

## Teaching Tips

*“Don’t step lightly in the wildwood because a government agency or a book tells you to do so. Tread lightly out of affection, out of respect, out of a generosity of spirit toward the land and its wild inhabitants.”*

*-David Foreman*

### **The Task**

We face a challenge. Much of our precious wilderness is being loved to death. The impacts occurring in these areas is rarely intentional. There are so many of us living in this fast growing part of the country, that these areas are receiving large amounts of use. Sometimes we take wilderness for granted. It seems as though it's part of our backyard.

You can help! One of the very best ways that young people can learn about our wild lands and how to care for them is from a group like yourself who has gone through the ranks, and who knows and understands the fragile and limited nature of our woodland playgrounds. Other young people look up to you, believing all you have to say.

Just a few hours of your time can make a big difference. Send your group on its way with a new awareness of Leave No Trace Skills. This section provides suggestions to smooth your way into a teaching role, making it easier for both you and your new students to appreciate and put in place the ethics and techniques outlined in this manual.

Use the skills you know best. Teach by example, by sharing your enthusiasm, and by working to expand outdoor Leave No Trace education to all levels.

### **Decide On Your Approach**

You may select some aspect of the curriculum. An alternative approach is to relate this subject to an event in your own life.

### **Prepare Your Activity Based on Students’ Needs And Abilities**

What do your students already know? Know the ages and learning ability of the young people you are teaching. See the page titled “Thinking and Learning Characteristics”.

### **Be Prepared For Participant Reactions and Behavior**

Keep in mind that parents or group leaders may have their own ideas about some issues, such as campfires, sanitation, or walking through the mud on the trail. If you have questions about appropriate ways to present your subject, discuss your plans with other Leave No Trace trainers or call the LNT Information line at 1-800-332- 4100.

### **Know Your Stuff!**

Study the material in this manual and contact any of the persons named herein if you

have questions.

### **Assemble Your Notes and Materials In Advance**

If each student is to have a handout or materials, make sure you have enough of each. See that materials are organized. Do a test run on any activities that you plan to offer.

### **Use Terminology That Is Appropriate for the Students**

If there are a number of words or concepts your participants would benefit by knowing in advance, give them out beforehand, so your students can learn them.

### **Be On Time!**

In fact, be early, so you can set up and be relaxed when it's time to do your thing.

### **Share Yourself**

Let your students know about how you got into outdoor recreation. Was there a special event or person in your life—a teacher, a learning experience, a book, a visit to a National Park or National Forest—that aroused your interest?

### **Have Fun**

If you are really enjoying this session, so will your students.

### **Involve the Students In Doing**

Bring an attention grabber if you can. Keep in mind that your goal is to arouse curiosity, excitement, and eagerness to know more. The contents of your backpack may be commonplace to you, but they are mysterious, unknown, even fascinating to others. When possible, let students handle equipment or samples.

### **Involve the Students in the Process**

Do a simple activity in which the students participate. The process skills of learning—observing, identifying, classifying, and measuring—are the skills that enable them to apply what you teach to everyday situations.

### **Stimulate Thinking by Asking Questions**

Questions that ask participants to make a prediction, to give an explanation, to state an opinion or to draw a conclusion are especially valuable. Be sure to allow time for each person to THINK before anyone gives answers.

## **Use Language the Students Will Understand**

Be conscious of vocabulary. Try not to use a difficult word when a simple one will do. Define words students may not know.

## **Make What You Are Talking About Real**

Show participants that the out-of-doors or backcountry is (or will be) part of their life. How has what you have learned up to this time changed the ways in which you think or behave? How will what you and these students do make all your outings better or different in the future?

## **Leave More Than A Memory Behind You**

Help set up activities that the group will continue after you leave. Hand out assignments for your students to complete on their own or with their families. Invite them to contact you with questions, and plan on answering those questions quickly!

## **Ask For An Evaluation Of Your Efforts**

Ask the students what they liked (and didn't like) about your presentation. Ask your group leader to critique your presentation and help you improve your teaching skills.

## **Schedule Your Next Training Session!**

## **Thinking and Learning Characteristics of Young People**

### **Early Elementary (K-2)**

#### **As a thinker...**

- Learns through manipulating objects.
- Believes what he or she sees.
- Can't trace steps back from a conclusion.
- Sees parts, not the whole.
- Does not understand that making physical changes in an object does not change its amount.

#### **As a learner...**

- Is expansive, adventurous, curious, eager to learn, energetic, always in motion, loud, and emotional -- has mood swings.
- Wants to please adults.
- Has difficulty controlling impulses and regulating behavior.
- Is very "me" centered. Seeks attention. Loves praise.
- Like to work in groups, but will need assistance.

- Can sit still and listen 10-15 minutes; needs frequent change of pace.

### **Late Elementary (3-5)**

#### **As a thinker...**

- Although still somewhat tied to seeing in order to believe, begins to understand concepts as well as objects.
- Understands hierarchical classification systems.
- Can combine, sort, multiply, substitute, divide.
- Begins to generalize, formulate hypotheses, use systematic problem-solving strategies.
- Likes to memorize, to learn facts.

#### **As a learner...**

- Understands rules and can follow them.
- Likes group activities and excursions. Is a great socializer and eager to fit in.
- Considers fairness to be important.
- Takes initiative and is self motivated.
- Is becoming an independent learner.
- Is a perfectionist who will practice the same thing over and over again.
- Avoids opposite sex.
- Can sit still and listen 20-30 minutes although variety increases attention span.

### **Middle Grades (6-8)**

#### **As a thinker...**

- Can hypothesize, create propositions, and evaluate.
- Can conceptualize in the abstract and understand probability.
- Begins to understand multiple causation.
- Developing understanding of ethical principles.

#### **As a learner...**

- Is emotional, restive, and eager to get moving.
- Is easily bored.
- Challenges rules, routines, and authority.
- Is beginning to have an interest in the opposite sex.
- Is typically more oriented to small-group activity.
- Has a vulnerable ego; is very self-conscious and concerned about how he/she is perceived by others.
- Can handle 30-40 minute sessions.

Reproduced from the North Carolina Museum of Life and Science, *Sharing Science with Children: A Survival Guide for Scientists and Engineers*.

## Sample Syllabi

This section contains two teaching syllabi to aid group leaders in incorporating Leave No Trace into their group activities. The first syllabus was written by a BSA Scoutmaster and is designed to fit into the existing training structure used by the Boy Scouts. The second syllabus was written by a wilderness ranger and will be useful in designing your Leave No Trace training. Elsewhere on this site are teaching tips, thinking and learning characteristics of young people, and some ideas to remember. Use your creativity and that of your troop to fit Leave No Trace awareness into all your troop's activities.

### Syllabus I

#### **Project Leave No Trace A Leave No Trace Syllabus** written by Kent Brooten, BSA Scoutmaster

This syllabus is intended to guide you, the Leave No Trace training leader, in creating a program that will result in behavior which makes your group members excellent citizens of the backcountry.

Before you can effectively lead a group in LNT principles, you must fully embrace these principles yourself. Leave No Trace must be a part of your every fiber. Failing to “own” this program before you begin will send a very confused message to your students and group members.

If you are not convinced of the necessity of this message, take the extra time now, before you begin training, to adopt the Leave No Trace principles. The next two pages will help you understand where you stand in regards to LNT information.

### Step 1

#### VISION STATEMENT

The Boy Scouts of America have utilized the out of doors to accomplish the Aims of Scouting: to Build Character, to Promote Fitness, and to Establish Citizenship.

Citizenship means more than understanding the Pledge of Allegiance or working well together in a patrol. In the context of Leave No Trace, it means becoming a responsible citizen of the wilderness—of all open lands and the natural world found there.

The vision of this training program is to educate the youth with Leave No Trace principles and to instill in the group members the desire to behave as a highly responsible citizen while in the out-of-doors.

As youth we work with grow up, they sow seeds of what they learn from their experiences in the Scouting program. As a High School student they may take their friends camping. Those friends naturally look to the “Boy Scouts” for the right way to do things. In college, more friends will be influenced by our Scouts. Throughout their lives, each of our Scouts will influence tens, hundreds or thousands of others in their method of camping. Jim and Lou Whittaker (famous mountain climbers) started as Boy Scouts.

Our vision as trainers should be to see our Scouts as ambassadors of the wilderness, from backyard to backcountry. We can make an incredible difference in the preservation of the wilderness for generations to come by how we lead our Scouts today. This program is a cornerstone in that preservation.

## Step 2

### WHERE TO START

This manual contains a great deal of information. Familiarize yourself with its contents. In addition to outlining the Project Leave No Trace Principles of Low Impact Recreation and the key Leave No Trace skills for frontcountry and backcountry camping, it contains excellent activity suggestions and appendices.

Each group will be starting at a different spot. Some units with extensive backpacking experience may already have the Leave No Trace principles as a part of their culture. Some units may only do frontcountry camping. Some may do a lot of backpacking but have no knowledge of Leave No Trace and consequently may have to overcome some bad habits. And to further complicate the task, even experienced units will probably have some new Scouts with no idea of Leave No Trace. The first step in putting a training plan together for *your* unit is to honestly understand where you are. Start by asking yourself the following questions:

- Does my troop often have to build a fire to get dried out after a sustained rain?
- Do we routinely build campfires to cook over?
- Do we often build new fire rings?
- Do we always leave the campsite spotless when we depart?
- Do we wash our dishes in nearby streams or lakes?
- Do we bathe in nearby streams or lakes?
- Do we have local critters getting into our food or garbage?
- Do we have Scouts cutting switchbacks?
- Do we enter protected areas with a group size larger than the established limit?

Honest answers to these questions will help determine where your group is in the process of learning LNT principles. Having established where you are will help you to outline a training program tailored to the knowledge of your troop.

The basic elements that should be included in all training curriculum are:

A) The Project Leave No Trace Principles of Low Impact Recreation and the skills outlined under the frontcountry and backcountry sections in this manual

1. Plan ahead and prepare.
2. Camp and travel on durable surfaces.
3. Pack it in, Pack it out.

4. Properly dispose of what you can't pack out.
5. Leave what you find.
6. Minimize use and impact of fires.
7. Minimize noise and visual intrusion.

B) Hands-on experience with monitored active feedback on progress.

C) Periodic reviews and refreshers on key concepts and skills.

### Step 3

#### THE TRAINING PROGRAM

When you climb a mountain, you have a definite destination in mind—the summit of the peak.

Our destination with this Leave No Trace program is: A greater awareness of how personal actions impact wilderness: from backyard to backcountry. Scouts will learn to differentiate between high and low-use areas, and will learn to apply appropriate camping skills to each area. It will take several sessions to accomplish this task. Sessions should take place both inside and outside, in the frontcountry and backcountry. Remember it is difficult to keep Scouts sitting still for longer than 45 minutes. Keep the activities varied. Make them fun.

What follows is a suggested outline. It is adaptable to meet your needs.

#### SESSION 1

“Today, we’re going to plan our next camping trip/day hike. We’ll go through the whole process of planning the trip together. Planning is the key to a successful outing. A well planned outing with prepared Scouts will go a long way to leaving no trace.”

- Plan the outing.
- What is the destination?
- What is the purpose of the outing (5 or 10 mile hike, working on the camping merit badge, taking photos, etc.) Each outing should have a purpose. That purpose should focus on one or more of the Aims of Scouting (Fitness, Character, Citizenship).
- Who will go? How will you be organized? Will you conform to the “rule of four”? Will your group size comply with the administering agency’s requirements? If your group size exceeds the limit, will you split into two groups with separate, distinct routes and destinations?
- What equipment will you take? Does that equipment promote LNT?
- How will you cook? Are fires allowed in the area? Are they discouraged? Where will the fuel come from? Is there a possibility of the area suddenly closing to fires due to fire danger?

Have the group plan the outing as a troop or patrol exercise. After they have completed the planning and are certain they have thought about all aspects of the plan, have them get back together. Lead a discussion based on the following questions. Stress they should have these bases covered with written answers. “Winging it” with off the cuff answers is *not* having it well planned.

#### Trip Planning Questions

Now that your trip is planned, answer these questions:

How long will it take to get from your meeting spot to the trail head?

Who will pay for gas? \_\_\_\_\_

How much will gas cost? \_\_\_\_\_

How much will each patrol member pay for food? \$\$\_\_\_\_\_

How heavy will your food be? \_\_\_\_\_ lbs/each

Did you plan the menu or did the adults? How much will the adults' food cost? \$ \_\_\_\_\_

How heavy will the adults' food be? \_\_\_\_\_ lbs/each

If the drivers are dropping you off, how long will they drive? \_\_\_\_\_ hours

Will you provide maps for the drivers to and from the trailhead?

Who will you give a list of participants to someone outside the hiking group?

Who will be the single contact outside the hiking group? \_\_\_\_\_ and  
will he or she have an itinerary?    yes            no

Will each member of the group have an itinerary?

Will the leader have permission slips in his pack? yes    no

Will you file a tour permit? yes    no

What other permits will you need? \_\_\_\_\_

How much emergency money will the leader have in his/her pack? 14. If you will be swimming, will your group have a certified Lifeguard or Red Cross Lifeguard? yes    no

Will an adult have his "safety afoot/afloat certification"? yes    no

Will anyone have Advanced First Aid training? yes    no

If you will be canoeing, will you have an extra paddle? yes no

Will you have an extra life jacket? yes no

If you are going out of the country, what items will you need to have along?

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Did you call the ranger to check on trail and road conditions? yes no

What are the current conditions?

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Are there special safety considerations you should be aware of?

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What is the worst weather you might encounter, and what equipment can you bring to prepare for such conditions?

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18. What is your group size? \_\_\_\_\_

What is the area's groups size limit? \_\_\_\_\_

Will every group leader have a detailed map and compass and know how to use them? yes no

Will your group do more than 3000' elevation gain on any one day?

What is the most elevation gained in one day on your planned route?

\_\_\_\_\_ feet

Will your group hike more than 12 miles per day? yes no

Will your car be safe in the parking lot if left unattended? yes no Did you check with the ranger? yes no

## Session 2

### Trails and Travel

Assign a patrol to do a demonstration on footwear. Ask them to discuss:

- 1) hiking boots and selection
- 2) gaiters
- 3) waterproofing boots (demonstrate)
- 4) footwear around camp

As trainer, you may have to lead them to insure they present accurate data. Information may be acquired through sporting goods shops and outing clubs.

After the demonstration/presentation, ask the remaining troop members where they can secure this equipment. Stress the importance of adequate footwear and why it is part of Leave No Trace equipment (i.e. if boots are waterproofed, you don't need a fire to dry them out, you won't need to walk off-trail to skirt muddy spots, etc.)

Get the group to close their eyes and visualize walking on a trail (or show some slides of people hiking on a trail). Ask them to describe some ways they can impact the trail. List these areas of impact on a flip chart. Post each page in the meeting room when complete. Follow along the "Trails and Travel" section in the book and insure they cover all areas.

Complete the exercise for Trailless Areas and discuss Trail Etiquette. Personalize it to your group. Relate how it might have affected your group at their last outing.

Alternatively, plan a day activity in a "natural" park near your meeting place. You might have your group meeting there instead of your regular meeting place, or your day activity might be a picnic, etc. Select an area with designated trails and "social" trails. Take the group for a short hike. Cover the various points in the Trails and Travel Section as you hike the trail.

## Session 3

### People, Plants, and Wildlife

If you have the opportunity during the hike in Session 2, try either the "Silent Hike," "Solitude Sit," or one of the other activities described in the Activities section of this manual.

Ask a group member (if you are a BSA group ask the Scout working on the Communications or Public Speaking Merit Badges) to prepare a talk on the impact of food and garbage in a campsite. Provide the appropriate section of the manual for them to review. Have them rehearse their talk for you prior to the meeting. An additional talk might be on the Plants section. Have no more than two talks, not to exceed five to seven minutes each. After the talk(s), pick a few group member to tell what they heard. Discuss as a group.

## Session 4

### Health and Sanitation

Select a small group of members to demonstrate how to properly do their dishes (as outlined in the Activities section of this manual). Have them demonstrate proper dishwashing during a meeting. This might accompany a cooking demonstration.

You may also want to select several other topics to demonstrate at meetings. For washing dishes, washing self, and human waste disposal it is important to have the members see these demonstrated step by step (for human waste disposal it isn't necessary they actually SEE a live demonstration—going through the actions without removing clothing parts or doing the dirty deed will suffice).

While on the day hike in Session 2 (or during another day hike) make a game of litter collection. Give a prize to the one who collects the most. Afterwards, discuss litter and why it's there. What effect does it have on their sense of wilderness. Have them address why THEY should clean it up. Lead them to realize it's part of our nature to be "helpful to other people at all times. ." If we won't clean it up, why should we expect someone else to?

One activity that might be helpful to encourage the students to be tidy while camping is called "Gimme Gimme." If one group member inadvertently drops litter and another group member has to pick it up, the second person is entitled to some of the first person's "goodies" ("Gimme! Gimme!")

## Session 5

### Campsites, Campfires, and Stoves

Go on the outing planned in Session 1.

During the meeting before the outing, take the True/False test on "Fires and Stoves" in the Activities section of this manual.

Discuss the answers.

For an activity during a meeting, split the group up into several smaller groups. Have each smaller group answer the "Wilderness Campsite" questions in the Activities section of this book. Have one member of the small group present their answers to everyone. Judge the "best" patrol and have a prize for that group.

Before camp is setup, ask the group to select various "Good" and "Bad" campsites. Discuss each selection. Your discussion should center around the "Type" of area you are in. Concentrate impact in highly used areas and disperse impact in pristine areas. Never camp or walk in moderately used areas.

Have them consider how possible "social" trails will influence their selection. Also consider the anticipated cooking area(s), trails to and from the water supply, distance from streams and lakes, proximity to other campers and other local factors.

During the outing demonstrate the use of a stove for cooking. Ask the group members to tell when stoves are most appropriate. Ask them to discuss the advantages and disadvantages of fires. Lead them to discover when fires are inappropriate and not allowed.

At the end of your trip, evaluate all aspects of the outing. Ask the group to discuss what they did well. Ask them to tell what they need to improve on. How will they accomplish it? Did they forget something that caused them to make a bigger impact? What will they do next time?

## **Session 6**

### **Certification and Evaluation**

Have groups plan for the Project Leave No Trace Certification Event outing, or another backcountry certification outing pre-arranged with the appropriate land management agency.

## Syllabus II

### Campsite Crusades

A three and a half-hour workshop designed to teach the fundamental of Leave No Trace

*Adapted from a version created by **Andrea Nightingale, Wilderness Ranger, Skykomish Ranger District***

The following syllabus is just one way to teach Leave No Trace skills. Feel free to adapt it to fit your group or troop's needs.

### WORKSHOP SYNOPSIS

Groups participate in hands-on activities beginning with a large group trip planning session. Then, breaking into smaller groups, they rotate through three outdoor stations:

- 1) In Camp
- 2) Stoves and Fires
- 3) Walking Wilderness

The session is concluded with a look at the Leader's camp.

### LEARNING OBJECTIVES

Group members learn how preplanning plays a vital role in the safety of the troop. A greater awareness of how personal actions impact Wilderness is fostered. Individuals learn to differentiate between high and low-use areas, and apply appropriate camping skills to each area. Individuals learn how to use stoves and how to build minimum impact fires and know when and where they are appropriate.

### CONCEPTS

- 1) Good preplanning makes a trip easier, more comfortable, and can allow you to more easily Leave No Trace.
- 2) Many safety precautions also make your trip lower impact.
- 3) Concentrate use and impact in popular places; disperse use and impact in pristine places; stay off places that are lightly impacted or just beginning to show effects.

### Indoor Activities

Total suggested time: **30 minutes**

### INTRODUCTION

Suggested Time: **5 Minutes**

This is a sample of how to begin. Be sure to introduce all three concepts early on and keep coming back

to them at every opportunity.

“Today we’re going on a camping trip. We’ll go through the whole process of planning for our trip together, then go outside and learn how to set up a no trace camp, when and how to use a stove and a campfire, and how to leave no trace while you are hiking. We’ll be focusing on three different ideas that are important for you to remember.

First, we’ll be inside for about forty-five minutes planning the trip, because planning is the most important part of any wilderness experience. The trip is more comfortable and it’s easier for your group to Leave No Trace at all if you have the proper equipment and knowledge.

The second idea I want you to remember is that you can make your experience safer and lower impact at the same time. One of the most common ways people impact the Wilderness is by not being prepared. For example, if you do not have adequate footgear you may end up going around muddy spots on the trail, making the trail even wider. Or if your rain gear isn’t adequate, you may get wet and cold; a dangerous situation which may require you to build a fire in an inappropriate area. Also, knowing important information about your route and what to do if you do run into trouble will make it easier for you to handle emergency situations.

Finally we will talk about essentially two different set of wilderness skills. One set is to use when you are traveling on a popular trail and are going to a popular area. Here the goal is to concentrate use and impact; we want to stay on established sites and trails. The second set of skills is for pristine areas. Here our goal is just the opposite. We want to avoid making noticeable trails or campsites, and thus we try to avoid sites where it appears someone has come before us. In both of these areas we want to stay off places that are lightly impacted or just beginning to show effects.”

Make sure your group understands what constitutes a popular, highly impacted area and a pristine, primitive areas before continuing on to the outdoor stations.

### **Ice Breakers**

Suggested time: **5 minutes**

Use these only if you think it’s necessary or if you are facilitating this program for an unfamiliar troop, the trip planning section below may be more than adequate as an icebreaker.

- 1) Have each person come up and pick a piece of equipment from a table laid out with common backpack contents. Go around and learn each person’s name as they explain to the groups what use each piece of equipment has.
- 2) If the group has camping experience ask each person to tell (briefly) their favorite camping memory.
- 3) Ask each person, “What is the most important thing to remember when camping? (This can be deliberately vague to mean either material items or skills).

### **TRIP PLANNING**

Suggested Time: **20-25 minutes**

Concepts: 1 and 2

Go over the Essentials of Backcountry Trip Planning with the group.

***Essentials of Backcountry Trip Planning***

- 1) Establish a goal or reason for your trip. What badges can be earned? What environmental education lessons can be learned?
- 2) Pick a route.
- 3) Gather maps, and call the appropriate public land management agency for current information.
- 4) Double check that all participants are in appropriate physical condition and have enough experience for the chosen route.
- 5) Gather equipment.
- 6) Fill out itinerary form and give to a party staying behind.

Go back to numbers 5 and 6 and elaborate, see the Leave No Trace Equipment List and Itinerary Forms located in the Appendix of this guide. Solicit responses from the group for #5 and write these on the board.

Have the equipment on hand to show everyone.

Explain briefly the objectives of the outside stations and how they work.

## **Outdoor Activities**

Total suggested time: **130 minutes**

### **INTRODUCE THE STATIONS**

Suggested time: **25 minutes**

Walk through the station areas with the whole group and explain the objectives of each one. Include concepts and give everyone enough information that they can make informed choices.

Divide the group into small groups of three for the In-Camp, Campfires and Stoves, and Walking Wilderness stations. Instructors can run this section in one of two ways, either have all three stations going at once so each group is doing something different, or have all three groups working the same station in three different areas. Float between the stations and make sure each group knows what to do.

#### **STATION 1 – IN-CAMP**

Group members choose an appropriate campsite from a given area. Preferably several appealing sites with different vegetation and/or impacts is within the station's boundaries. If not, instructors can easily create natural areas, such as lakes or rivers, boulder fields, trails, with flagging, signs, and tarps.

Depending on the group's experience, instructors may want to assign each small group a different scenario to work within. For example, one group is in a pristine alpine meadow with no established sites, another group is at a popular lake on Saturday night, etc.

#### **Activities**

- 1) Set up tent
- 2) Hang a food bag
- 3) Decide whether a minimum impact fire is appropriate or could be built in this site. If so, designate a place for a fire, but actual fire is built in the next station.
- 4) Dig a cat hole
- 5) Break camp and leave natural

Instructors should check on this group half way through the station so everyone has time to tear down their camp again and make it look as if it were never there. Remind everyone that they should save time for break down, and let them know how much time is left, but let them decide when to clean up. Be sure to check them again before rotating, and give them specific feedback either immediately or later.

#### **STATION 2 – CAMPFIRES OR STOVES**

Suggested time: **35 minutes**

Deciding how to cook your meals may prevent or cause damage to the land. Stoves are clean, lightweight, easy to use, and cause no impact. No trace fires take extra effort and care. A well-prepared camper will not NEED a fire to keep warm and dry. At this station demonstrate and teach the proper use of stoves, and the various techniques to build minimum impact fires — pit fires, mound fires, and pan

fires. Offer several different spots to build a fire, and materials to build a mound fire, a pit fire, and a pan fire. Have a backpack stove, fuel bottle, sticks of the proper size, perhaps even an entire fire ring showing the wrong way to build a fire with charred rocks and trash in the pit. Group members should tell the instructor their assumptions about what type of use the site gets and the vegetation types it has, or as in the above station, instructors can assign scenarios.

Pit Fire	To build a pit fire select a sandy area, such as a beach or dry, sandy wash. Dig a shallow pit (about the size of a Chinese Wok) using a stick or a small trowel. Build and keep the fire small. After scattering the cold, wet ashes away from water and the campsite, replace the sand. Camouflage the area by replacing rocks or stones and brushing scuffed areas. Rock rings are not necessary and blacken rocks permanently. They do little to prevent the spread of fires.
Mound Fire	To build a mound fire select a durable surface and make a mound of mineral soil (the light soil <i>below</i> the top soil) four to eight inches deep, preferably on a plastic tarp. Gather soil from a remote source (like the root wad of a fallen tree). Build the small fire top of the soil. Scatter the cold ashes in the proper manner and return the soil to its original location.
Fire Pan	Fire pans can be made from many materials including garbage can lids, pizza and cake pans, metal oil pans or store brought fire pans. Imagine building your fire on a pizza pan. You get the idea!

Throughout all of this training, stress that it takes some effort to have a Leave No Trace campfire. You shouldn't need a fire. If you do need a fire you probably are not prepared. Properly prepared campers do not NEED a fire. Improperly prepared campers need a fire for a variety of reasons: Some of these are:

- Wet clothes (inadequate rain gear)
- Wet boots (boots not sealed properly)
- Wet sleeping bags (make sure tent floor is seam sealed and put sleeping bags inside a plastic bag INSIDE a stuff sack — the stuff sack keeps the plastic bag from tearing, the plastic bag keeps the sleeping bag dry.
- Cold body temperature (inadequate or not enough clothing, use wool, polypropylene, etc. Wet cotton removes heat from the body 30 times faster than bare exposed skin, wool continues to insulate when wet).
- No stove.

### Activities

- 1) Demonstrate how to properly use a stove. Have the group members start their own stoves. Discuss stove safety and proper transportation of fuel.
- 2) Have the groups build a mound, pit, or pan fire and be able to explain why one was chosen over the other.
- 3) Gather proper-sized firewood from appropriate locations.
- 4) Light a small fire (if appropriate).
- 5) Hold a discussion about the pros and cons of fires and stoves.

6) Leave No Trace. Obscure signs that fires ever existed.

Fire Pros: ambiance, ceremony, and warmth

Fire Cons: blackens pots, leaves scars, there may be no firewood (due to too many fires or high elevation), uneven heat, slow cooking, not dependable in wet weather.

Stove Pros: clean, quick, easy, even cooking, leaves no impact or scar, generally reliable

Stove Cons: can be an expensive initial investment, malfunctions are possible, but rare

### **STATION 3 – WALKING WILDERNESS**

Suggested time: **35 minutes**

Many campers are quite conscientious around their campsites, but forget their leave no trace skills in their food bag when they leave camp. This station requires the instructor's closest attention and creativity, and many may choose to do it as a large group activity. Group members are given scenarios and required to perform tasks in different trailed or trailless areas designated by the instructor. If a suitably diverse area is not available, create areas with flagging and signs. It is important for the instructor to be knowledgeable about the variety of settings described below - and to be able to convey that knowledge to the group members! Make the scenarios as realistic as possible. The scenarios below are designed to give instructors some ideas to start from, please be creative and update this syllabus with your own plans!

#### **1 ) Popular, heavily eroded trail**

You are hiking in a group of eight on a five-day overnight trip. The trail is rough and rocky, with frequent mud holes, although it is not raining.

- a) How should you approach this trail? (i.e. walk on the edge, walk in the middle no matter what the obstacle, etc.)
- b) Your group decides you want to try to make this trail more passable, what can you do? Have the group dig a drain, clean a drain or build a check dam.
- c) You encounter another group hiking and you notice their boots aren't muddy at all, and they are walking around most of the obstacles on the trail. You decide you want to encourage them to see their boots as a renewable resource, and the trails as a nonrenewable resource. What can you do? Do a role play.

#### **2 ) Alpine meadow with braided trails**

Same scenario as above, go through the same questions quickly.

- a) How are alpine meadows the same as a forest trail, how are they different?

#### **3 ) Pristine meadows**

- a) How should you walk through a pristine sedge meadow?
- b) You decide you want to camp in a sedge meadow, where is the best place, and how can you leave it in a natural condition?

c) Now you are in a mixed meadow with heather, patches of sedge, wet spots, and boulders. Go through the above questions.

#### **4 ) Bushwhacking through the forest**

##### **Conclusion**

Suggested time: **25 minutes**

Set up a campsite (or have it set up already) and stage your conclusion with the whole group there. Briefly review all the activities. Ask questions to allow the participant to think and synthesize the information you've given them.

- 1) Explain how safety precautions are also good tools for no trace camping.
- 2) What are the most important things to remember when planning a camping trip?
- 3) Why is it important to wildlife proof you camp?
- 4) Does it matter if you choose to walk around a mud puddle, rocks and logs, or walk over snow in the trail? Why or why not?
- 5) Why is leaving no trace so important?
- 6) Explain how the approach in a low-use area is different than a high-use area.

Everyone should leave feeling like every little thing they do will make a difference. Through the leader's example and a little extra effort to minimize impact, Leave No Trace will become an integral part of their outdoor knowledge.