tr>
<tr>
<td>• Facilitate at least one workshop or alternate event per year.</td>
<td>• Facilitate at least one workshop or alternate event per year.</td>
<td>• Co-facilitate one full training session on Project WILD</td>
</tr>
<tr>
<td>• Represent, in a professional manner, the University of Florida, School of Forest Resources and Conservation and the objectives of PLT</td>
<td>• Represent, in a professional manner, the Florida Fish &amp; Wildlife Conservation Commission and the objectives of Project WILD</td>
<td>• Facilitate at least one workshop per year</td>
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<tr>
<td>• Represent, in a professional manner, the Water Management District/Department of Environmental Protection and the objectives of Project WET</td>
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</tr>
</tbody>
</table>
- **Four-hour Minimum for Secondary**
- Include three core activities
- *Have at least two facilitators (1 resource person and 1 educator)*
- Include a variety of activities to show subject content integration
- Facilitate at least one workshop or alternate event every three years

- Minimum six activities
- Fill out proposal and notify coordinator four weeks prior to workshop
- Include project history
- Pre/post-test optional
- Include variety of activities from theme or sections
- Inservice credit up to each participant with help of Project Coordinator

- **Six-Hour minimum**
- Minimum 15 participants
- Return necessary paperwork
- Attend full training session as participant
- Represent agency in professional manner

- Minimum five activities if teaching from only one guide
- Include a “walk” through the guide
- Complete sign-in sheet and evaluation

- Facilitate at least one workshop per year

- Minimum three to six activities
- Include watershed concept. If possible demonstrate the EnviroScape or aquifer model.
- Include lesson planning time
- Complete/review the FCAT prompts as part of at least one activity
- Co-facilitate one full training session on Project WET
Helpful Hints for Making Flyers

General Rules

✓ Who is the audience? What do they need to know? Define the audience and make sure the flyer is geared to that audience.

✓ Keep the flyer simple. Give just the information needed and avoid distractions.

✓ Make sure the flyer is consistent in style and information throughout.

Things to think about when making a flyer:

✓ What kind of heading will you use? How will it “catch the eye” and be recognized?

✓ What is the right amount of information?

✓ Be sure to include WHO to contact, WHAT to bring or expect (including lunch arrangements, dress for the day, etc.), WHEN to come, WHERE the workshop is to be held, and HOW to get there.

✓ Highlight benchmarks from the SSS that will be taught at the workshop.

✓ How do you want your audience to respond?

✓ How will you format your flyer? A symmetrical format is “calm,” whereas an asymmetrical format communicates “action.”

✓ What typefaces will you use? Never use more than two different typefaces per piece — too many typefaces will look disorganized and makes it difficult to read.

✓ Do not mix italics, bold, underline, and colors. It makes it too busy and difficult to read.

✓ What art can you include? Project logos are certainly good, and you can use clipart — non-copyrighted art available at art supply and book stores for cut and paste. Don’t use others’ art without permission. Contact your project’s coordinator for approved project logos.

✓ If sending the flyer to different locations, consider including a “please post” notice if you want the flyer posted.
PreK–8 PLT

Where
Location Name
Insert Address & Phone Number
Include where to check-in
Trail Break Café or Front desk

When
Day of Week
Month Day, Year
X:XX a.m. - X:XX p.m.

What
Project Learning Tree is a premier interdisciplinary natural resource education program correlated to the Sunshine State Standards. PLT provides supplementary education curriculum materials to enhance your programs.

Registration fee: $15
Cash or checks made out to "University of Florida"
Register by calling Facilitator at
XXX-XXX-XXXX
or email atXXXXX

Deadline to Register:
Month Day, Year

WHY ATTEND?

- Receive the PreK-8 Activity Guide with 96 hands-on activities.
- Reading and technology connections are included.
- Become eligible for a $5000 maximum GreenWorks! grant!

352.846.0848 • Web site:
http://sfrc.ufl.edu/pl
Come and get your feet wet

Please join us for a Project WET workshop for elementary school teachers

Project WET is an interdisciplinary water education program featuring classroom-proven, hands-on learning activities that make water topics come alive for students. This workshop will focus on coastal ecosystems.

“But I don’t teach a ‘water’ unit!”

You probably teach more water topics than you think! Water plays a key role in all of the following curriculum areas, and Project WET has pre-K–12 activities to address them all.

- Properties of matter
- Cycles, seasons
- Weather, climate
- Ecology
- Human impact on the environment
- Requirements for life, health
- Wise use of resources
- Landscape patterns and change

All participants receive

- FCAT support materials
- Six hours of instruction
- Project WET Curriculum and Activity Guide — contains over 90 student-tested, teacher-approved activities correlated to the Florida Sunshine State Standards
- Great supplemental materials
- Free T-shirt

“I thought this was strictly a science-oriented workshop and was pleasantly surprised. It was relevant to all levels and subject areas.”

— Math/reading teacher

When —
Friday, Oct.15, 2004,
from 9 a.m. till 3 p.m.

Where —
Marine Science Center
Lighthouse Point Park
Ponce Inlet, Fla.

On the Internet:
www.marinescience
center.com

If you would like to attend this workshop, contact Lori Dennard at (386) 329-4563 or ldennard@sjrwmd.com.

Cost
All workshop costs and materials are paid for by the St. Johns River Water Management District.

Please bring your own lunch.

Sponsored by St. Johns River Water Management District
Project WET Workshop

What?  
• Educator training that’s all about water  
• Hands-on activities  
• Free Project WET Curriculum and Activity Guide  
• Free Southwest Florida Water Management District curricula  
• Giveaways  
• FUN!

Who?  
K-12 Educators  
(registration limited to 25)

When?  
Saturday, April 8, 2006  
9 a.m. – 3 p.m.

Where?  
The Pier Aquarium  
800 Second Avenue Northeast, St. Petersburg

How?  
To register, contact Karen Henschen at  
(727) 822-9520 or khenschen@pieraquarium.org.
Project WILD and Aquatic WILD Workshop

(Date & Time)

(Place)

For K-12 Educators and Leaders of Youth Organizations

Project WILD is a supplementary environmental education program emphasizing wildlife.

Project WILD activities have been correlated to the Sunshine State Standards.

The workshop will offer exciting new teaching ideas for use in science, math, social studies, language arts, physical education, music, art, and more! Each participant will receive a free supplementary guide full of innovative activities. Participating teachers are also eligible for in-service credit.

To Register Contact: ________________________________

For more information on Project WILD, contact:

Florida Fish & Wildlife Conservation Commission
Project WILD
620 South Meridian Street
Tallahassee, FL 32399-1600
877/450-WILD
lori.haynes@MyFWC.com

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Learning Styles

A learning style indicates how a person prefers to learn. Style characteristics reflect genetic coding, personality development, motivation, and environmental adaptation. Style is relatively persistent in the behavior of individual learners. It can change, but does so gradually and developmentally. Learning style has cognitive, affective, and environmental elements. No learning style is better than another — each is simply different.

There are many different models of learning styles, and most models identify four different learning styles. Bernice McCarthy, in her 4MAT system, characterizes the four learning styles as shown on the “Teaching to Learning Styles” handout at the end of this section.

During your workshop, you can help educators use projects and learning styles in the following ways:

- Model using the four different learning styles in your presentation. To be sure that you include all four different styles, when planning your workshop, identify the learning style most prominent for each workshop element. While you need not represent each learning style equally, be sure that you exemplify each one.
- Using the Teaching to Learning Styles handout at the end of this section, help each of the participants identify which learning style seems to best describe him or her. Keep in mind that most learners use a combination of styles.
- Suggest that participants identify a particular student or other person they know that seems to fit each of the learning styles. Make sure that participants understand that the point of this exercise is to help them have a concrete picture of each of the styles, not to stereotype their students.
- Encourage participants to identify which styles are prominent in each activity presented at the workshop. Ask participants to suggest ways to extend each activity in order to use some of the other learning styles.
- During the curriculum planning time, have participants identify a group of lessons that focus on different learning styles to teach together as part of a unit.

References


McCarthy, B. 1981. The 4MAT System: Teaching to Learning Styles with Right/Left Mode Techniques. 2nd ed. Oak Brook, IL: EXCEL.
Teaching to Learning Styles

Learning Style 1: Imaginative Learner
I like to learn through personal experience; have meaning in what I learn; learn about things I value and care about; express my beliefs, feelings, and opinions; and understand how what I learn affects me. I function best when interacting with others. My goal is to make the world a better place. My favorite question is “Why?”

Teach by giving them a reason — having them create and analyze an experience.

Learning Style 2: Analytic Learner
I like to get new and accurate information; deal in facts and right answers; know what the experts think; formulate theories and models; and have things exact and accurate. I function best when adapting to experts. My goal is to add to the world’s knowledge. My favorite question is “What?”

Teach by teaching it to them; integrating the experience and the material; giving them the facts.

Learning Style 3: Common Sense Learner
I like to have clear and understandable ideas; find out how things work; test theories in the real world; and make things useful. I function best using kinesthetic awareness. My goal is to make things happen. My favorite question is “How?”

Teach by letting them try it; giving them prepared materials and have them add “something of themselves” to it.

Learning Style 4: Dynamic Learner
I like to connect things together; do things that matter in life; teach other people what I know; take some risks; and make what is already working, work better. I function best by acting and testing experience. My goal is to challenge complacency. My favorite question is “So what?”

Teach by letting them teach it to themselves and someone else; having them analyze for relevance and originality, then share with each other.

Reference

McCarthy, B. 1981. The 4MAT System: Teaching to Learning Styles with Right/Left Mode Techniques. 2nd ed. Oak Brook, IL: EXCEL.
Multiple Intelligences

The theory of multiple intelligences, developed by Howard Gardner and his associates, holds that every individual possesses several different and independent capacities for solving problems and creating products. Gardner has named these capacities “intelligences” and has scientifically identified eight of them which are grouped into three categories. Everyone possesses all eight intelligences, though some will be stronger or weaker than others.

Educators should try to develop programs and design workshops that engage learners by covering all eight intelligences. This way everyone will get an opportunity to succeed and achieve feelings of success and accomplishment that help promote learning.

The following are the different intelligences with a brief description and example activities.

1. **Linguistic intelligence** is the ability to use words effectively, either orally or in writing. Activities: small group discussions, speeches, reports, journal keeping, and storytelling.

2. **Musical intelligence** is the capacity to perceive, transform and express music. Activities: singing, rap and chants, putting new words to old tunes, and whistling.

3. **Logical-mathematical intelligence** is the capacity to use numbers and reason effectively. Activities: classifying, categorizing, calculations and problem solving, measuring, quantifying, and sequencing.

4. **Spatial intelligence** is the ability to perceive the visual world accurately and transform those perceptions. Activities: visualization, photography, diagrams, and drawing.

5. **Bodily-kinesthetic intelligence** is using one’s body to express ideas and feelings or specifically using one’s hands. Activities: field trips, drama, running games, crafts, physical activity and making products.

6. **Intrapersonal intelligence** is the ability to access one’s own feelings and emotions, strengths and weaknesses. Activities: independent study, reflection, options and choices for projects, and goal-setting.

7. **Interpersonal intelligence** is the ability to perceive moods, motivations, and feelings of other people. Activities: cooperative groups, peer teaching, and community involvement.
8. **Natural intelligence** is the ability to differentiate the patterns and characteristics among natural objects in the environment and make distinctions in the natural world. Activities: observe and classify plants, spending time outdoors, and animals and nature hikes.

As with other learning strategies, the projects have already incorporated many of the key aspects of multiple intelligences theory into their activities.

One of the simplest ways to include multiple intelligences with your students is to ask them to “represent” the data they have collected during an activity using one of the eight intelligences. Each group can be invited to use the intelligence with which they are most comfortable, or you can assign an intelligence to each group. By doing this, you encourage them to really let their personalities shine! We have found that groups will dance, sing, draw pictures, make models, create graphs, or do calisthenics to report their findings from activities.

While all of this information about multiple intelligence theory may seem overwhelming, the main idea we would like for you to get from this is that project activities already incorporate a great deal of this theory. Just by doing the activities, you are modeling some aspects of multiple intelligence theory in workshops, classrooms, and other venues and, with some small modifications, you can model all aspects of it.

References


Cooperative Learning

Cooperative learning is a model of instruction in which students work together in small groups to achieve a common learning goal. Since learners have different strengths, groups that function to take advantage of members’ unique skills may achieve more than an individual could. Project activities can help a teacher implement cooperative learning because many of the lessons are designed to be conducted with cooperative groups. There are many different models of cooperative learning, and teachers should set up and use groups in the way they feel most comfortable. However, teachers who use or are interested in using cooperative learning will appreciate you addressing the following in the workshop:

- **The cooperative learning potential of the project activities.** Whenever possible, model using cooperative learning in a particular lesson by having teachers break into cooperative groups and completing the activity. After presenting each lesson (as cooperative learning or not), have teachers discuss how the lesson could be modified to better facilitate cooperative learning.

- **Grouping issues.** In cooperative learning, the teacher must decide on how the groups will be formed, how large the groups should be, and how long the groups should stay together. For example, the groups may be randomly formed or assigned by the teacher, and groups may stay together for only one class period or for six weeks. Model different ways of grouping in the workshop, then discuss the advantages and disadvantages of various ways of grouping, of group sizes, and of the group duration.

- **Structuring the learning task.** For each activity experienced in the workshop, help teachers identify how the learning task could be structured so that it is truly cooperative, with successful completion of the task requiring each group member’s participation. Typically, students are given roles and tasks to facilitate the process (e.g., timekeeper, note taker, question asker, materials gatherer, facilitator).

Reference


Addressing Controversial Issues

Controversies that we are aware of represent one type of challenge. A much more difficult situation is the surprise of learning that some people perceive a conflict when others don’t. To reduce the possibility of those situations, review your agenda carefully for the topics or issues that some participants might perceive differently. Ask yourself, “could anyone have a different idea about this?” When presenting, model the ways teachers can diffuse controversy by saying things like, “Scientist believe that the geologic evidence suggests Florida used to be under water.” And “One way of looking at this forest is to see potential board feet; what do you see?” Be careful when adding a judgment to any activity. A natural forest is not “bad” because it “wastes” resources. A plantation is not “better” because it is more efficient. There are different advantages and disadvantages to every system. Ask your participants about other ways to view each situation.

If you wish, your workshop can provide ways for educators to examine ways to teach and cope with controversial topics. In your workshops, you can help educators examine dealing with controversial issues. You might, for example:

- Help participants identify potential controversial issues embedded in the activities you present.
- Lead a discussion about the benefits and pitfalls of teaching about controversial issues. Help participants identify ways for handling each of the pitfalls.
- Invite resource specialists to the workshop to help explain their perspectives on the topic. Help participants discuss arguments for and against each perspective.
- Encourage participants to brainstorm a list of possible concerns that parents, administrators, the community, or the participants themselves would have about teaching a particular controversial issue. Then help them brainstorm ways to address each of the concerns.
Leading Successful Outdoor Activities

Taking students outdoors allows them to personally examine and experience the natural world. These experiences are critical for helping students understand the world around them. However, many educators shy away from outdoor activities because these activities can present management problems.

To help educators become more comfortable with leading successful outdoor activities, you can provide ways of addressing this issue in your workshop. Following are some suggestions:

- At the workshop, introduce participants to the outdoors and help them see the importance and advantages of working outside. After each outdoor activity, discuss how the activity and the learning would have been different if it had been conducted indoors.

- Have participants brainstorm a list of the pluses and minuses of leading outdoor activities. Divide participants into small groups and have them think of ways to turn the minuses into pluses.

Tips for Outdoor Activities

- Bring all equipment necessary (you may not be able to return to the building until the end of the activity). Backpacks make great educator’s toolkits for managing supplies. Do not forget important items such as sunscreen, water, and a first aid kit.

- Discuss appropriate behaviors and logistics before heading outside.

- Foster an environmental ethic and be a positive role model.

- Be aware of any safety issues and make students aware.

- Provide clear directions and make sure all students understand.

- All living things, including plants, are to be respected and not injured in any way. Follow the rule: look, learn, leave alone.

References


School or District Curriculum Integration

This article is from the National PLT Facilitator Handbook. All references to PLT activities and the PLT program can be applied to WET and WILD materials.

In one school on the west coast, a new student from the east coast explained how grateful he was to be studying salmon after years of repeatedly studying a particular east coast tribe several years in a row. The response of the students from the west coast was less than enthusiastic as they explained that this was the third year in a row their teacher decided to use a salmon theme.

Trusting constructivist theory, repeating activities at successive grade level ensures deeper understanding but, as noted in the students’ experience above, repetition, especially inadvertent repetition, can fade a student’s interest in learning. Had the students’ teachers intentionally constructed various aspects of their salmon or cultural unit together, they might have been more able to keep students’ attention and deepen their understanding.

Curriculum developers agree that the most important part of the integration process is selecting an “essential question.” The essential question is used as a filter through which every lesson passes. It leads students towards success in creating a final project that shows evidence of their understanding by defining what needs to be known. Essential questions are based on timeless concepts so that teachers and students naturally cross disciplines in discovering possible answers. They are open-ended questions that have more that one way of being answered. A healthy process for crafting essential questions gives teachers the chance to use their best teaching expertise and understanding of child development. The question facilitators often pose to teachers at workshops is, “How can our schoolyard be used as a study site so students gain knowledge and skill that will allow them to demonstrate their understanding of the environment?”

Challenging teachers to use the schoolyard to develop essential questions (or informal educators to use themes) provides the group with a common task as they define a continuous curriculum for their school or environmental center.

(With regard to nonformal educators, their professional training has often presented the idea of the “essential question” in terms of “thematic interpretation.” Interpretive naturalists develop talks based on themes that are designed to connect visitors of all ages to the area of interest. The theme essentially provides a context through which the audience can associate various facts, stories, and observations. They are broad overarching statements which provide visitors with a connection or “sense of place” as they explore a natural area, monument, museum, etc.)

Here is an example of a process used with a cross-grade level group at one school during a 6-hour PLT workshop. An hour was spent in the morning asking teachers to
place as much relevant information as they could into the Inventory Matrix, noting environment-related units and activities. Once completed, teachers shared their ideas, beginning with kindergarten and advancing through eighth grade. The advantages of this kind of discussion include providing teachers with an opportunity to

- See what teachers at other grade levels are, or will be, teaching the same students with whom they work
- Recognize possible connections between each other’s units
- Prevent duplication of concepts and assignments at different grade levels
- Recognize background information and experiences students are bringing to their grade level

Another hour was set aside in the afternoon to develop essential questions, suggest a performance task, and select activities that would provide students with experiences to help them be successful in completing the performance task.

For example, a teacher using a human body unit selected the concept of growth. Growth easily became the timeless concept for the essential questions, “How does the diet of a tree affect its growth and what kind of ‘healthy tree snacks’ could students provide to help care for new trees planted at the school?”

The essential question explained that the student would need to know about nutrients, sunlight, water, and the process used by the tree to make food as well as how they would need to use that information to care for newly planted trees. Students learn a healthy diet for trees alongside their human nutrition unit. This kind of connection allows students to attach new information about tree health to what they are learning about their own health!

The essential question, by definition, points teachers towards the background knowledge (what the students need to know) and the performance task (what students need to be able to do with that knowledge). By using the essential question as a filter through which activities are selected, the activities selected for students become a reflection of the teacher’s curriculum rather than an “extra” activity. Somewhere between five and seven PLT activities usually provide enough background information and hands-on experience for students to successfully complete the task. Since students are aware of what they need to know, and be able to do from the essential question before completing the activities, the activities are more relevant, the connections between them more obvious, and the reason they are doing them is more clear.

The resulting overlap of activities provides an opportunity for teachers to explain their intentions in more detail and reach agreement about which activities they will use or how they might teach them in more depth so that students’ interest remains high.
When PLT activities are selected around shared essential questions, teachers are encouraged to reflect on the students’ entire learning experience at that school. It becomes clear what students will accomplish at each grade level, what they have to look forward to completing, and how they can communicate their understanding to audiences who appreciate the real work they are doing with PLT.

As a student reflects over their elementary, middle, or high school experience, they begin to recognize that teachers intentionally provided opportunities for them to gain knowledge and apply their skills using the environment in a variety of ways.

The student in the opening story might have explained,

“At this school, we study the environment in every grade. In kindergarten, we make bug collections and do experiments. In first grade, we looked at the wetlands behind our school and made graphs of the types of organisms we found in the fall, winter and spring. Here’s the tree that I planted in second grade. To be healthy, it needs nutrients, sunlight, and water. Last year, our class made models of watersheds for the fall open house. The tree roots in mine held the soil together! I have the new teacher this year so I am not sure what we will do. I hope it will be outdoors near the creek. In sixth grade, we get to write and perform a play about the forest floor. The mural from last year’s play is on the wall. In middle school, we will get to make a video about the forest behind our school and share with students on a field trip from the city just like last year. I can hardly wait!”

Reference

Special Needs Audiences

Although the projects were developed for general populations of school children, the activities have been used with a wide variety of differently-abled people, young and old. As a facilitator, you may want to share information regarding activity use with special audiences. The following notes are provided for your consideration. Some of them are the result of experience, others are based on educational and developmental theories. Since so many activities are “hands-on,” they are very effective with children or adults who may have difficulty absorbing information presented verbally or visually. Concrete, hands-on, tactile experiences are particularly useful with people with multiple learning disabilities. They are also effective for people with vision limitations and hearing problems, since materials can be experienced rather than seen or heard.

Hearing Disabilities
- Consider marking the boundary for outside exploration with flags or rope.
- Maintain good eye contact. Position yourself so that participants can see you for further instructions or warning while leading a session.
- Use a sign language interpreter. Give the interpreter a copy of the activity with key words and concepts highlighted before the session. Remember that environmental concepts are not necessarily common signs; the interpreter will need time to prepare.
- Work with the interpreter to learn common signs to use during the class/program such as “stop,” “good job,” etc.
- Provide directions in writing. (Allows participants to independently check if they are on the right track)
- Use pictures, examples, and hands-on interaction to help illustrate your points. Incorporate visual learning into sessions whenever possible.
- When outside, have a check-in point and time for safety purposes.
- Use a flag or hand signal to interrupt or end an activity.
- Pairing up differently-abled participants into small groups will enhance understanding and appreciation of differently-abled participants by other students.

Learning/Cognitive Disabilities
- Present information in a clear, concise manner. Avoid using too many words to present concepts; simplify.
• Break activities down into steps. By doing so, you will not overwhelm participants; activities will be more manageable.

• Minimize distractions in classroom/setting to decrease over-stimulation.

• Use pictures, examples, and hands-on interactions to help illustrate your point and explain directions.

• For written word assignments, use pictures and a few basic words for participants who have difficulty reading, or read on a lower level.

• Have resources available that match participants; reading level.

• Use repetition. (Many individuals have trouble retaining information or learning it after only hearing it once.)

• Allow participants to stand or move around part of the time. (This provides an outlet for excess energy and reduces frustration)

**Motor Disabilities**

• Choose a largely accessible site (e.g., mostly level, no standing water) when leading activities outside.

• Make accessible the use of adaptive equipment such as reachers for participants to engage in activities involving reaching.

• Seat participants who use wheelchairs so that they can easily see the facilitator and any pictures or examples.

• Adjust the height and angle of the work surface as needed.

• Adapt tools and equipment as needed. Use large crayons for younger participants. Use large glue sticks instead of bottled glue. Secure items to the work surface for individuals who have spasticity or poor muscle control to prevent spills, etc. (e.g.,: Taping a worksheet to a desk; using a clipboard to hold a worksheet; securing a cup to a work surface with putty/clay.)

• Pair up participants to complete activities as needed. Some participants will require a partner only occasionally to complete an activity successfully, others for each activity.
Visual Disabilities
- Include alternate formats of resources for use, including Braille, large print materials, and audio cassettes.

- Give verbal directions very clearly before starting. Give clear orientation directions during all activities. Examples include “the object is one foot in front of you,” “to your right,” or “the ground is very bumpy for the next 10 feet.”

- Use hands-on, concrete examples as much as possible to help illustrate points. Allow participants time to touch and explore these examples. Incorporate items that can be heard and smelled whenever possible.

- Have a variety of magnifiers for participants with low vision.

- Keep the discussion lively and interactive; use vivid descriptions and narrate the actions of an activity as it progresses. Involve participants as much as possible, both indoors and outdoors. Describe any sounds they may hear and items they can smell. Use description words such as “fluffy,” “rough,” and “smooth” to describe items.

- Create a large print version of any worksheets or materials for participants with low vision. Use large (at least 18 point font) thick, block-style black letters on white paper.

- Create a Braille version of any worksheets or materials for participants who are blind.

- Having samples of the items in the lesson for participants to touch (e.g., leaves, soil, animal fur) will help illustrate your discussion and reinforce learning.

- Make tactile diagrams or other instructional displays out of different fabrics (e.g., felt, corduroy, satin) or items (e.g., rice, beans) to further engage participants. Label the diagrams in Braille. Create a line to connect each label to its corresponding piece with thick lines of glue or strips of yarn.

- Provide small tape recorders for participants to record information.

References


Engaging Second Language Learners

Second language learners (SLL) build on what they already know and can understand in their first language. What people know in one language can be learned in another language. It does not mean that concepts need to be relearned, they only need to learn how to express what they know in another language. Often the strategies used to teach second language learners are also helpful to native speakers. The strategies are generally termed “Sheltering.” This refers to the facilitator to do whatever is necessary to make the activity understandable without relying solely on lecture or written text.

Teaching strategies that will help SLL are as follows: defining vocabulary, speaking slowly and clearly, providing wait time, checking for understanding, honoring all languages, and using KATV (kinesthetic, auditory, tactile, and visual).

**Define Vocabulary**

Access the group’s prior knowledge of the words. Breaking down complex words and defining the meaning will help in remembering what the word means. Practice pronunciation and word recognition with flash cards.

**Speak Slowly and Clearly**

Often we are excited and nervous in front of our workshop participants. When we began to talk we speed up our words without realizing it. Take your time to speak slowly and clearly. Avoid run on sentences and concentrate on using simpler words (e.g., idea instead of hypothesis).

**Provide Wait Time**

Sometimes we ask a question of our audience and no one replies. Standing in front of the group it may seem to take forever for some one to answer and you may think they are afraid or do not want to participate. It is okay to give at least 45 seconds for your group to process your question before asking for answers and comments. In addition to processing the question, there will be additional time as the participant translates what you have asked.

**Checking for Understanding**

Throughout an activity it is important that everyone understands what is occurring. There are two techniques you can use: pair and share or thumbs up, thumbs down. Pair and share breaks the group into teams. An SLL student and a more proficient English
student talk about a particular prompt with each other before returning to the larger group. This alleviates some of the pressure of speaking in front of the large group. Thumbs up, thumbs down allows group members not to speak but to use a signal for answering a closed ended question. Another option is to allow participants to explain what happened in their own words.

Honor All Languages

Show respect and acknowledgement of students own participants own language history. Depending on your audience, use the buddy system to pair an English-language proficient educator with on who is new to English. This is a great opportunity for the entire group to learn new words for everyday items!

Use KATV

KATV stands for kinesthetic, auditory, tactile, and visual. Incorporating multiple teaching styles into an activity reaches the diverse learning needs of all participants. Try to use at least two KATV in each of your activities. Integrate movement and rhythm to teach concepts and vocabulary (see Multiple Intelligences on page 80).

While it may take additional time preparing materials for this workshop, it is worth the work to give educators another opportunity to incorporate project activities into their classrooms and programs.

References


Tips for Working with Early Learners

Early childhood educators have the distinctive opportunity to introduce young children to fundamental principles about our earth’s natural wonders. Nature education can and should be during the early years when children are inquisitive and beginning to form their own ideas about the world around them.

Project activities are marked for grade-level appropriateness. Often, as facilitator, educators request additional tips and hints on adapting activities for youth ages three to six. There is no one method for adapting an activity for all young children. Each situation and child is different. Children under the age of six think differently than we do. The same activities we enjoy as adults, a child would find boring and uninteresting.

When children experience an activity or environment first-hand, using real objects, processes and appropriate equipment they are receiving an authentic experience. Children visiting a real pond, using nets to collect minnows and crayfish and taking critters back to the classroom aquarium are examples of this learning method.

Another method is inquiry-based learning. This is when educators listen to children and pick up on their interests and questions. They ask guiding questions to steer children to finding solutions. Educators find materials and create opportunities for children to follow their ideas. Example: Children interested in butterflies may search for them, observe where they land, look for clues to what they eat, look in books, and hypothesize about what makes a butterfly different than a moth.

Below are suggestions for activity components to include when working with this age group.

**Hands-on Learning**
Using low tables for easy reach-ability. Use the floor. Organize storage with labeled bins and easier access.

**Learning Stations**
Provide choices through learning stations. Several activities can take place simultaneously. Set up five or six learning stations around an indoor or outdoor area. Provide at least 15 minutes for children to explore the activities at their own pace. Activities: sensory tables, play dough, paint, coloring, puzzles, or read books.

**Sensory Tables**
Large tubs filled with various materials for sensory exploration. Example: sand with buried beach treasures, scoops, and replica animals.
*Songs and Finger Puppets*
Sing songs with simple or familiar melodies and lots of motion.

*Story Time*
Choose short storybooks with clear, large illustrations and appropriate story lines. Example: picture books, big books, flannel board stories.

*Dramatic Play*
Narrate short plays for children to act out. Provide costumes and props for children to act out their own stories. Example themes: how a seed grows or box turtles searching for strawberries.

*Large Motor Games*
Make games instant and simple with few directions and rules. Everyone should be able to participate. Example: join hands and make a snake, play “duck, duck, goose”, or fly like geese.

*Art*
Create projects that offer lots of choice with no particular end product and few, if any directions. Example: paint with feathers, finger paint with clay or make figures with play dough.

*Outdoor Explorations and Trail Activities*
Alternate between structured and unstructured activities. Use focusing techniques or games. Example: egg carton collecting boxes, hunt for worms, or toilet paper binoculars.

It is important to support youth’s learning. Remembering that young children usually do not have large vocabularies, we must use appropriate topics that are simple and easy for children to experience immediately and first hand. If you can see, touch, hear, taste, or smell it, it’s a concrete topic. Discussing snow, buffalo, or rain forests in Florida would not be good topics. However, alligators, wind, butterflies, flowers, gardening, and dirt would be appropriate.

*Reference*