

Project LNT



Additional Activities for Older Students

Suggested Age Group: 12-18

1. Packing Light
2. Backpacking Problem Solving
3. Project Leave No Trace Principles of Low Impact Wilderness Recreation
4. Choosing a Wilderness Campsite
5. Wilderness Management: Five Situations For Role Playing
6. Dishwashing With One Liter of Water ... or Less
7. Fires or Stoves?
8. Campsite Selection
9. Wilderness Ranger Camp Check
10. Solitude Sit
11. Wilderness Research
12. Work For Wilderness: Make a Poster
13. A Hole in the Ground You Can Move
14. Nature Scavenger Hunt

Packing Light

Time Required

Thirty minutes.

Materials

Paper and pencil.

Objectives

1. To help participants determine essential and nonessential items for a backpack trip.
2. To teach participants the advantages of different types of equipment.

Process

1. **The setting:** There is a problem in the Larch Lakes area of the Pine Tree Wilderness. It seems that groups using the area tend to camp too close to the lakeshore and leave a lot of garbage behind. There are five (or however many groups there are) different lakes in the area. We need volunteer Wilderness Rangers for each of the lakes to promote our minimum impact camping ideas.

Since this is the Wilderness Ranger's first backpack trip, each group will help the Ranger assemble the necessary equipment. While at the lake, the Wilderness Ranger is called upon to search for a lost hiker. The Ranger must now decide which items to take on the search and rescue effort. The terrain is rugged and the ranger may have to be out overnight. Now they must decide which of the items are truly essential to survival.

Another option would be to have the participants research associated prices and determine the cost of outfitting their volunteer Wilderness Ranger.

2. **Divide the class into groups of five.** One person out of each group will be chosen as the spokesperson and volunteer Wilderness Ranger. The groups discuss and decide what items to pack for one person for one (maybe more) night(s). That person will explain to the class why they decided on their list of necessary items. Groups could also be required to prioritize (1, 2, 3...) the items.
3. The participants submit their calculated backpack weights (calculated from attached list) and are scored accordingly.

20-30 lbs.	Too Light	Forget something?
40 lbs.	Just Right	Enjoy yourself.
50-60 lbs.	Too Heavy	Way Too Much!

Discussion Questions

1. Which items did you leave behind? Why?
2. Which materials are lighter?
3. Which items will help you minimize your impacts on wilderness?
4. Will you survive if you get lost in a rainstorm for six days?
5. Which of the items are truly essential for survival?

Item Weight (Pounds)

Nylon Tent	4
Nylon Tent with rainfly	5
Canvas Tent	25
Canned Food	8
Dried Food	4
Iron Skillet and Plate	7
Stainless Steel Cooking Set and Cup	3
Eating Utensils	1
Foam Pad	2
Therma-Rest pad	2
Army Cot	12
Polyester Sleeping Bag	4
Down Sleeping Bag	3
Cotton Sleeping Bag	6
Metal Bucket	3
Nylon Collapsible Bucket	1
Backpack with Steel frame	10
Backpack with Aluminum Frame	4
Clothes	5
Raincoat	2
Backpack Stove	1
Flashlight	1
Matches, Firestarter, First Aid Kit, Knife	1
Map and Compass	1
Water and Water Bottle	1
Water Filter	2
Trowel and garbage bag	1
Rope	1
Light Camp Shoes	1
Flashlight	1

Your Total: _____

Backpacking Problem Solving

1. Your group of six children and two adults has a backcountry permit for the group campsite at Indian Bar (a 10 mile hike from the trailhead) When your group arrives at Indian Bar the group site and the three other tent sites are occupied. What information do you still need before making a decision? Given this information, what would you do and why?
2. Your group of 11 youth and 3 adults want to go backpacking as a group in Glacier Peak Wilderness for three nights. How will your group resolve the 12 person group limit, yet keep everyone happy with the decision (including the ranger).
3. Ten girls who have received training in Leave No Trace camping skills have been asked to program aide at a Junior encampment at a council-owned site with platform tents and cabins. What Leave No Trace camping skills can they teach the Juniors to assist them in developing a Leave No Trace camping ethic?
4. Your troop has been trained in minimum impact camping. You are camped along a river in a National Forest campground. During dinner preparation your troop makes these observation of the family in the adjacent site: mom is breaking dead limbs off trees for firewood, dad is doing dishes in the river, a bouquet of wildflowers decorates their table, the daughter is carving her initials in a tree, the son is cleaning fish by the water spigot, and their dog is barking at a squirrel he has chased up a tree. Should the adult troop leaders say something? Should the Scouts? What can your troop do?
5. Due to a washout on the trail your group will not reach the planned campsite before dark. What steps should your group take to select an emergency campsite? Before leaving camp the next morning how will you disguise the site?

Project Leave No Trace Principles of Low Impact Recreation

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.

Decide which of the above principles apply to the following statements. Keep in mind that more than one principle may be correct.

- a. Soft-soled shoes should be worn around the campsite to reduce impact
- b. Portable stoves should be used
- c. Repackage food before the start of the trip
- d. Avoid camping in fragile or damp mountain meadows
- e. Use existing fire rings
- f. When hiking off-trail, spread out and walk abreast
- g. Carry out all garbage, toilet paper, and used sanitary supplies
- h. Urinate on a rotten stump, log, or rock
- i. Walk through rather than around muddy places on the trail
- j. Camp on snow, ice, sand, gravel, or rock when possible
- k. Camp out of sight of the trail, shoreline, or meadow when possible
- l. Carry a collapsible water container
- m. Never cut switchbacks
- n. If possible, walk on rocks or bare spots around the campsite or when traveling off trail
- o. Avoid walking on abandoned or newly developing trails
- p. Select earth-toned clothing and equipment
- q. Avoid glass, tin cans and aluminum packaging
- r. Strain dishwater and pack out food scraps
- s. Bury human waste 200 feet from camp, water sources, and trails
- t. Leave your pet at home
- u. Remove downed limbs and small rocks from the trail
- v. Avoid talking loudly or shouting
- w. Wash and dispose of wash water 200 feet from water sources
- x. Dismantle multiple fire rings in an established site, and all fire rings in a pristine area
- y. Don't feed the animals

- ___ z. Contact the proper land management agency prior to the trip
- ___ aa. Cover cuts across switchbacks with downed limbs and branches
- ___ bb. Camp only one night in a pristine area, then move to another site
- ___ cc. Pick up litter along the trail
- ___ dd. Don't hammer nails into trees or trench around tents
- ___ ee. Never break limbs off trees, and use downed wood only if there is an abundance and it doesn't need to be chopped or sawn
- ___ ff. Wax or grease your boots well before leaving on a trip
- ___ gg. Clear clogged drainage dips along the trail
- ___ hh. Avoid using a pretty, mossy spot for a rest break

Choosing A Wilderness Campsite

Michelle, Joe, Bill, Darcy and Lois went camping one weekend at Crystal Lake in the Glacier Lily Wilderness. They each set up camp in established sites in different locations. One campsite was within 50 feet of the lake, one campsite was adjacent to the access trail to the lake, one campsite was 200 - 300 feet away from the lake and hidden in some trees, one campsite was out of sight of the trail and next to the stream flowing out of Crystal Lake, and the last campsite was on a wooded hilltop within a quarter mile of the lake. Randy, a wilderness ranger happened to be traveling through the area and looked at each camp. Randy rated the campsites from one to five on how well they protected wilderness values with a rating of 1 as best campsite and a rating of 5 as the worst. From the following clues what ranking did each campsite receive and who camped there?

1. Darcy didn't camp by the lakeshore. She knew it was the worst possible campsite because plants by the shore are easily damaged by people camping on them, soils are usually wet and muddy, and people like to use those areas during the day.
2. The wilderness ranger told Michelle that camping where you are hidden from others' view is preferred to camping next to the main trail. The site on the wooded hilltop or in the trees away from the lake are well hidden.
3. Joe, Lois, and the person with the camp by the lake all went fishing in Crystal Lake.
4. Michelle was camped next to the main access to Crystal Lake.
5. Randy the ranger said camping by the stream is better than on the access trail if the campsite is away from other people (cannot be seen) and you use low impact camping techniques.
6. Randy also said that camping on a wooded hilltop 1/4 mile away from the lake was good because these sites can usually take a lot of use with little damage to ground and vegetation, and the camp was well away from other visitors. The ranger also said that a camp secluded in the trees 200 to 300 feet from the lake was usually adequate to protect the lake and not be noticeable, and camping in the trees was also closer for enjoyment of the lake. Both camps are better than the camp by the stream, however, because the stream can be impacted easily by food scraps, waste water, and the fact that others would likely camp there again .
7. Bill tried to cook the fish he had caught that day on a campfire built with green firewood he had cut with his saw and hatchet.
8. Randy told Joe he picked the best camping site and congratulated Lois on the proper use of low impact camping skills that kept her from damaging her stream-side campsite.

Answers:

Campsite within 50 feet of the Lake

Bill ranger rating - 5

Campsite next to the access trail to the Lake

Michelle ranger rating - 4

Campsite out of sight of trail next to stream

Lois ranger rating - 3

Campsite on wooded hilltop within 1/4 mile of Lake

Darcy ranger rating - 2

Campsite in trees 200 - 300 feet away from trail

Joe ranger rating - 1

Wilderness Management: Five Situations for Role Playing

The following five scenarios are role-play situations which present problems to be solved by the student. The teacher should choose individuals to act in the various roles and to read the situations aloud. As students act out the scenarios, the teacher may insert questions or points of information which may help to expedite the role play. At the end, a class discussion should explore ideas and controversies that may arise during the role-play. Follow-up activities may include further research into the topics explored.

Scenario 1: Minimum impact/Maximum impact

Roles: Group of friends and a wilderness ranger

Scenario: Imagine about seven of your friends and yourself on a hiking trip in the Glacier Lily Wilderness. You've left the city early Saturday morning for a two-day hike to get away from civilization and chores. You carry along with you a backpack, tent, food and other lightweight conveniences that will keep you somewhat comfortable in a place that does not have running water, bathrooms, electricity or picnic tables.

You and your friends started early Saturday morning and have hiked the whole day in order to get to the Wilderness with its expansive meadows, alpine trees, hungry mosquitoes, and majestic mountain peaks. You finally reach your destination, Mirror Lake, elevation 5,050 feet. This is wilderness.

As you rest and eat your trail mix, you and your friends start to look around for a place to pitch your tents. Some of your friends set up their tent next to the lake and proceed to dig a trench around it to drain off any rainwater that might fall. Some take out their hatchets and chop a few green boughs from a nearby fir tree for their beds. Another boy gathers large rocks for a campfire and chops down an old tree near the campsite for firewood. A girl takes some trail mix out of her backpack and feeds the little chipmunks nearby.

Just after you set up camp and are about to get your fire started, a wilderness ranger walks into camp.

Adapted with permission of North Cascades Institute, from the Teaching For Wilderness publication.

Scenario 2: Hikers and Herds

Roles: Cattle Rancher and two backpackers

Scenario: A rancher has a permit from the U.S. Forest Service to graze cows in a **designated** wilderness area. The rancher is moving cows to the higher mountain meadows now that the weather has turned to spring. Some backpackers start hiking up the same trail later that day and quickly come up behind the herd, side-stepping "cow patties" and avoiding muddy places in the trail where the cows have passed through. In the late afternoon the backpackers catch up with the rancher, Joe Mellon. Joe, still on horseback, greets the hikers.

"Yep," he says, "My grandpappy brought his cows up here in 1928 and we've been doin' so ever since. He says the area was made wilderness in 1964, and that some of his neighbors were upset that they couldn't bring their trucks into the "old corrals" anymore, but he didn't mind because he always rode in anyway."

When asked if he thinks the cows damage the land, he says he's "seen as much change from the hikers and horse riders as from the cows."

Discussion: What causes impacts to the land? What impacts will be there for many years? Which impacts will heal with time? What should be done to prevent negative changes from happening?

This scenario has been adapted from its original form.

Scenario 3: To Bridge or Not to Bridge

Roles: Forest Service Wilderness Manager and citizens in a public meeting

Scenario: It is July and the snow is melting in the mountains. A group of friends decide to go on a day hike on the Glacier Creek trail into a wilderness area. They start their hike early on a beautiful sunny morning. When they reach Glacier Creek, they easily cross the bubbling stream by stepping on rocks and logs. Eventually, they get to a good lookout point and stop for lunch in the warm sun.

After lunch the hikers head back down the trail and again need to cross Glacier Creek. However, by three o'clock in the afternoon the creek is much higher than it was in the morning, because the melting snow added water to the creek. The hikers are tired and don't rope up or help each other to safely cross the now-roaring creek. One by one, the hikers slowly make their way across the swollen creek. As the last person walks across the swift currents, she loses her footing, slips and is carried downstream over a waterfall. She breaks her neck and is paralyzed for life.

A public meeting is held to discuss the future of the Glacier Creek Wilderness Area. At the public meeting, the Wilderness Manager discusses with the audience the problem of managing a wilderness area so it can remain in a primitive state. Putting a bridge over Glacier Creek would make it safer for hikers, but it would diminish how wild and primitive the landscape is. Having a bridge there would reduce the challenge to hikers. The manager points out that wilderness areas are not recreation areas, recreation is only one of the public uses that the Wilderness Act declares wilderness shall serve.

Open the public meeting with a description of the situation, then throw the discussion open to the "audience" about how the scenario should be resolved. Discuss the problems in managing an area so it looks uncontrolled, untamed, untrammled, and untouched by people.

Scenario 4: Fire, Fire, Fire

Roles: Wilderness Ranger, local hunter, backpacker, timber company representative who owns adjacent land, county commissioner, wildlife biologist

Scenario: A thunderstorm makes its way down the North Cascades Mountain Range. Lightning strikes and a fire starts just inside the boundary of a designated Wilderness. The National Park Service has taken the position that fires started by natural causes inside Wilderness areas will be allowed to burn, while man-made fires will be controlled.

The fire is small and the first day only ten acres burn. However, the wind picks up and the fire begins to move deeper into the Wilderness area.

Discuss and collectively decide on the management of this fire. Assume each interest's position. Evaluate all options.

Scenario 5: Wilderness for Wildlife?

Roles: Hiker and Wilderness Ranger

Situation: In some designated Wilderness areas that are heavily used, black bears have discovered hikers' food. Bears have the ability to smell about 100 times better than humans and readily smell out food stored inside backpacks.

A backpacker goes on a day hike and returns to find her tent wiggling through the meadow. A bear had smelled snack food and crawled inside. Too frightened to stay any longer, the hiker heads out without her tent, backpack, or car keys and hitchhikes to a ranger station for help.

What should be done about the bear? Is it a safety hazard? What should be done about the hiker who left food in the tent? Is it the Wilderness Manager's responsibility to keep bears away? Is it the hikers' responsibility to hang their food to keep bears away? Should metal bear-proof containers be provided?

Dishwashing With One Liter of Water...or Less

This activity describes a method for a patrol or small group to wash their dishes for an entire meal using only one liter of water. The first step begins at home because planning is the key to easy clean up; the type of meal cooked, the number of pots and pans used, the amount of food cooked will all determine how easy it is to clean up.

During the meal

Leftovers can be a serious problem. Careful planning will insure no leftovers and few scraps (bones, fat, etc.) which need to be carried out. Encourage each person to finish all the food they take. Untouched leftovers should be placed in a plastic ziplock bag and hung up with the garbage. These leftovers can be eaten later.

Immediately after the meal is cooked, put about 0.8 liters of water in a clean pot and set it on the stove to boil.

After the meal

Usually, two people will be responsible for the dishwashing. Typically one will wash, the other will collect the dishes, rinse and dry.

At this point, the water should be boiling.

Take a portion of the water—about 1/4 of the pot and put it in the “dishpan”. The dishpan might be a cooking pot, a fry pan, or even a clean pot.

Add soap.

This is actually a critical step. The old saying: “if a little bit does a lot of good, a lot does a heck of a lot of good” doesn’t hold in this case. Too much soap is a disaster. It’s always easy to add more soap. It’s nearly impossible to remove it. Start with several drops of concentrated dish soap. Most liquid soaps today are “biodegradable” (these should have been repackaged into a small squeeze bottle with a spout).

Add the remaining portion of the cold water to the dishwater until it is a comfortable temperature. If it’s winter, set the dishpan on an insulator - or else it will become frigid by the end of this exercise.

First, wash items that have been closest to mouths: utensils, then proceed to cups and plates, and finally, pots and pans.

When washing, keep all dishwater confined to the dishpan. Clean out cups and pour the water back into the dishpan. Wipe excess soap off each item before rinsing.

Rinsing

The water should be kept boiling the entire time you are rinsing. Boiling water helps sterilize the dishes. It also aids in drying the metal utensils, cups, plates, pots, and pans. Stoves usually can be turned to the “low” setting and still maintain a boil.

Drop the silverware into the boiling water. If the utensils are made of metal, allow them to reach the boiling temperature. If they are plastic or Teflon, you may wish to remove them after a brief dip because extended immersion will produce interesting (albeit non-functional) shapes.

As an alternative method, you may use a net rinse bag. The utensils are placed in the bag, which is immersed in the boiling water. After rinsing, the bag is spun in a circle to dry.

The eating utensils can be removed from the pot of boiling water with the aid of a spatula, a small pair of needle nose pliers, or a “Leatherman” tool. Lay out a towel on a foam pad and place the utensils “bowl down” on the towel. If they reached boiling temperature, they will dry quickly by themselves.

A potential problem occurs when a plate or pot is bigger than the rinse water pot.

What to do?

Use a cup (preferably one with a handle) to dip water from the rinse pot and pour across the plate or pot—allowing it to drain **BACK INTO THE RINSE WATER**. Don't pour the rinse water out onto the ground to make mud pie, save that for the little kids at home.

Turn the pots upside down to dry on the towel.

When all dishes are washed, fling the dishwater in a wide sweeping arc into the brush 200 feet from water. Rinse the dishpan. Fling the rinse water in a wide sweeping arc into the brush. Dry dishes that may still be wet.

And you're done. One liter of water to do your whole patrol's dishes. No mess in the campsite. Only one liter of water used (it's possible to use much less than one liter if you're in a "dry camp" environment).

What to do when camping in *BEAR COUNTRY*

There is a popular saying: If a needle falls from a tree in the forest, a deer will hear it, an eagle will see it, and a bear will smell it. Bears have an incredible sense of smell. Special precautions must be taken when in bear country.

We recommend that all cooking be done at least 100 feet from campsites. Food, garbage and scented toiletries, such as toothpaste, bug repellent and deodorant, should be hung up well away from tents (at least 100 ft). All food particles should be strained out of the rinse water and put in the garbage, which should be hung up with the food.

In the heart of grizzly bear country it is even recommended that every camper have a separate set of "cooking and eating" clothes that are only used during meal time, which are hung nightly in a sealed bag with the food. Nothing, including sunscreen and bug repellent, should go into the tent except the hiker's sweaty body and the sleeping bag.

Fires or Stoves?

Fires or Stoves: Answer True or False to these stove and fire statements.

1. T F Fires can leave scars
2. T F Stoves work if wet
3. T F Fires are warm
4. T F Stoves leave ashes
5. T F Big logs burn best
6. T F Ring fires with rocks
7. T F Stoves are fast
8. T F Stoves are clean
9. T F Fires blacken pots
10. T F Stoves waste wood

Skilled thinking: Do you know how to build a fire that would leave your campsite as natural as if you had used a stove?

Answers:

1. T Very few people have developed the skill to build a fire without scarring the land.
2. T Stoves work even after days of rain.
3. T Fires do provide comforting warmth, but in an emergency, a hot cup of water that is quickly prepared on a stove will help stave off a chill more efficiently. This is especially true in the event of hypothermia.
4. F Because stoves burn white gas or kerosene, they leave no ash to clean up and dispose of. Do you know how to properly dispose of ashes left behind from a fire? **Hint:** the best way is generally not to bury them.
5. F Small wood burns cleaner than big logs. Big logs, left in the forest, also replenish nutrients in soils and provide insect habitat vital to birds and other animals. A good rule of thumb for wood size is: "Dead, down and no bigger around than your wrist."
6. F Although people used to teach ringing fires with rocks, rocks provide very little protection against fires spreading. Rocks simply become charred with permanent black soot and leave an ugly reminder of human presence in the wilderness.
7. T An experienced camper using a stove can have supper done before the fire builders have finished gathering their wood.
8. T Stoves keep your clothes smelling clean and make after dinner cleanup a cinch.
9. T The same soot from fires that blackens rocks will also make your pots harder to clean.
10. F Stoves do use fossil fuels for cooking, but they don't deplete wood in heavily camped areas.

Recommendations

Follow these recommendations when using stoves:

- check your stove to make sure it works before leaving home
- avoid burning excessive amounts of fuel
- clear away dry leaves and needles before lighting your stove

Follow these recommendations for fires:

- clear away dry leaves and needles
- avoid building fires under low branches, in roots, duff or old stumps
- use small pieces of wood
- avoid burning wood with excessive sap

THREE METHODS FOR BUILDING MINIMUM IMPACT FIRES:

Pit Fire -To build a pit fire select a sandy area, such as a beach or sandy wash. Dig a shallow pit (about the size of a Chinese Wok) using a stick or a small trowel. Light a small fire inside the pit. After scattering all the cold and wet ashes away from water and the campsite, replace the sand. If you moved rocks, replace them. Camouflage the area with fresh sand. Rock rings are not necessary – they blacken rocks permanently and 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 4-6 inches deep on top of a plastic tarp. Gather soil from a remote source like the root wad of a fallen tree.

Build the small fire on 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, or store bought fire pans. Building your fire on top of the metal. Scatter the cold ashes in the proper manner. (Sometimes USDA Forest Service Ranger Stations will give away old fire shelters to be cut up and used for this purpose. Call and ask!)

Campsite Selection

Find the six things you should do when choosing a campsite.

1. ___ In popular areas, choose heavily-used sites
2. ___ Shorten your stay if camped at pristine (unused) sites
3. ___ Hide your campsite from the view of others
4. ___ Build tables and chairs from scattered wood
5. ___ Find campsites that won't damage plants
6. ___ Confine tents to bare areas when at heavily-used sites
7. ___ Arrive at your destination early so that you will have lots of time to look for the best campsite

Answers on next page.

Answers:

1. In popular areas, it is usually easy to find established campsites. It is difficult to damage these areas further and confining your activities to these sites help prevent campsite proliferation.
2. If you choose to stay at a pristine site, realize that damage to unused areas can occur in just a day or two. Try to keep your stay short and move on.
3. By hiding your campsite from the view of others you help protect the desire to have a primitive experience that brings people to the backcountry.
4. If the goal of Leave No Trace camping is to get away from civilization and leave no evidence of your presence, building structures of wood is not appropriate.
5. Always try to locate your campsite on a durable surface. Gravel areas, dry grasses and rock slabs are good examples of durable campsites.
6. When camping at heavily used sites, you can prevent campsite expansion by confining tents and activities to bare areas. When camped at pristine sites the opposite is often true and you may have to disperse your tents.
7. Leaving time at the end of the day will ensure that you find an appropriate no trace site for your group.

Wilderness Ranger Camp Check

Objectives

1. To teach proper minimum impact camping techniques.
2. To help participants develop a good wildland ethic.

Time Required

Forty-five minutes.

Materials

1. Trash: plastic wrappers etc.
2. Campfire ring: rocks, ashes, aluminum foil
3. Soap: box or bar
4. Tent (Nylon)
5. Lightweight stove
6. Roll of toilet paper
7. Foam pad
8. Sleeping bag (polyester)
9. Collapsible bucket (nylon)

Process

The facilitator sets up a 'backcountry camp' using the following bad camping practices:

- Trash spread around camp
 - Campfire ring with aluminum foil in the ashes
 - Soap by stream
 - Tent by stream
 - Add your own ideas
2. The participants, deputized Wilderness Rangers, 'hike' to the problem camp.
 3. The facilitator carries a backpack with the following discussion items:
 - Canned and dried food
 - Lightweight stove
 - Roll of toilet paper
 - Foam pad
 - Sleeping bag (Polyester)
 - Lightweight tent
 - Collapsible bucket (Nylon)

Discussion questions

- What would a Wilderness Ranger do if he or she came upon this campsite? Have participants pick up the trash and naturalize the fire ring.
- Why shouldn't you use soap in the stream? How far away from water should you do your washing?
- Why shouldn't you set up your tent next to the stream? How far away should your tent be from the stream?
- What other kinds of bad camping practices have you seen?
- What are the advantages of the equipment the facilitator is carrying?
- What is the difference between canned and dried food?
- If you carried along a lightweight stove, would you even need to build a fire?
- What is the proper way to dispose of human waste?
- Why would you want to take a foam pad?
- What are the advantages of a polyester versus a cotton sleeping bag?
- Would you rather take a nylon or canvas tent?
- Why would you take a nylon collapsible bucket instead of a metal bucket?
- How does using this equipment help you minimize your impacts?

Solitude Sit

Objectives:

1. To increase personal awareness of solitude.
2. To provide participants an opportunity to explore their own perceptions of the difference between wilderness and civilization.
3. To help participants understand why the words “opportunity for solitude” were included in the Wilderness Act.

Process

1. The facilitator should select two areas. One should retain most of its natural qualities; for example, a wild or natural area in a wildlife refuge, city park, or vacant lot. The other site should be a highly developed area, such as, a downtown street or shopping mall. If both environments are not readily accessible, choose one site that has both wilderness and civilization qualities.
2. The participants will spend 15 minutes writing down their sensory expectations for each area.
3. The facilitator takes the participants to the two areas. The participants will spend 15 minutes alone in each area, recording actual observations.
4. Participants share with one another their expectations and observations.

WILD AREA

	What you expected	What you observed
SIGHT		
SOUND		
TASTE		
TOUCH		
SMELL		

CIVILIZED AREA

	What you expected	What you observed
SIGHT		
SOUND		
TASTE		
TOUCH		
SMELL		

Time Out for Discussion

1. What is solitude? Do you have to be alone to experience it?
2. How did your perception of solitude change in each of these areas?
3. How were your expectations different from what you actually observed in these areas?
4. What did you perceive in either setting that appeared inconsistent or out of place with its setting?
5. Did you perceive any similarities between the wild and civilized areas? What qualities made them similar?
6. Based on your observations, why was the opportunity for solitude put into the wording of the Wilderness Act?

Wilderness Research

In order for students to gain a better understanding of and appreciation for Wilderness in their own state, this activity focuses on researching an actual Wilderness area.

Have each student choose a wilderness area and research it. Contact U.S. Forest Service, National Park Service, U.S. Bureau of Land Management or U.S. Fish and Wildlife Service Office for more information (see addresses listed in resource section).

Students should collect at least the following information:

- _What is the name of the wilderness area?
- _When was it designated as Wilderness?
- _Describe its physical characteristics.
- _How was it designated as Wilderness?
- _Who was responsible for working on getting it designated as Wilderness?
- _How is it managed today?
- _Are there any major problems or controversies surrounding this wilderness area?

Work For Wilderness: Create A Poster

One way to educate students and the public is by making and displaying posters. Effective posters combine artwork and information in a clear and concise one-page statement. Have students brainstorm messages about wilderness and clearly illustrate the message, with words or pictures (or videotape). Have a poster contest to help students learn how to increase the visibility of an issue. Perhaps local dignitaries or agency personnel could be involved.

Some examples of messages about wilderness values which may be illustrated include:

- Wilderness is critical to the survival of many kinds of wildlife. Numerous species are dependent on wilderness, or wild, undisturbed land. Among them are the wolf, Grizzly bear, bighorn sheep, mountain goat, elk, moose, woodland caribou, mountain lion, fisher, marten, and ptarmigan. They require essentially undeveloped, remote, habitat undisturbed by the continued presence of people and their works. Some of these species are on the brink of extinction and assuring their recovery requires safeguarding their wildland habitat.
- Wilderness protects watersheds and promotes high quality, stable flows of water for down-stream users. Wilderness protects airsheds, protecting places that produce clean air to breathe.
- Wilderness provides quality recreation for millions of Americans.
- Wilderness has tremendous scientific and educational value.
- Wilderness areas serve as excellent outdoor laboratories for scientists, educators, and students. From wilderness comes important information that helps us better manage our developed lands.
- Wilderness preserves an important part of our rich historical and cultural American heritage. Our nation was founded in wilderness, and the American character has been molded by it. Wilderness promotes freedom, self-reliance, and the pioneer spirit of adventure. Wilderness has inspired great art, poetry, and literature.
- Wilderness has value for its own sake, and for the species that live in it—apart from human use and enjoyment.
- Wilderness will be preserved only if Leave No Trace camping and hiking methods are practiced.

- Wilderness has value for some people even if they seldom or never go to a Wilderness area. People just like knowing it's there and value the concept of having wild lands preserved for their own sake.

A Hole in the Ground You Can Move

Group leaders can make an effective model of a cathole for those presentations where you're far from the woods and nature. Here's an example and illustrations of how to build a truly portable hole-in-the-ground.

Moveable Cathole: A one-inch thick piece of Styrofoam insulating board will be your "ground surface" where you will "dig" your cathole. Using a 3 lb. coffee can, trace a circle on the board. Cut the circle out and press the coffee can down into the hole. The can is the cathole, the ring of Styrofoam left over is the plug used to cover the hole. Use a coat of spray adhesive or glue to affix dirt and duff to the entire model, even the hole. You can fill the hole with dirt and "dig it out" when illustrating the method. Coat the plug with dirt, too, to allow you to show how to cover the hole when finished. You might also consider building a side view of the hole. Cut the can in half to make a cross-sectional diagram that can be mounted in a box or frame. Time to build: 15 minutes.

Nature Scavenger Hunt

Grabbing Your Group's Attention

Your group will be going on a Nature Scavenger Hunt. Rather than collecting objects, they will be listing ideas on paper. The hunt will help participants discover how much they have in common with the natural world and how the natural world influences their survival. This activity sets the stage for learning and embracing Leave No Trace principles.

Begin the activity by conducting one of the following:

- an excursion to an outdoor setting such as a park, canyon, river or forest.
- an excursion to a natural setting via a slide show, color photographs, or posters.
- a mind excursion where participants imagine their favorite natural settings.
- an excursion where participants close their eyes while you describe a natural setting.

The Activity

Give each participant a piece of paper and a pencil. Have them make three columns with the titles "Things in Nature", "Things We Have In Common", and "How It Helps Me". Participants are to observe their environment physically if they are outdoors, or mentally if they are indoors. They must find objects in nature and tell how they are like that object. Make sure they consider less noticeable things such as air, soil, and sun. For example:

Time Out for Discussion

Have participants share one or more of their connections. Help them to discover that this personal connection is where a commitment to land stewardship begins. Land stewardship is the goal of the Leave No Trace program. Outline for them what they will be learning about Leave No Trace in the future.

Adapted with permission of the Bureau of Land Management, Utah State Office, from the Teaching Leave No Trace, Activities to Teach Responsible Backcountry Skills publication.

Pack It In, Pack It Out (#2)

Note: Arrangements for this activity must be made a week or two in advance. Find a location that is littered with garbage. For example, a roadside park, or a high school parking lot right after school. This activity can also be conducted during organized cleanup projects sponsored by groups that have "adopted" road segments or recreation sites. If you cannot find or visit a site, simulate a site at or near your meeting site.

Grabbing Your Group's Attention

Travel to the site. Have your group observe the littered site and record in writing what they think of the situation and how it makes them feel. Present each member of the group with a garbage bag and with the challenge to make the area look more pleasant.

The Activity

Have a contest to see who can collect the most garbage in 10 minutes.

Instruct the group to use care when picking up sharp, rusty, or unsanitary waste. You may wish to have participants bring light gloves for this activity.

The Discussion

Discuss what litter is and the effects of litter in general. Discuss the effects of litter in the backcountry.

Divide participants into pairs and have them devise a plan for packing out their garbage on their next trip into the backcountry. Discuss each plan. How do one-pot meals contribute to the creation of less bulk and therefore less garbage? What, if anything, can an individual do about litter of other backpackers?

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Our Natural World - Nature's Web

Before people can decide to Leave No Trace in the backcountry, they often need to adopt reasons for caring for our natural world. This activity will help participants identify those reasons and help to foster outdoor ethics.

What Your Group Will Learn

After participating in an activity to set the stage for learning outdoor ethics, group members will be capable of:

1. describing simple connections between plants and animals of an ecosystem.
2. predicting changes to an ecosystem caused by human impacts.
3. determining how to choose behaviors that protect natural resources. Your group will play a game that will help them make connections to the natural world and understand how their behaviors can impact nature. Using a ball of string and cards that represent plants and animals, group members will construct a web of connections between all living things.

Materials

- Cards approximately 3" x 5".
- Hole punch.
- Approximately 4 feet of yarn per person.
- 100 feet of thick string rolled into a ball.
- Paper and pencil for each person.
- Symbols, pictures, or words to represent sun, clean water, clean soil and air.
- A copy of the directions. Preparation
- Read the entire lesson plan thoroughly. This activity will take approximately 45 minutes to complete.
- Roll up 100 feet of string into a ball.
- Have scenarios listed below available for use by leaders or by individuals.
- Follow the directions listed below in Alpine Ecosystems.

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Alpine Ecosystem

Write the names of the plants and animals listed in the categories below on the 3" x 5" cards, one name to a card. Punch holes in each card and attach yarn long enough to loop the card over the participant's head. Distribute all the cards. If your group is smaller than 17, some group members will have two cards. If your group is larger than 17, you will need to add plants and animals to the ecosystem. Some ideas include: berry, bear, owl, hummingbird, and grub worm.

Grabbing Your Group's Attention (5 Minutes)

Have each group member, including the leader, loop their card over their head. Explain to the group members that the organisms on their cards represent plants and animals that live in the alpine ecosystem.

The group members need to assume the role of the plant or animal listed on their card.

In the middle of the room place the symbols, pictures, or words that represent the sun, water, soil, and air and gather the group in a circle around these objects.

Explain to the group that they are going to create an alpine ecosystem web of life.

As the group leader, you will need to explain and demonstrate how the web of life will be created by the string being passed on from one organism to another organism that are dependent upon each other. Hold the ball of string in your hand and tell the group one thing about your plant or animal and what it eats and what might eat it. Unravel the ball of string, holding on to the very end and pass it to the group member who has a card that represents an animal that eats the plant or animal on your card. For example: if you are wearing a card that represents huckleberries, you might pass the ball of string to a ptarmigan. While you are passing the string, you need to verbalize the connection between the huckleberry and the ptarmigan. Now the ptarmigan grabs a corner of the string to symbolize the connection between it and the huckleberry and then has to look around the circle and find another organism that it is dependent upon for life or an organism that eats ptarmigan. The ptarmigan then needs to verbalize this connection as they hand the ball of string to that organism while continuing to hold on to a piece of string.

Continue to play until everyone is holding onto a piece of string. At no point should anyone let go of the string. In some cases, animals and plants will have received the ball of string more than once and therefore are hanging on to more than one section of string.

Time Out for Discussion

Have the group observe the web of connections they have made. Discuss what the web demonstrates about connections in an ecosystem, including the human connection. Have each group member think about one item from the middle of the room-sun, water, soil, air-and then describe one connection they have to this resource. For example, the frog might say, "I need water in which to lay my eggs".

Human Impacts on Ecosystem

Have the leader, one other person, or several people read one of the scenarios below to the group. Have the group discuss the questions at the end of each scenario. As you discuss each scenario, have participants drop their string to show how an impact to one part of the web affects another part. For example, if a camper picks all the wildflowers in one area, what else will disappear (mice, coyote)?

Scenario One

A group of people camp on the edge of an untouched meadow because it is easy to watch wildlife. They stay for many days and leave behind a new rock fire ring, large log benches, and newly worn trails in and around their camp.

- a. How might the scene of their abandoned campsite attract more campers to this area?
- b. If more campers come, how might their presence affect the meadow's community of life?

Answer

- a. People are often attracted to established campsites. The remains of a fire ring, benches, and trails will encourage more people to camp here.
- b. If camping use becomes too heavy, some animals will be driven from the meadow.

A large-scale example of animal displacement can be seen in cities. How many wild animals like to live near people? The deer might want to drop the string.

Scenario Two

Three campers go out for an afternoon hike. They each return to camp with a handful of wildflowers to give to their leader.

Why should wildflowers be left in their natural setting?

How else might the campers share their love for wildflowers or their desire to present their leader with a gift?

Answer

- a. Wildflowers should be kept in their natural setting as food for insects and animals, so the flowers can re-seed themselves for the next growing season, and to allow other visitors the opportunity to view their beauty.
- b. The campers could take their leader to see the flowers, or they could make a drawing to give to their leader. If wildflowers disappear, animals in the web that depend on them are in trouble. They should drop their string.

Scenario Three

A leader asks four young campers to collect wood. The campers use axes to hack at live trees and they also peel bark to help start a fire. a. How might these actions harm the tree? b. What are alternatives to cooking with fire? c. What might be some nighttime activities that could replace an evening around a campfire?

Answer

- a. When bark is hacked or peeled away from a live tree, the tree is wounded. Wounds expose trees to disease and insects which harm or kill trees.
- b. Campers can cook with lightweight stoves rather than campfires, or bring prepared foods.
- c. Learn about the stars; use dark shapes surrounding the campsite to stimulate storytelling; go for a moonlight hike if the moon is bright.

The web is affected if the tree dies, For example, the woodpecker should drop the string.

Scenario Four

You have been hiking all day and stop in a campsite for the night. As you are setting up your tent you notice two tents next to the stream.

- a. How will these campers affect the animals that use this location at night to get their water?
- b. What, if anything, might you do or say to these campers?

Answer

- a. The animals might be too afraid to come down to the river to drink. Also, camping so close to a stream could cause pollution from human waste to enter the river.
- b. This is a difficult question to answer. How will your group respond? Those animals that depend on the stream for drinking water should drop their string.

Wrapping up the Activity- 15 minutes

How well has each person learned to protect natural resources?

- Have participants tell one new behavior they will practice the next time they go camping or hiking.
- Have participants explain how this behavior will support the natural resources (plants, animals, soils.)