

Summer Methods in Summer Camps: Teaching Projects WILD, WET, and Learning Tree at an Outdoor Environmental Education Center

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Introduction

Our preservice science teacher education programs at Auburn University emphasize the teaching of environmental science curricula in grades K-12 in our science methods and curriculum courses (Powers 2004). Teachers often feel that they do not have the ability to teach environmental sciences because they lack the training (Smith-Sebasto and Smith 1997). We address this need programmatically. Content preparation in environmental science for undergraduate elementary preservice teachers comes in their second required biology course, where half of it is devoted to environmental science and ecology. Secondary alternative masters preservice teachers in biology education who are seeking initial certification take advanced courses in ecology and other natural science courses. This knowledge is put into practice teaching with young students as part of the methods and curriculum course requirements.

As in many large teacher education programs, we utilize the summer term for practice teaching in our methods courses in informal science settings (Kelly 2000). In our case, we have developed an ongoing relationship with our Forest Ecology Preserve, an outdoor classroom covering 110 acres on the edge of Auburn and run by the School of Forestry and Wildlife Sciences. The mission of the Forest Ecology Preserve is: *To provide programs, experiences, nature trails, and natural habitats for education, study, and relaxation for students and citizens of all ages throughout the area while creating an atmosphere of discovery and stewardship toward our natural world.* Outdoor settings like this one hold tremendous value for providing authentic learning experiences in environmental education (EE) for preservice teachers and their students (Bouillon and Gomez 2001; Hammerman et al. 1985; Negra and Manning 1997). As a form of service learning, our preservice teachers work as camp counselors and prepare lessons from Project WILD/Aquatic WILD,

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Project Learning Tree (PLT), and Project WET (henceforth *Projects* curricula) to teach to small groups of elementary and middle grades summer campers at the Preserve. This teaching opportunity occurs before practice teaching in schools.

Our chapter begins with a discussion of the role of EE in our science teacher education programs. We theoretically support the importance of EE and its interdisciplinary nature from the Science-Technology-Environment-Society (STES) approach to learning science. We review the development and nature of the Project WILD, Project Learning Tree, and Project WET curricula as well as their format for teacher use. We present our collaborations with the Forest Ecology Preserve and the Alabama Cooperative Extension System in preparing preservice teachers for teaching in these summer courses. We follow descriptions of our collaborations with a typical week at summer camp. We then highlight our impact on elementary candidate thinking about utilizing these environmental curricula in outdoor settings from their reflections on the experience before concluding our chapter.

Role of EE in Our Methods Courses

The state of Alabama plays a prominent role in supporting the teaching of environmental curricula, particularly because of its abundant water resources and species diversity (Eick et al. 2008). Through hunting, fishing, and car licenses, the State supports the dissemination of a number of environmental curricula including Project WILD/Aquatic WILD, Project Learning Tree, and Project WET. The Alabama Cooperative Extension System supports an EE specialist who works with preservice and inservice teacher training on these specific curricula. In both our elementary and secondary teacher education programs, we invite Cooperative Extension to work with our preservice teachers within their first methods or curriculum course after we have spent time preparing them for planning and teaching science within a learning cycle model (Karplus 1977). Our approach to the curiosities and wonderments of students is to embed inquiry within this basic framework for teaching.

Early in pedagogical development, environmental science and its related inquiries often become the content that we use in modeling effective practice and in preparing science lessons. Environmental science builds on preservice teachers' content strengths because of greater preparation in biology, ecology, and environmental science. With EE as our context, we emphasize the need to experience concepts and principles first-hand through activities that explore them before more direct forms of instruction. We also emphasize formative assessment as a critical component of student learning, even within one simple lesson. Furthermore, we make connections in lessons with other nonscience disciplines demonstrating the importance of environmental science in society, utilizing the STES framework in addressing national standards and scientific literacy (American Association for the Advancement of Science 1993; Hofstein et al. 1997; Kumar and Chubin 1999). EE as both content and context for teaching is strongly interdisciplinary in nature and meaningfully

integrated into the broader context of society for the improvement of quality of life for our citizenry (Roth and Lee 2002). The interdisciplinary nature of environmental science also supports teaching across scientific disciplines as well as other subjects like social studies, mathematics, language arts, art, and music. This integrated approach is especially important to our elementary preservice teachers who have limited time to teach science along with other mandated subjects.

We also try to create a positive “first teaching” experience for our preservice teachers. The outdoor, informal setting seems to support the “fun” nature of camp and camp learning. As a first teaching experience for preservice teachers, the Forest Ecology Preserve summer camps are a low-risk setting to begin learning about how to manage and teach small groups of students (Luehmann 2007). The *Project* curricula also support preservice teachers in early practice because lessons are highly organized in a lesson plan format that is ready-to-use. Each lesson also includes extensions and authentic assessment options. These nationally known programs focus as much on effective teaching methods as on the content included in activities (Irvin 2007).

The Nature of the *Project* Curricula

During the late 1960s and early 1970s, the environment took center stage due to events like the Cuyahoga River fire in Cleveland, Ohio, and also with the birth of Earth Day. These events and others helped several organizations and agencies come to the realization that educating the public about our natural resources and their management was of great importance. This realization led to the creation of several award winning, multidisciplinary, activity-based EE programs that facilitate and promote awareness, appreciation, knowledge, and stewardship of our natural resources for PreK-grade 12 in an unbiased fashion.

Project Learning Tree

The first such program was Project Learning Tree (PLT) (PLT, 2007), which was created in 1976 to ensure that future generations of Americans understand the importance of our country’s publicly and privately owned forests and that young people learn the skills to be good stewards of the environment. PLT was created through a partnership between the American Forest Institute (now, the American Forest Foundation) and Western Regional EE Council (WREEC), which is now the Council of Environmental Education (CEE). Since its inception, PLT has expanded from the original 13 western partnership states to all 50 states as well as gone international in the 1980s. The PLT curriculum went through limited revisions during the 1990s and a major revision again in 2005 to address education reform and today’s most pressing environmental issues. PLT is reprinted yearly

with updates and revisions to meet current demands. In addition, PLT has developed several modules for the secondary level on topics such as forest ecology, solid waste, and risk and has also published an Energy and Society kit for PreK-8 grade. The mission and goals of PLT are to increase students' understanding of our environment by encouraging critical and creative thinking, developing the skills with which to make informed decisions regarding environmental issues, and to be good stewards of our environment by using the forest as a "window" to the world.

Project WILD

The second program was Project WILD and its companion, Aquatic WILD (Project WILD, 2006). The idea for the development of Project WILD was conceived in 1979 by a group of representatives of state-level departments of education and natural resource-related agencies from 13 western states. These representatives identified a need for the development of a wildlife-based conservation and environmental program. Once again, the WREEC was instrumental in developing this program, which premiered after several years of development and testing in 1983 with an initial introduction in 20 western states. Since its inception, Project WILD is now available in all 50 states as well as internationally. During its existence, Project WILD and Aquatic WILD have been revised, with the latest major revisions being made in 2000, which included several new activities and a new conceptual learning framework that aligns to national education standards. The mission and goals of Project WILD focus on promoting responsible actions towards wildlife and its related natural resources through wildlife-based conservation and EE. This is accomplished by helping learners of all ages develop the skills, knowledge, and commitment to make informed decisions while displaying responsible and constructive behavior towards wildlife and the environment.

Project WET

The last conservation and EE program was Project WET (Project WET, 1998). This program was established by the North Dakota State Water Commission in the late 1980s as a means to educate the public about water resources and their management. From 1989 to 2005, the Project WET program received funding from the U.S. Department of the Interior, Bureau of Reclamation, and was moved to Montana State University where additional development and research resulted in the publication of the Project WET Curriculum and Activity Guide in 1995. Since then, the Project WET network has made the program available in all 50 states and

has also been expanded internationally. In 2005, Project WET left Montana State to establish an independent Foundation called the Project WET International Foundation. Through Project WET, over 40 diverse water education guides and books for children and educators have been published since 1995. The mission and goals of Project WET are to educate people of all ages and communities of the world about water by facilitating and promoting the awareness, appreciation, knowledge, and stewardship of water resources through the development and dissemination of classroom-ready educational materials.

Instructional Design

During the development of these programs, an extensive multilayered process was employed that included research, surveys, writing workshops, and reviews by educators and resource professionals. In addition, revisions to the various materials have been made based on pilot and field-testing in classroom settings as well as by recommendations by external program evaluators. To assure that the activities being created meet specific objectives, each program has developed a conceptual framework that serves as a guide to help facilitate students' active participation in the learning process.

The instructional materials developed for all three programs are designed specifically to support state and national science standards for grades K-12. In fact, in Alabama and many other states, these programs and their activities are also correlated with the state's science, social studies, language arts, and mathematics learning objectives. During the development of these activities, various teaching methods and strategies were employed to guide the learners through the process of awareness, understanding, challenge, motivation, and action using active involvement and hands-on experiences. The activities also contain background information for the educator, which includes current statistical and factual information so that they remain relevant to the learners. Educators are also free to choose from a number of activities to enhance the teaching of a concept or skill as well as integrate them into an existing course of study.

Educators will find that all three programs are laid out in an easy-to-use format, giving educators valuable information that will help them teach the lesson with minimal preparation time. To help educators, each lesson contains an educators' box with information such as intended grade levels, subject areas, concepts, process skills, duration, materials list, and vocabulary. In addition, each activity follows a user-friendly format that includes objectives, background information, preparation instructions, procedural instructions, learner's pages, evaluation ideas, extensions, and in PLT's case, literature connections. All three EE programs are of great value to educators who want to prepare their students to learn *how to think, not what to think* in regard to environmental issues that are facing us today and in the future.

Preparing for Camp

In an effort to provide summer preservice teachers with experiences teaching elementary and middle grades students, a partnership was developed with the local Forest Ecology Preserve to help teach environmental science lessons in their week-long, outdoor camps. The Forest Ecology Preserve summer day-camp program is located approximately five miles from the university and is a community outreach program of the School of Forestry and Wildlife Sciences. The Preserve's education director was eager to coordinate a partnership between the university and their summer camp program for children in the community because our preservice teachers were needed to act as both counselors and teachers. Approximately 24–30 children per week attend the summer day-camps. Their parents pay a small fee to defray the costs of snacks and materials. Elementary preservice teachers (in rotation with another informal science site) would be present during 2 weeks of the camp (for children in grades 1–2 and 3–4), while secondary alternative masters preservice teachers would be present during 1 week of the camp (for children in grades 5–6).

Prior to the field experience at the Forest Ecology Preserve, the preservice teachers were introduced to the learning cycle instructional model and participated in the modeling of age-appropriate environmental curricula utilizing the learning cycle. These lessons included teaching outdoors, logistical considerations for smooth materials distribution, as well as provided opportunities for student inquiry. Discussion on effective questioning skills included strategies for eliciting student questions, encouraging higher-order thinking, and using wait time. These discussions presented the role of teacher as facilitator rather than lecturer. The preservice teachers were able to discuss presentation strategies with the professor and with the entire class. These opportunities for group reflection served as a valuable learning method. The potential to extend the activities based on students' questions and ideas helped the preservice teachers make connections between the courses' discussions and readings on inquiry to field work with students. These modeled lessons also allowed the preservice teachers to experience lessons from the students' point of view, which opened up opportunities for reflection and discussions that helped them as they planned their lessons for implementation with actual children.

Afterwards, preservice teachers completed a day-long training on Project WILD, Project Learning Tree, and Project WET curricula with the Environmental Education Specialist from the Alabama Cooperative Extension System. The training was held at the University's arboretum and outdoor classroom located on campus. The Specialist reviewed the layout of the curriculum guides and how to use the teacher-friendly format. Most of the time was used for preservice teachers to practice selected lessons from each curriculum guide (see Table 1) and later discuss how they would integrate it into their science teaching and assessment practice.

On the following day, class time was provided to assist the preservice teachers in their planning and preparation of select lessons suggested by the Preserve's education director. Many potential lessons were targeted by the director as meeting the

Table 1 Sample activities practiced in preservice teacher training workshop from the *Project curricula*

Project curriculum	Activity title	Description
Project WILD	Grasshopper gravity	The students carefully examine a grasshopper or cricket and then record their observations by drawing a sketch and/or writing a description of what they see
	Wildlife is everywhere!	The students go on a walk outdoors as they look for signs of life. The students quickly discover that living things do not have to be large. They also learn that a chewed leaf or a footprint in the mud is an indicator that a living organism is around
	The thicket game	The students play a form of hide-and-seek in which one person is the predator and everyone else is the prey. The predator is placed in a stationary location and hunts only with his or her eyes. The prey is allowed to hide while the predator is blindfolded. The only rule for the prey is that once they hide, they must be able to see the predator at all times. If the predator sees a part of them, they are caught. This activity emphasizes the importance of camouflage
	Learning to look, looking to see	This activity has the students observe their natural surrounding using their senses. While observing in the outdoors, the students record what they see, smell, hear, and feel over a period of time
	Oh deer!	Through physical movement, the students role-play deer and their habitat. Through this activity, the students experience the cyclical increasing and decreasing of animal populations due to a shortage of basic needs (food, water, and shelter) in the environment
Aquatic WILD	Migration headache	The students portray migrating water birds that are traveling between nesting habitats in one area and wintering grounds in another area. The students learn how changing land usage can directly impact the migration of waterfowl as well as other wildlife species

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Table 1 (continued)

Project curriculum	Activity title	Description
	Water canaries	The students investigate the organisms that live in a stream or pond by using simple sampling techniques. Once they collect the organisms, they discover how the quality of the water can be determined based on the availability of the aquatic macroinvertebrates found in the stream or pond
	Aqua words	The students observe a body of water such as a stream or pond and record water-related vocabulary. Once they have created a word bank of approximately 50 words, they work in groups to write about water
Project Learning Tree	Birds and worms	The students learn that camouflage is an important survival strategy. Through this activity, the students discover the importance of protective coloration as they role-play birds in search of colored worms
	The closer you look	To begin this activity, the students are asked to draw a picture of a tree from memory. Once they have completed their drawing, the drawings are put away while the students take a walking field trip to get a closer look at trees. Once they finish looking at trees using their senses, they are asked to draw another picture and then compare their two drawings
	The fallen log	In this activity, the students investigate a fallen log and become familiar with some of the organisms that call the log home as it decays. Through this activity, they will gain a greater understanding of decomposition and its importance
	Name that tree	The students learn to identify trees by looking at several different features: leaves, bark, twigs, flowers, fruit, and seeds
	Tree cookies	The students learn to tell the age of a tree by counting its annual rings and also discover how environmental changes are recorded through the ring growth in a "tree cookie"
Project WET	Poison pump	Through a series of clues just like in a CSI television show, students unravel a mystery that resulted in the death of hundreds of people in London during 1854. The students discover that water can have a negative impact on living things if it becomes contaminated

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Table 1 (continued)

Project curriculum	Activity title	Description
	The incredible journey	The students learn about the water cycle in a simulation as they become a water molecule that moves through the water cycle
	Stream sense	Students use their senses to observe a local stream and record their observations
	Wetland soils in living color	Students create a wetland soils color key as they learn about soil properties and classify soil types
	Macroinvertebrate mayhem	Students take on the role of a variety of aquatic macroinvertebrates as they play a game of tag to simulate the effects of environmental stressors

camp theme and age-level of the students attending camp during the given week. The Preserve also provided many of the materials needed for the lessons. The preservice teachers worked in pairs to coplan lessons from the *Project* curricula that they would coteach to campers later during the camp week. Also, preservice teachers received the scheduled camp program for their assigned week prior to the first session. The first few days of camp would be spent shadowing their assigned group of campers to better learn their students and the camp program. Before going out to the week-long camp, the preservice teachers attended a walking tour and orientation of the Forest Ecology Preserve and outdoor classroom areas.

The Camp Experience

Camp and Teaching Context

Forest Ecology Preserve summer camps consist of 1-week sessions with camp days from 8:00 a.m. to 11:30 a.m. Each of the three sessions is designed for 24–30 children entering either grades 1–2, 3–4, or 5–6. Within each session, campers are divided into four groups that rotate in varying combinations between activities lasting from one-half to one hour, with a mid-morning break for a snack.

The camp curriculum is organized around an ecological theme (e.g., water and life, nocturnal ecology, food webs). Six different themes are cycled over 6 years to avoid repeating themes and activities for children attending camp all six summers of their elementary years. Maintaining a certain amount of flexibility allows taking advantage of opportunities to have unexpected guest presenters or other ecology-related experiences.

Activities are selected, and adapted when necessary, from Project WILD and WET, PLT, and other types of resources or are created and designed specifically to meet the needs and goals of the camp session. The activities are grade-appropriate,

incorporate state standards as guidelines, and offer an interdisciplinary experience involving science, mathematics, art, and language skills, among others. The week includes daily theme hikes and, often, physically active games or movement activities as part of a lesson or as a break between rotations. Theme-related art or craft activities are offered two to three times a week, and special presentations by guests often involve some type of live animal presentation. Special presenters may be asked to include theme-related information in their presentation, as they see fit and possible. Music is in the curriculum usually through songs.

To ensure that the preservice teachers can participate as daily counselors and teachers during each week-long camp, their class schedules have to be taken into account. The amount of time preservice teachers are present can vary from day to day because of other obligatory class commitments. An orientation meeting provides a necessary introduction to the camp. The preservice teachers need to know what is expected of them as camp staff, what they need to expect of the campers, and what they can expect from the regular teachers, guest teachers, and the camp experience in general. The orientation sets an anticipatory and relaxed mood and provides them with information and talking points that will help them be a positive addition to the campers' experience as well as have a positive experience themselves (see Appendix 1: Orientation Points).

The preservice teachers participate in ecology camp as teachers and counselors responsible for their camper groups. As counselors, they are viewed as camp staff and are responsible for camp tasks as their schedules allow. Initially, their role as counselors (and teaching assistants) allows both them and the campers time to familiarize themselves with camp routine and expectations and with each other. The preservice teachers typically start out oriented toward classroom teaching and management of children, and many show varying degrees of unease in a wilderness setting. Having the first two or three days in which to become more comfortable with the campers and with the wilderness of the camp setting promotes a higher level of ease and ultimately greater success in their planned teaching experience at camp.

Accompanying their groups of six to eight campers to the various rotations through the first two or three mornings provides preservice teachers the opportunity to observe a variety of teaching styles and methods and to assist the regular teachers informally in various learning activities before they are expected to be prepared to teach their assigned activity. These lead teachers come from the university community and include scientists, artists, extension agents, and the like. Preservice teachers typically coteach their assigned lesson with a fellow student to at least two different groups (rotations) of campers. Some pairs choose to share presenter roles equally, while others choose to have one main presenter per lesson with the second teacher responsible for materials distribution and working individually with students as they participate in their activities. The latter choice was acceptable because some student groups had members requiring individual attention. Preservice teachers are assured that the regular camp teachers are present at each rotation and are there to support and help them in whatever way is necessary. Preservice teachers will typically coteach two different lessons per week of camp.

Typical Camp Day

On a typical camp day, preservice teachers arrive shortly before campers are received. They sign in, put on name-tags, and possibly assist with last-minute setup tasks if there is time. Otherwise, they head for the parking lot to help receive campers as parents drop them off. They are encouraged not only to watch over the campers during the quarter-hour of waiting before camp begins but also to interact with them and to promote campers' interest in the natural surroundings before everyone gathers at a central meeting area (the "Canopy" amphitheater).

In mid-morning, the groups return from their early rotations to the Canopy for a snack and bathroom break. The preservice teachers take turns through the week helping with the setup and distributing food and drink. During the break, campers may rest, socialize, and investigate the "book tent," where theme-related books, science artifacts, specimens, and magnifiers are available. Inevitably, the campers use some of the break time for independent exploration of the environment around the Canopy. Items they find may be set out for display at the book tent to share with others. The preservice teachers are encouraged to participate with the campers in free-time explorations as well as to encourage curiosity and inquiry by engaging them with book table items.

After snack, another round of rotations takes the preservice teachers and campers again to that day's activity sites. On Wednesday or Thursday, the day of their own teachings, preservice teachers are expected to have prepared their lessons, help set up the requisite materials, and are declared in charge during their 30 or more minutes of teaching (see Fig. 1). During their lessons, one of the teachers observes and evaluates the preservice teachers and is also available to provide support if needed (see Appendix 2: Candidate Evaluation Form). After their teaching rotation is completed, the preservice teachers resume their counselor/assistant roles, enriched by their experience and better able to take advantage of informal teaching opportunities during the remaining camp week.

Elementary Candidate Reflections in Teaching at the Camps

During the training and planning for their lessons at the Forest Ecology Preserve, many of the elementary preservice teachers express hesitation about the upcoming field experience. In class meetings, they describe a lack of comfort in the outdoor setting as a location for learning, most having no experience with learning outside of a traditional classroom. This is not the case with secondary alternative masters preservice teachers who have had many "out in the field" experiences in their undergraduate biology and wildlife course work. In a written journal assignment on their experience, elementary preservice teachers express initial apprehension with working with students in an outdoor field setting. They express doubts in their abilities to teach science lessons in an outdoor setting where they



Fig. 1 Preservice teacher leaders teach their assigned lesson activities to the campers

particularly fear lack of classroom organization and structure. However, most leave the experience of teaching in the outdoors with newfound learning about the value of utilizing the outdoor classroom and a greater self-efficacy in their science teaching abilities:

At first I was apprehensive to go to the Forestry Preserve because I did not think that it would be a good experience because it is not an 'in classroom' experience. I felt that the Forestry Preserve would just be a waste of time and I could not have been more mistaken. I came away from the Forestry Preserve with a feeling that there are teachable events that occur outside of the classroom.

When I found out that we were doing it I was kind of apprehensive about it because I hadn't been exposed to that before. But once we got out there everything seemed to flow and having the director that was there, she really made everything run very smoothly...

The summer camp experience is typically exciting to the K-6 students who attend. This excitement and enthusiasm for the outdoors and for learning about it contributes to preservice teachers' positive attitude and feelings about the camp experience:

...how excited they [students] were all the time. It didn't matter that it was summer and they were learning, but they came everyday and they were all excited. I heard students say, "Oh my gosh this is so cool."

My best memory with the students would have to be getting to see them excited about science.... and being outside.

The outdoor setting was a unique and stimulating location that offered a new experience to the elementary preservice teachers. They soon recognized the opportunities for teaching and learning in the outdoors. Many described the experience as contributing to their plans to conduct lessons with their future students in the outdoors.

It was definitely the most fun experience that I've had. Sometimes it just makes a difference for them to be outside. I'm a big believer in the eight intelligences...Being outside is also visual, there's auditory, you can hear, you can see. So I really realized being outside is a way to get all of those intelligences.

I think it was great and I would definitely do it again. It gave me a whole new perspective on science and how you can take it outside rather than being confined to that classroom.

I think the students loved having lessons outdoors just because I mean you're outside. It's a lot of fun. You're in a different environment. You're not just cooped up inside the classroom all day... some of the things are not going to clearly be available in a normal classroom. But I feel like I could take my students outside now and it's exciting to plan.

Preservice teachers describe the benefits of students learning environmental science and related interdisciplinary studies in the outdoors particularly in experiencing their learning from a constructivist perspective:

If I hadn't had that experience I don't think I would be more likely to teach outside. And I can see such a big difference in the student[s] and how it just helps them. You can talk about it all day in the classroom but I think it helps to experience it. If they have that experience then it just opens up, you know. Then they go do different things. That's an experience they have and then that's their prior knowledge.

Conclusion

Our elementary and secondary preservice teachers learn that EE is an important and easily accessible, experiential means of addressing various science standards as well as standards in other subject disciplines. As preservice teachers with little teaching experience, they find value in EE, in our approach to learning how to teach EE utilizing the outdoors, and in the *Project* curricula that support them (Moseley et al. 2002). Their first teaching experience in the outdoors is one that bolsters their confidence and positive attitude about teaching science to children before they begin more formal teaching in the classroom (Meredith et al. 1997).

Appendix 1: Orientation Points for Student Preservice Teachers

What We Ask of You

1. Wear closed-toe shoes and socks, not sandals; the provided name tags; and your camp tee.
2. Be at camp as early as you can. The more time you spend here, the sooner you'll feel comfortable and know how camp works.
3. Check the Camp Task List on the office door to find out what needs to be done for setup before camp and what needs to be done after camp.
4. We encourage you to actively assist the teachers – look or ask for things that need to be done to help. You'll learn more that way.
5. As a group “counselor,” you are one of the responsible adults on whom campers can rely for guidance, help, information, and encouragement. (Your campers will be in the group you teach.)
6. Be a role model for the campers, especially with regard to curiosity about and appreciation for (exploring) nature and the science we do. Try not to show squeamishness or fear.

Tips on Teaching at Camp

1. This is hands-on, experiential science. The campers are supposed to have an opportunity to observe and explore. This isn't the classroom. This is informal education. The campers will be expected to participate with the group and behave appropriately, but the learning is active and often noisy, and that's good. It means they're enjoying what they're doing. We are at camp, and the most important thing is that the children have fun while they're discovering nature.
2. Watch the teachers. Learn from them. Don't hesitate to ask us questions, like “Why did you do this?” etc. You'll have your own way of teaching, but use this opportunity to learn, to develop your repertoire of teaching skills and techniques. I learn new things about teaching (and about nature and science) every day at camp.

3. You aren't expected to know the answers to all or necessarily even most of the campers' questions. It's okay to say things like, "Gosh, I don't know," or "That's a great question. I wonder about that too."
4. If you see that some children aren't understanding what needs to be done, help explain it to them or, if needed, help them do it as best as you can.

Miscellaneous

1. Location of First Aid supplies.
2. Chigger bites can be discouraged by insect repellent and not sitting on the ground except in designated places or on a tarp.
3. Special health information about any of the campers.
4. What does poison ivy look like (an important reason we urge campers to stay on the trails on hikes)? (Show examples.)

ABOVE ALL: *Enjoy camp yourselves!* Let yourself be curious and respond to the campers' curiosity. When adults are interested in what interests the children, it adds to their motivation to learn.

Appendix 2: FEP Outdoor Environmental Education Teaching Rubric

Directions: Complete this evaluation of your university student teacher with *specific written comments* (REQUIRED) and a rubric score for each performance indicator. This is a formative evaluation and will NOT count as a grade for the FEP teachings, so be honest in your appraisal and feedback.

Rubric

- 4 = Excellent demonstration of meeting this indicator with *no need for improvement at all*
 - 3 = Very good demonstration of meeting this indicator with little need for improvement
 - 2 = Almost meeting this indicator with room for some improvement
 - 1 = Not meeting this indicator with much room for improvement needed
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Performance indicator	Written comments	Rubric Score
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Preparation and planning: The instructor was very well organized having the lesson on hand, hands-on materials, handouts, and other items readily available when needed

Opening: The instructor opened the lesson with a point of engagement, question, or link to students' prior knowledge or previous learning/lessons

Instructions: The instructor gave clear and concise directions for what the students were to do and adequately answered any procedural questions before beginning activity

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Performance indicator	Written comments	Rubric Score
<i>Activity:</i> The instructor guided the students' actions and learning throughout the activity including what they were to do, what they were NOT to do, pacing the students, answering questions, and the general welfare and safety of the students		
<i>Closing:</i> The instructor promptly assembled the students at the end of the activity in order to facilitate what they did/found/learned through knowledgeable questioning and guiding students during student sharing or presentations		
<i>Disposition:</i> The instructor demonstrated a strong teacher presence through multiple indicators including enthusiasm, positive attitude, interaction with students, clear commands, self-assuredness, a "take charge" approach, and/or other indications that a "teacher is present"		

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