

National 4-H Curriculum
BU-08045

Name _____

County _____

Backpacking Expeditions

LEVEL

3



**OUTDOOR ADVENTURES
PROJECT ACTIVITY GUIDE**



REVIEWED & RECOMMENDED
National 4-H Curriculum

Chapter
1

Pack it Up

Outdoor Skill:
Planning and preparation

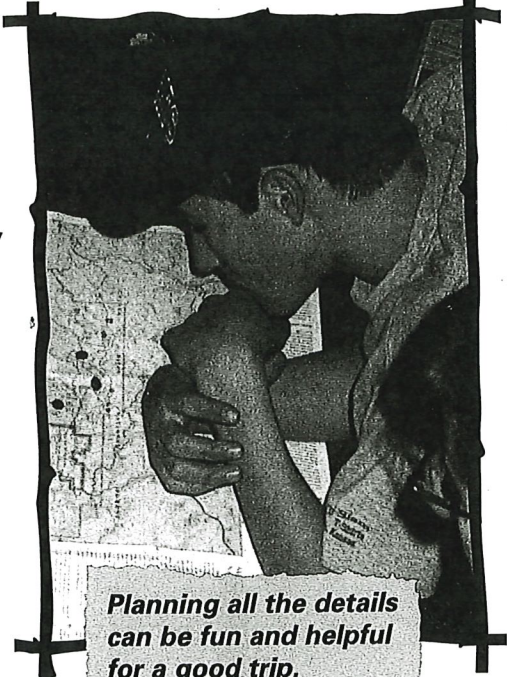
Life Skill:
Planning

Educational Standard:
NPH.K-12.7 Understanding Challenge

Success Indicator:
Plans a backpacking trip.

Planning Your Trip

Any backpacking journey begins with planning! There are many aspects to planning a backpacking trip you'll need to consider before you start your expedition. Before you begin to think about what gear you'll need, what food you'll bring and what you'll use for shelter, you need to decide where you are going to go, who's going with you and how long your trip will be. Get out your maps and hiking guide books and start planning! You'll find great questions to consider in Outdoor Tips.



Planning all the details can be fun and helpful for a good trip.

Get in Gear

Now that you know where you'll go on your backpacking trip, work with your helper to draft an *itinerary* or trip plan.



Did you know?

Land that has a "Wilderness" designation has restrictions that may include: required permit use, limits on group size and prohibition against motor vehicle use. Be sure to follow all land management guidelines while backpacking. These guidelines help to preserve beautiful and unique tracts of land.

Trip Plan	
Who is going?	
What are you doing?	
When are you going?	
Where are you going?	
Why are you going?	
Local Hospital (Name and Phone)	
Emergency Contact Numbers	
Emergency Evacuation Plan	



Talk it Over Share the Experience

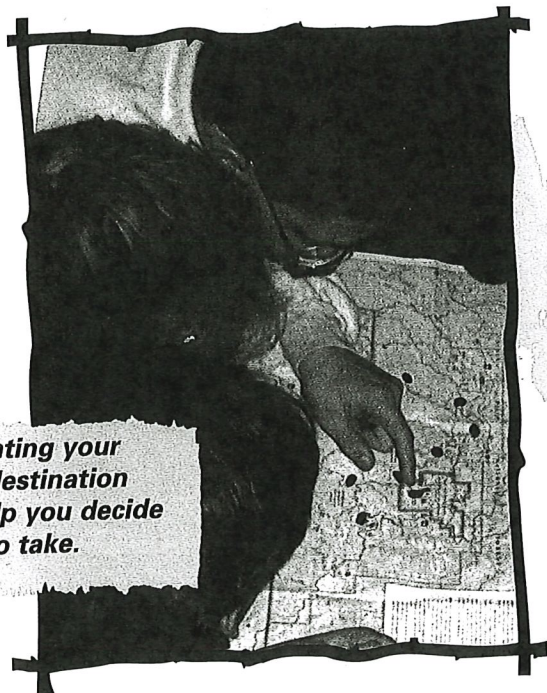
- Why do you think it is important to have a trip plan?

Reflections

- What did you learn while planning your trip?
- What was challenging about planning your backpacking trip?

Now What?

- What did you learn about planning in this activity that you could apply to your daily life?



Pinpointing your exact destination can help you decide what to take.



Planning a Backpacking Trip

Questions to Consider

- Who is going? Include the names of the leaders as well as all of the group members.
- What are you doing? Will you be backpacking the entire time? Will you base camp?
- When are you going? Include times and dates of your departure for your trip and arrival back home, as well as a tentative outline for each day of your trip
- Where are you going? What trails will you be traveling on? Will you be staying at established sites or shelters?
- Why are you going? Is this a trip with your 4-H Outdoor Adventures group? Or with your family? What are your goals?
- Will you hike a loop on your trip? Or will you come back the same way you went in?
- Where will you find water along the way?
- Are shelters available along the trail? Are established tent sites available along the trail?
- Will you be traveling in a designated Wilderness Area? Forest Service Land? National or State Park? Land Management guidelines vary depending on where you are traveling. Be sure to check what the guidelines are before you go!
- Can you find evacuation trails along your route?

Extra Copies of Trip Plan

You'll want to be sure to leave copies with people at home who will know where you are going and when you plan to be back. Keep a copy with your medical forms in the first aid kit.

Glossary Words

• Itinerary



1. Research what you can and cannot do in Forest Service Land, Bureau of Land Management (BLM) lands, State and National Park lands and Wilderness areas.

2. Report to your helper how each of these areas manages land.



The Perfect Fit

Outdoor Skill:
Selecting and adjusting
a backpack

Life Skill:
Personal safety

**Educational
Standard:**
NT.K-12.1 Basic Operations
and Concepts

Success Indicator:
Selects and adjusts a backpack
for an overnight expedition.

You know where you are going on your backpacking trip and you are getting excited! Backpacking requires you to use a larger backpack than you used for day hiking, as you will have a lot more to pack in it. When deciding which backpack will work for you on an overnight or multi-day backpacking trip, you will need to keep several factors in mind, including: chest measurement, weight, type of trip, comfort and fit. What will be a comfortable fit for you?

Get in Gear

To select the right backpack for you, you'll want to make sure you know the most critical measurements. First complete the information asking for these measurements and then estimate how much weight you can carry. Finally at an outfitter or gear rental shop try on a variety of

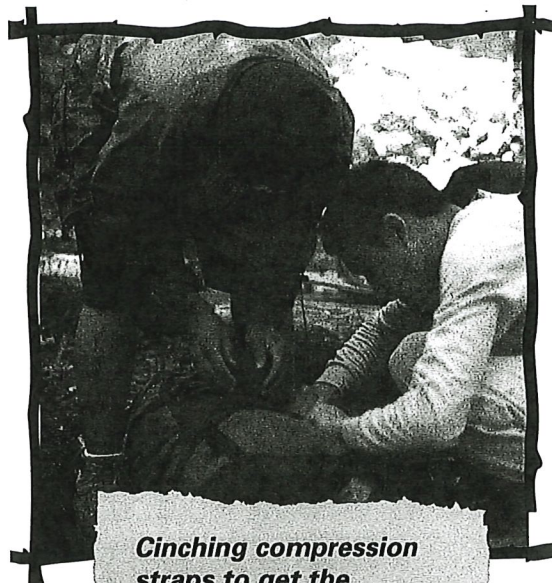
different packs that fit your measurements and the amount of weight you estimated you could carry. Fully describe brand, price, size, comfort level and the features of the backpack you feel will be best for you. Check *Outdoor Tips* for help with measurements and other ideas.

1 Length of Torso _____

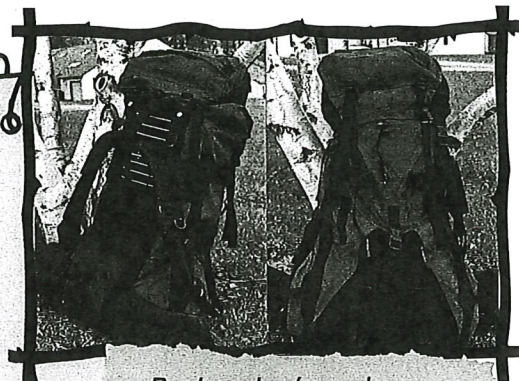
2 Height _____

3 Weight I Can Carry _____

The Ideal Backpack for Me



Cinching compression straps to get the perfect fit.



Backpacker's pack With a cushioned suspension system to adjust pack

Glossary
Words

Torso



Share the Experience

- Describe some of the challenges you experienced when fitting your backpack.

Reflections

- Why is it important to have plenty of information before making decisions?
- If you didn't know how to fit your backpack, how did you figure it out?

Now What?

- What did you learn from the activity that you didn't know before?
- Why is personal safety important in choosing a backpack for your hiking expedition?



Did you know?

A standard brown paper grocery bag has 400 cubic inches of storage, while a backpack may have from 2500 to more than 6000 cubic inches of storage.



Choosing the Right Backpack

Measure your torso length. Although pack brands may differ in size, generally you'll need a small pack if your torso measures less than 18", a medium, if you measure between 18" and 20" and a large if your torso measures longer than 20". To measure your torso, follow the curve of your spine from the bony bump at the back of your neck to the low space between your hipbones. Use a soft tape to measure.

Check those hips. Be sure the hip belt is directly on the crest of the hips, not around the waist. The hip belt needs to fit snugly without slipping.

Take time to select a pack. Use the store to test your backpack. Try to use stairs, bend, sit, etc. with pack on and loaded to determine how comfortably it fits. The longer you test the pack, the better the chance you will like it after you purchase it.

Treat yourself to the best you can afford. Consider renting a pack before you purchase one.

Know your load. What you are going to carry, the approximate weight you will carry, how long you will carry the load, the seasonal and weather conditions during your trip all are important.

Consider the environment in which you will be backpacking—well maintained trails, versus back-country with no amenities.

Think about versatility. Will the pack double as a day-pack? Is it adjustable in length?

Respect your idiosyncrasies. Are you organized? Do you like pockets within reach? Do you want lots of pockets? Do you want a top loading pack? Do you want dividers in the pack?

Plan with your partner(s) and/or your group gear needs in mind? Who will carry what communal items to share the load?

Think drink. Does the pack contain space for hydration bladders, tubes or bottles?



1. Create a video, photo story, poster, or give a talk on how you selected your backpack and made adjustments. Share this information with others in your hiking group, class or with friends and family.

Gathering Group Gear

Outdoor Skill:

Selecting backpacking group gear

Life Skill:

Teamwork and cooperation

Educational Standard:

NPH.K-12.7 Understanding challenge

Success Indicator:

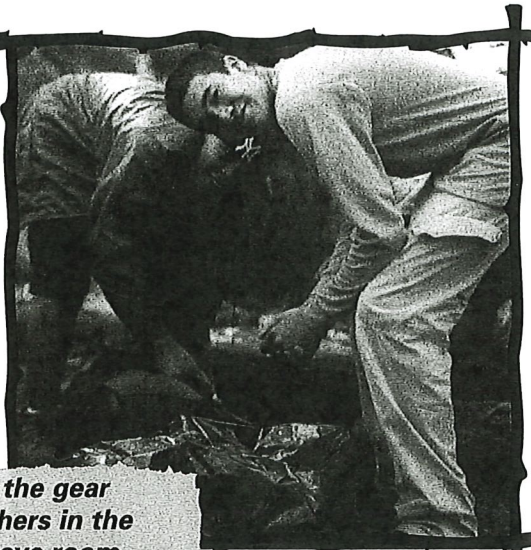
Selects gear for backpacking.

Now that you have your own backpack and probably most of the personal gear you need, what about group gear? What will you need to take that the entire group will share on the backpacking trip?

Get in Gear

In the space provided list the group gear you feel your group will need according to the size of your group. If you have a catalog or access to a catalog online with equipment,

cutting and pasting pictures makes the gear needed more realistic. The choice is yours how you want to show the gear needed. Check *Outdoor Tips* for additional ideas.



Dividing up the gear amongst others in the group can save room in the pack.

Group Gear We Need



Talk it Over

Share the Experience

- How did the number of people in the group affect your decision with group gear?
- Which factors were most important to consider in choosing backpacking gear?
- How do you take safety into consideration when selecting group gear?

Reflections

- How did your choices of backpacking gear differ from the choices you made selecting gear for base camping?
- How is the person selecting group gear responsible to the group?

Now What?

- How can you apply the group gear selection activity to your daily responsibilities?
- How prepared are you to choose the right gear and appropriate quantity for your backpacking expedition?



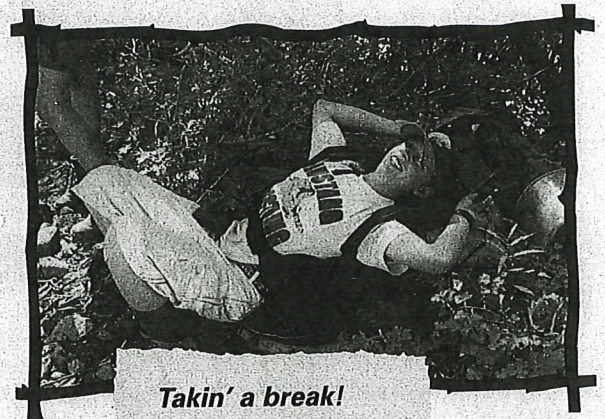
Group Gear Check List

Tent Group

- 2-3 person tent
- Sleeping bag
- Sleeping pad
- Trowel and toilet paper
- Hand sanitizer
- Tarp (optional)
- Rope
- Extra tent stakes
- First aid kit

Cook Group

- 4 qt. pot & lid
- 2 qt. pot & lid
- Frying pan
- Pocket knives
- Serving spoon
- Spatula
- Scouring pad
- Biodegradable soap
- Trash bags/re-sealable bags (1 qt. and 1 gal. size)
- Water purification system
- Backpacking, single burner stove/fuel



Takin' a break!



1. Discuss weight issues with gear for backpacking.
2. Pack a backpack with some heavy base camping gear and discuss why you would not take it backpacking.
3. See if you can discover any alternatives to backpacking gear. What are some new technologies that will allow you to "go light"?

Tent Tactics

Outdoor Skill:
Selecting backpacking group gear

Life Skill:
Critical thinking/decision making

Educational Standard:
NT.K-12.1 Basic Operations and Concepts

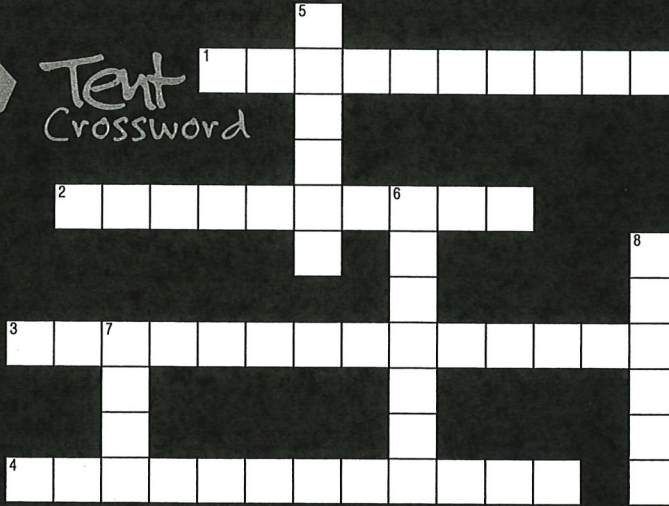
Success Indicator:
Selects a backpacking tent.

To enjoy your backpacking trip, you need a comfortable shelter. It provides protection from snow, wind, rain and sun. Therefore, knowing the advantages and disadvantages of different backpacking tents is important to fit your personal needs, comfort and security. If you are purchasing a tent, choose wisely so you pick one that will last a long time.

Get in Gear

Complete the crossword puzzle on types of backpacking tents. Then create a check list of criteria for backpacking tent selection. Use the check list to determine the tent that best fits your needs.

Tent Crossword



Across

1. Includes a tent and a rain fly
2. Includes only a tent
3. Similar to 2 down with an extra pole in the middle
4. Doesn't require stakes

Down

5. Also known as a hoop tent
6. Also known as a pup tent
7. Rounded in shape
8. Used historically by American Plains Indians

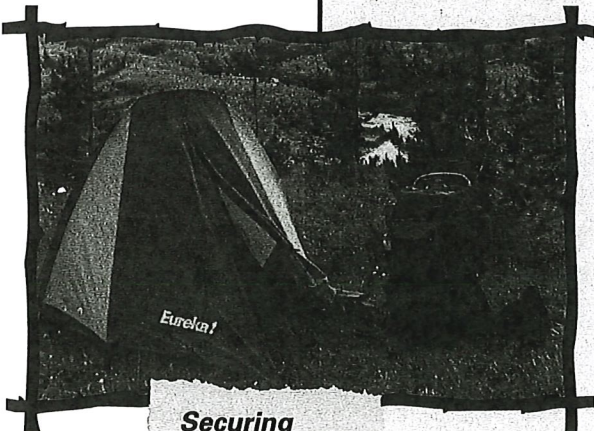


Did you know?

A backpacking tent should weigh three pounds or less per person.

2

Criteria for choosing a backpacking tent



Securing the tent fly.



Talk it Over

Share the Experience

- What type of non-tent backpacking shelter do you like best and why?
- What did you learn about selecting backpacking shelters?

Reflections

- What is important to know when selecting a tent?
- Describe how backpacking tents differ from base camping tents.

Now What?

- Why is good tent pitching and striking important?



- Use past tent sites rather than new spots.
- Never dig a trench around the tent.

Glossary Words

- Guy line
- Pitch
- Strike
- Vestibule

Acknowledgement: Activity written by Nancy Franz.



Selecting a Backpacking Tent

You may want to consider the following when selecting your backpacking tent. For tent striking and pitching tips check the Outdoor Adventures website.

Tent Styles

- A-frame/pup (requires stakes, stable, poor in wind)
- Modified A-frame (has a center hoop pole)
- Dome (arched, heavier from multiple poles, strong in wind, rain, & snow, freestanding, roomy, stable)
- Tunnel/Hoop (like a covered wagon, light weight, easy set up, poor in wind)
- Pyramid/teepee (floorless, only a fly and pole)
- Free standing (no stakes, easy to set up, poor in wind)
- Single wall (no rain fly)
- Double wall (tent with breathable wall and rain fly)

Characteristics to Consider

- Subtle colors to blend in with the environment
- Weight
- Camping environment (rocky ground, soft surfaces, high elevations, strong winds, etc.)

- Weather (three-season or four-season use)
- Pitching ease (stakes, poles, guy lines, pullouts, rain fly, free standing)
- Size/height
- Poles (fiberglass or aluminum)
- Staking
- Doors
- Vestibules
- Warranty/guarantee (materials and construction)
- Rain fly (snug, extends to ground and away from tent)
- Ventilation
- Ease of care
- Pole clips or sleeves
- Cost
- Insect protection
- Construction/fabric (seams, reinforcement, durability)
- Design
- Other features (gear attic, pockets, etc.)
- Waterproofing
- Flame retardancy
- Door location and number
- Zippers (two way, coated)
- Stakes (weight, durability)



1. Create a tent repair kit.
2. Research natural and human-made shelters used by different cultures for camping and living before tents were manufactured.
3. Look at advertisements for tents. Determine what criteria tent manufacturers use to sell their tents.
4. Create a poster or checklist of tent directions for pitching, striking and caring for tents.
5. Show others how to pitch and take down a variety of tents. Create a tent selection guide for others.



Sleeping Lightly

Outdoor Skill:
Selecting and designing non-tent shelters for backpacking

Life Skill:
Creative thinking

Educational Standard:
NT.K-12.1 Basic Operations and Concepts

Success Indicator:
Designs a non-tent backpacking shelter.

Maybe you are the kind of backpacker that prefers to "go light" when it comes to camping shelters. As you look over your maps and goals for your next backpacking expedition are there any backcountry shelters available for your use so you can lighten your load and cover more miles? In this activity you'll explore various types of non-tent shelters to help you determine which type best fits your backpacking needs.

Get in Gear

List the advantages and disadvantages of backcountry shelters. Then draw in the space provided the non-tent shelter that best fits your backpacking preferences and needs.

Type of Shelter	Advantages	Disadvantages
Tarp		
Tube Tent		
Wings/paraflys		
Bivouac		
Mesh		
Survival Blanket or Shelter		
Sunshade		
Rain Poncho with Grommets		
Tarp Tent with mesh doors		
Backcountry Shelters*		
Fixed Trail Shelters		

*Backcountry shelters - Some areas of the country offer back-country wooden or stone shelters. Many of these are located on the trail and may be either three-sided or four-sided structures.



Did you know?

The Appalachian Trail runs from Springer Mountain in Georgia to Mount Katadin in Maine—a total of over 2,000 miles. Many hikers take a full six months to complete the trail.

Share the Experience

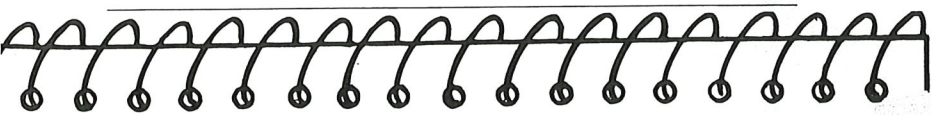
- What are the most important characteristics in selecting or designing a non-tent backpacking shelter?
- What are the benefits and disadvantages of not using a tent when backpacking?

Reflections

- What did you learn by designing your own shelter?
- Why is it important to know about non-tent backpacking shelters?
- How does selecting the best shelter for your backpacking needs help you make other camping decisions?

Now What?

- What other camping equipment would you like to design and why?
- How will you use what you've learned in this activity?



My Shelter Design



Choosing Non-tent Backpacking Shelters

- Weight
- Color
- Size
- Insect protection
- Weather
- Environment
- Fabric
- Loops/holes for stakes, guy lines or poles

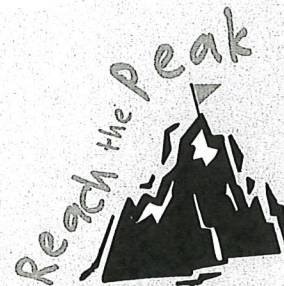


Tarp Shelters

Shelter Tips

- Hiking poles or sticks can support a tarp or wing rather than trees.
- Carry extra guy lines and stakes for extra support.
- Set up a tarp close to the ground for protection from weather and high for cooking.

Tarp Advantages and Disadvantages



1. Create a non-tent backpacking shelter based on your own design.
2. Visit a camping store and examine a variety of non-tent backpacking shelters.
3. Sleep without a shelter under the stars and compare it with sleeping in a shelter.



Share the Experience

- Which items surprised you by how heavy or light they were?
- How accurate were your predictions for the weight of items?

Reflections

- How will knowing the weight of common food items help you to plan your menu for an extended trip?
- How can you make healthy meals and snacks that are also cost effective?

Now What?

- What are other times in your life that you have had to plan things?



Did you know?

A person should plan on packing 1.5–2.5 pounds of food for each day.

Acknowledgement: Activity written by Elizabeth Sparks.



Backpacking Food Item Requirements

Easy to Prepare - Meals that take a long time to cook or require many pots and pans are difficult to make in a back-country setting.

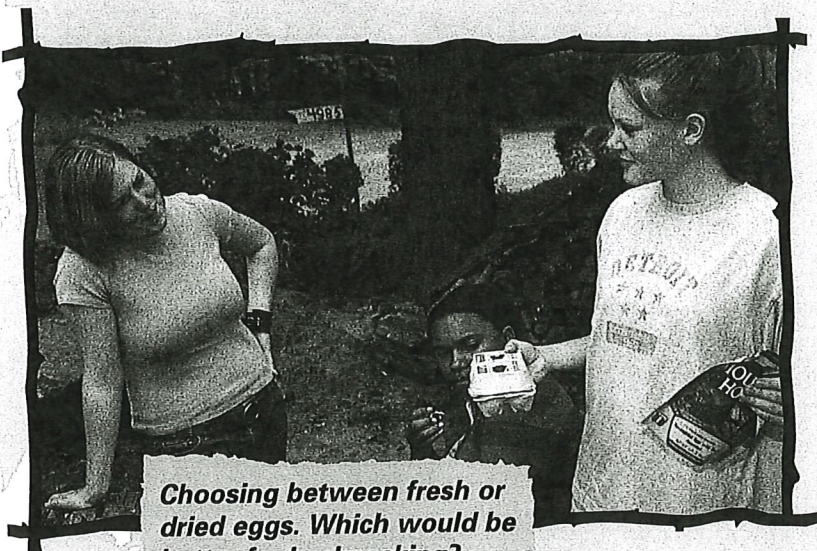
Cost Effective - Camping stores sell lots of dehydrated foods that are easy to carry, healthy and taste good, however, these products can be very expensive.

Nonperishable - When backpacking, you will not necessarily be able to keep food cold. A good rule of thumb is that if you keep it in the fridge at home, you probably shouldn't take it backpacking.

Healthy - Food is where you will be getting your energy to hike. If you plan on taking things from each of the four food groups you will be optimizing your fuel options.

Delicious - You will need your energy, so make sure your food is delicious. This will ensure that you eat all of the food that you are carrying and help to prevent food waste.

Repackaging - Remember if you pack it in, you'll have to pack it out! It is a good idea to take food out of bulky wrappers and packaging and repackage it in zip lock bags.



Choosing between fresh or dried eggs. Which would be better for backpacking?



1. Teach another group member about menu planning for backpacking trips.
2. Research new recipes to cook at home or on the trail.

Food for Thought

Outdoor Skill:
Planning food supplies
for a backpacking trip

Life Skill:
Problem solving

**Educational
Standard:**
NPH.K-12.5 Responsible
Behavior

Success Indicator:
Plans a menu for a
backpacking trip.

In the last activity you learned that meals should be healthy, easy to prepare, inexpensive, lightweight and delicious. Think about the foods you enjoy eating at home. Which meals are easy to prepare, lightweight and well balanced? Which of these favorite foods could you adapt to take with you on the trail?

Get in Gear

In the space below plan the food for your hiking group or family. Check Outdoor Tips for a sample menu plan. *Bon Appetit!*



Another delicious meal after a long day of hiking.



	Day One	Day Two	Day Three
Breakfast			
Lunch			
Dinner			
Snacks			

Talk it Over

Share the Experience

- What strategy did you use to decide what to bring?
- How did you reach group agreement on certain foods or meals?

Reflections

- What are some strategies for group decision making?
- How might you make compromises?

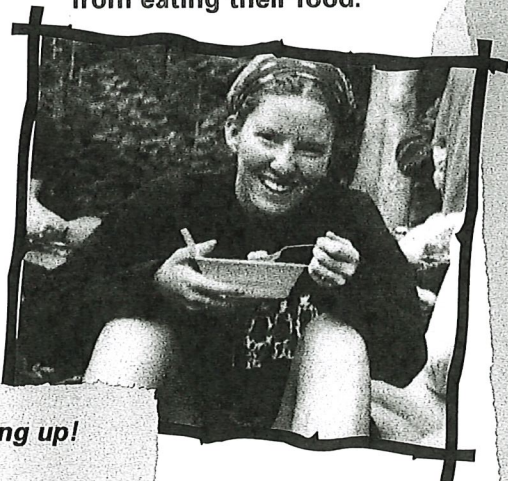
Now What?

- How will you use your back-country menu planning skills at home?



Did you know?

Many hikers hang their food in "bear bags" even in areas where there may not be any bears. They are preventing "mini bears" (mice, raccoons, squirrel and porcupines etc.) from eating their food.



Fueling up!

Acknowledgement: Written by Elizabeth Sparks and Josina Fluehr-Lobban.



Sample Menu Plan

	Day One	Day Two	Day Three
Breakfast	Grilled bagels and cream cheese, tea	Granola and powdered milk	Powdered eggs scrambler and bagels
Lunch	Pita bread, peanut butter and jelly, apple and GORP	Bagels with cheese or peanut butter, apple and energy bar	Tortillas, cheese, pepperoni, carrots and granola bar
Dinner	Burritos—tortillas, dried beans, veggies, cheese and salsa	Spanish rice or couscous, veggies and cheese	Macaroni and cheese
Snacks	Chocolate cookies	Granola bar or fruit	Pudding

Additional Resources

For more information on backcountry meal planning check out:

- * *NOLS Cookery*, by Claudia Pearson
- * *Allen and Mike's Really Cool Back Packin' Book: Traveling and Camping Skills for a Wilderness Environment* by Allen O'Bannon, Falcon Publishing, 2001.



1. Add a little spice to your life! Assemble a spice kit to take on your backpacking expedition.

Use re-sealable bags to pour small amounts of your favorite spices: Salt and pepper, chili powder, cinnamon, oregano, basil and cumin.... A few extra spices can make a bland meal—delicious!

2. Make GORP (Good Old Raisins and Peanuts) This is a traditional trail food for many hikers. To make this trail mix, gather some of your favorite dried fruits, nuts, cereals or salty snacks. Pour all of the ingredients into one bowl and mix together. Put smaller amounts of the mixture in recloseable plastic bags. Some suggestions for your trail mix: Raisins, peanuts, dried cranberries, dried bananas, cashews, almonds, sesame sticks, pretzels, yogurt covered raisins and peanuts, chocolate covered raisins or cereals... Be creative!

Share the Load

Outdoor Skill:
Accepting campsite responsibilities

Life Skill:
Sharing responsibilities

Educational Standard:
NPH.K-12.6 Respect for Others

Success Indicator:
Shares responsibilities for specific campsite tasks.

You and your hiking group or family arrive at your campsite destination for the night. You've shared a long day on the trail, some good challenges and amazing views! Though you may feel ready to take it easy, you still have work to do. Kick off your boots, put on your camp shoes and get ready to help with some campsite chores.

Get in Gear

Based on your experience with base camping, brainstorm a list of camp chores you think you'll need to accomplish when you arrive at your back-country camp site. Use

the space provided to write your list. Before you head out on your backpacking expedition, practice these chores in your backyard or an open space. You never know if you may be doing one or more of these chores in the dark or in the rain!



Sharing the load on a rough trail.



Camping Chores



Who's Responsible



Share the Experience

- What did you include on your list of chores?
- How were your experiences with base camping helpful in creating this list of backpacking tasks?

Reflections

- What other methods of choosing tasks could you and your group use?
- Why is it important that everyone know how to do all of the chores?
- What happens when one of your group members does not do a task, or does not do it correctly?

Now What?

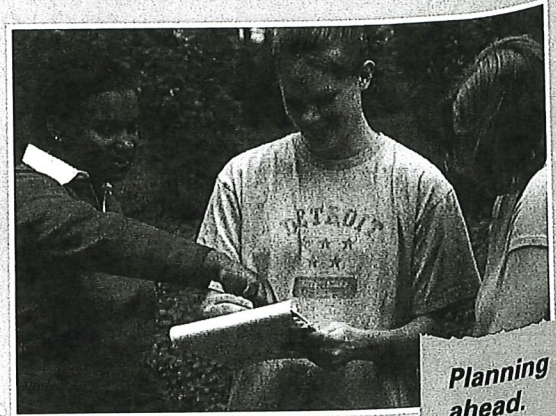
- In what ways is a backpacking group like a school team? Sport team?



Sharing Responsibilities

Sharing camp responsibilities is a great way to build a team and increase cooperation within your group. You will learn that you depend on the group and in turn the group depends on you. Each person exhibits leadership when they cooperate and contribute to achieving the group's goals. You can help the group avoid pitfalls and work to promote group harmony.

In a small group, decisions made will involve all members. This will promote creativity, cooperation and maximum use of expertise within the group. Shared leadership implies shared responsibility. Each member must be willing to help decide what is needed, provide information, abilities, encouragement, etc. to be successful.



Planning ahead.

Delegating Responsibility

Once you have identified the chores that need to be done decide who will take responsibility for each of the jobs. Some people may have more than one. It takes everyone working together to get the camp site ready. When you work together you will have a feeling of success and fellowship with the others in your group.



1. Go to a camp site and identify specific areas: sleeping, cooking, waste, food storage, water, etc. Set up camp.
2. Develop and conduct three activities that you can do at the camp site once it is set up.

Chapter
3

Naturally Notable

Leave No Trace in Your Place

Imagine the cold and icy temperatures of the arctic tundra and the sweltering heat of the desert. Would you use the same low-impact camping techniques for these different regions? Would you take the same items on a trip to Arizona as you would to Alaska or Maine? While the seven LNT principles stay the same no matter where you go, how you put them to use changes from region to region. In this activity, you will learn about different *biomes*—environments that share similar features, such as climate and vegetation and how to alter your practices for different geographical regions.

Get in Gear

Review the Leave No Trace principles. Fill in the chart with ways in which you might adapt the LNT principles according to specific environmental concerns. Develop a list of techniques that are unique to that region, following the seven LNT principles. Take a trip to a local outdoor shop for reference materials or check out websites to assist you in your research.

Outdoor Skill:
Adapting Leave No Trace to different environments

Life Skill:
Critical thinking and research skills

Educational Standard:
NPH.K-12.7 Understanding Challenge

Success Indicator:
Researches various environments.



LNT: Always clean up your fire pit.

Glossary Words

- **Cryptobiotic crust**
- **Biome**
- **Decomposition**

LNT Principles	Arctic and alpine tundra	Desert	Snow and Ice	Coasts Rivers and Lakes	Wetlands
Plan ahead and prepare					
Travel & camp on durable surfaces					
Dispose of waste properly					
Leave what you find					
Minimize campfire impacts					
Respect wildlife					
Be considerate of other visitors					



Did you know?

It can take up to 100 years before a high meadow recovers from one season of off-trail foot traffic?



Share the Experience

- What did you learn about the environment you studied?
- What did you learn about adapting Leave No Trace techniques for specific environments?
- What was the most interesting new technique you learned?

Reflections

- Why is it important to know how to act in different environments?
- How will learning about these environments help you to think about and decide what kind of equipment to bring?

Now What?

- What aspects of the environment would help you decide what items to bring?

Outdoor



Environments and Backpacking

Deserts - Water is scarce and plants grow slowly in the desert. Stepping on *cryptobiotic crust* may cause damage that takes decades to restore. Don't use wood for fires in the desert. Take a camp-stove for cooking. Take only the water you need from a source. Leave the rest for the native animals. Pack out all human waste—*decomposition* is very slow in a hot, dry desert.

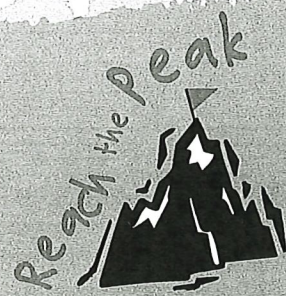
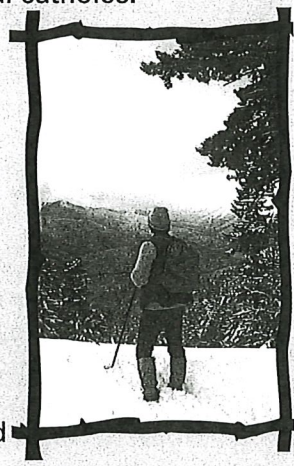
Arctic and Alpine Tundra – Arctic and Alpine environments are actually quite similar to deserts. Both areas receive very little rainfall annually. The arctic and tundra have very short growing periods, making rejuvenation difficult. Always stay on trails if they exist (animal trails are great to follow). Place your tent and cook area on talus or snow to reduce your impact on the tundra. Weather conditions can turn quickly—always plan well ahead and bring extra supplies. Avoid using group latrines—wastes will decompose faster in individual catholes.

Snow and Ice – Camping on snow and ice require lots of planning and experience. Always pack out all human waste and garbage. Avoid disturbing areas important to wildlife such as dens with hibernating animals or areas that serve as winter feeding grounds.

Coasts, Rivers and Lakes – Camp on the shore above the high water mark. Never bury human waste or litter in the sand—packing it out is best. If you cannot pack out human wastes, scatter it close to the tideline where it will be washed away and will decompose.

Wetlands - Camping on wetlands also requires planning. Avoid disturbing wildlife. Realize you may need to sleep in a boat if you have trouble finding the shoreline or any ground dry enough to camp on. Pack out all human waste.

Forests – Rich with life, forests support a wide variety of plants, animals and decomposers! Generally speaking, forests will receive a good deal of rainfall annually. This allows for a rapid rate of growth and regeneration, as well as decomposition. Bury human waste in catholes, approximately 6–8 inches deep. Any time you find an established waste disposal site, use it! Pack out all food waste and trash.



1. What nations around the world are characterized by the five different environments, or biomes, you just learned about? Make a list of those places to be included in your activity guide.
2. Develop your activity guide and raise some funds to print out multiple copies and distribute it at a ranger station, local outdoor club or store. Develop a website that lists this information.

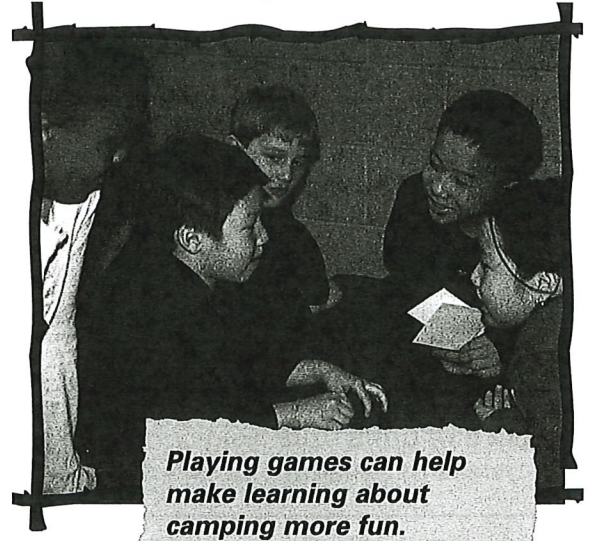
Fun with Backpacking Pyramid

Outdoor Skill:
Learning outdoor adventures-related terms

Life Skill:
Communicating creatively

Success Indicator:
Identifies and describes outdoor words.

Are you the backpacker who others look to to involve them in a fun game when you are on a backpacking expedition or at a project meeting? As an experienced outdoor enthusiast Outdoor Pyramid may be just the game to establish your reputation as a gamer. This game is fun for all ages and helps develop communication skills as well as help everyone learn more about backpacking and the environment.



Get in Gear

The idea of this game is to announce a general category, then describe a word in that category until the person identifies the word being described. For example if the category is "Items to Pack in a Backpack" and one of the items is "Compass", the clue giver might say "Round". The guesser might say "canteen". Since canteen is not the word being described, the clue giver would continue giving clues such as "North", "South", "Needle", "Direction" until "Compass" is guessed. The same process is repeated until all words are guessed or time is called. One or two word clues should be given.

To prepare for Outdoor Pyramid you'll want to develop several note cards with the category on one side and the words associated with that category on the other side of each card. In the space below list a category and at least six words that relate to that category on the cards outlined. By making additional sets of these note cards several pairs can play at one time. Additional examples of categories and words are included in Outdoor Tips.

Category _____
Words 1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Category _____
Words 1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Category _____
Words 1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Category _____
Words 1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Category _____
Words 1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Category _____
Words 1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



Share the Experience

- How did you feel about this game?
- What did you learn about giving clues?
- What part of the game was most difficult for you?
- What types of communications worked best?

Reflections

- What did you discover about leading games?
- What did you learn about communicating with others?

Now What?

- What did you learn about communicating that will help you in future situations?



Outdoor Adventures Pyramid Categories

Leave No Trace Principles:

Leave what you find, be considerate of other visitors, plan ahead and prepare, travel and camp on durable surfaces, dispose of waste properly, respect wildlife

Parts of a Compass: Index line, orienting arrow, magnetic needle, base plate, graduated dial, magnifying lens

Animals in the Wild: Bear, fox, cougar, mouse, badger, wolf, deer, elk, moose

Food for the Trail: Peanut butter, cheese, jerky, canned tuna, crackers, pasta, apple

Camp Site Duties: Set up tents, find water source, clean camp stove, wash dishes, establish latrine, collect firewood

Group Camping Gear: Sleeping pad, trowel, toilet paper, rope, frying pan, serving spoon, stove, hand sanitizer

Types of Tents: A-frame, modified A-frame, dome, tunnel, teepee, free standing, single wall, double wall

Message for Help: Name, location, time of incident, what happened, what is wrong, treatment provided

Items in a Backpack:

Binoculars, cell phone, food, rope, water, whistle, duct tape, cooking gear, camera

Types of Fabrics: Wool, cotton, down, fleece, polypropylene, nylon

First Aid Kit Items: Gloves, CPR mask, gauze pads, ACE bandage, cravat, tweezers, moleskin, scissors, antacid, risk management plan

Tree Species: Oak, Birch, Maple, Douglas Fir, Noble Fir, Spruce

Camping Knots: Square knot, timber hitch, clover hitch, bowline, sheepshank, sheet bend, half hitch

Outdoor Parasites: Mosquitoes, chiggers, black flies, deer flies, no seeums, yellow jacket, wasp

Outdoor Adventure Activities: Rock climbing, hiking, camping, canoeing, orienteering, tubing, fishing, swimming, motor boating, whitewater rafting, rowing, water skiing, cycling, backpacking, trail riding, outdoor cooking

Careers Associated with the Outdoors: Researcher, teacher, guide, forest ranger, fire fighter, park ranger, camp counselor



1. **Reverse the game and play "Here's the Answer—What's the Category?"** Instead of being given the category and trying to figure out the words, the clue givers are given a category and have to think of word clues that will allow the receiving team to guess the category. **What is it? Tree Species.**

2. **The receiving team would try to guess this category based on the clues given such as First Aid Kit, Compass, Food.**

3. **Develop new categories and conduct a game show for another group of youth and/or adults.**



Talk it Over

Share the Experience

- What type of exercise activity did you do?
- How did you feel physically after exercising for ten minutes?

Reflections

- What did you learn about yourself during this activity?
- Why is it important to maintain your Target Heart Rate when you train for backpacking?

Now What?

- Why is it important to be physically fit?
- What advice about fitness would you give someone who wants to be involved in an extended backpacking trip?



Glossary Words

- Heart rate
- Target Heart Rate
- Aerobic exercise
- Anaerobic exercise



Training for a Backpacking Trip

An extended backpacking trek is physically, mentally and emotionally demanding. Each person may carry a 35 to 50 lb. pack while hiking 5 to 10 miles per day. Getting in shape is important so you can better enjoy your trek, go farther and not feel as if you are working so hard.

Physical Exam: Backpacking is all about breathing deeply and moving those legs, so you need to develop a program of regular *aerobic exercise* starting two to three months before your planned expedition. As with any other sport or physical activity, you should see your doctor and get a physical examination before starting any conditioning program.

Hike and Backpack: The best way to train for a backpacking trip is to hike and backpack—walk with a load on your back. Start with short, easy hikes while carrying a light backpack load. As your training hike feels easier, begin to challenge yourself. Gradually increase the length and speed of your walk as well as the weight in your pack. Remember to increase only one factor—speed, duration or weight—at a time.

Aerobic Exercise: You can use other forms of aerobic exercises such as swimming, bicycling, walking, jogging, and hiking uphill or up flights of stairs can be used to supplement your training. Start slowly and gradually increase the amount of time you exercise. Remember, your goal is to exercise at your *Target Heart Rate* for 30 minutes, at least three times a week.



1. Visit a training center or gym and meet with a health or fitness professional to learn more about body conditioning.

2. Conduct an educational workshop/program on fitness and conditioning for other youth and adults who are interested in backpacking.

3. Check the web site to learn more about how to measure your target heart rate.

Finding Your Way

Outdoor Skill:
Use a map and compass to find your way on the trail.

Life Skill:
Self-responsibility

Educational Standard:
NT.K-12.6 Technology
Problem-Solving and
Decision-Making Tools

Success Indicator:
Uses triangulation to find a location.

To find your way or pinpoint your location in the backcountry quickly and accurately, you need both a topographic map and a compass. You can use the map to determine your location and plan your route, and the compass for following the bearings you take on the map or in the field. See if you can “read the land” using a topographic map.

Get in Gear

How many different features can you identify on the map by matching the topographic symbols to the corresponding topographic map. Complete the map and compass activity described in *Outdoor Tips* on page 29. Good luck!

Topographic Symbols



Hospital



Church



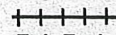
Camping



Picnic Area



Airport



Train Tracks



School



Building



Trail



Unpaved Road



Paved Road



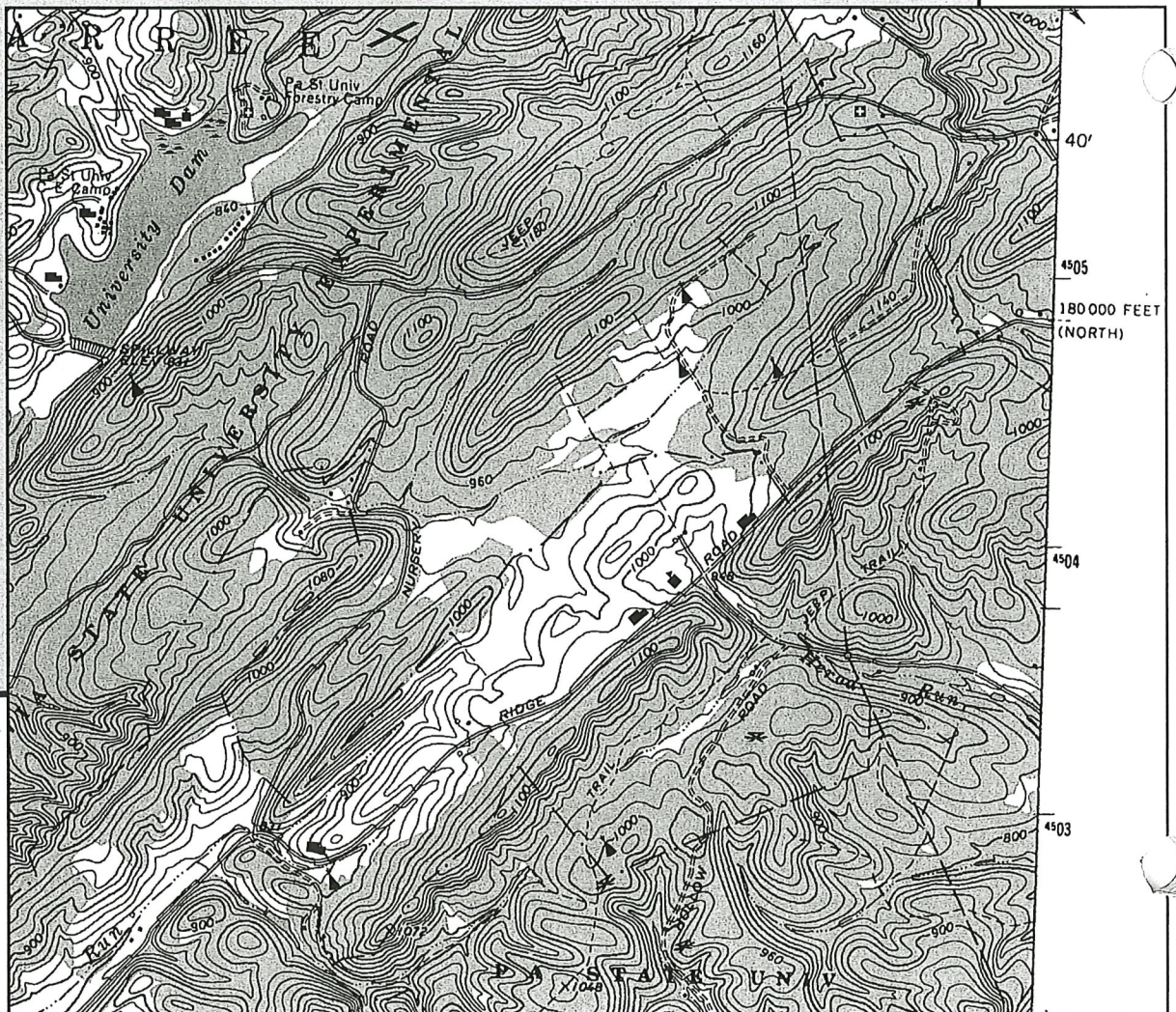
Lake



River



Swamp



Most hikers call topographical maps “topo” maps, for short.



Share the Experience

- What was the most fun and challenging about doing this activity?
- How successful were you combining a map and a compass?

Reflections

- Why is it important to be able to use a map and a compass?
- Besides hiking and backpacking, where else might people use a map and compass together?

Now What?

- How could you use your knowledge of map and compass on a day-hike or camping trip?
- How could you use your map and compass if you were lost?

Glossary Words

- **Contour Line** • **Declination**
- **Magnetic Needle**
- **Magnetic North**
- **Orienting Arrow**
- **Orienting Lines** • **Scale**
- **Topographic Map**
- **Triangulation** • **True North**



Using a Map and Compass

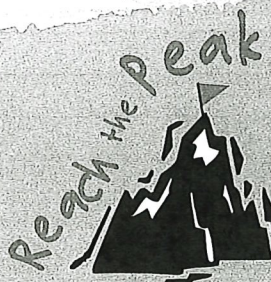
Obtain a *topographic map* of an area in your community that is used for hiking and camping. Head over to this area to learn how to orient your map, set a route, and how to use *triangulation* to find your location.

- 1. Orienting the Map.** Begin by turning your map so that the terrain features line up with the features on your topographic map. This is known as orienting the map. To orient the map to true north, place it on a flat surface, set your compass direction of travel arrow on N, and place the compass parallel to one of the side margins of your map, hold the map and compass steady and rotate both until the *magnetic needle* lines up inside the *orienting arrow* of your compass.
- 2. Finding North.** Look at the bottom of your topographic map. If the *Magnetic North (MN)* arrow on the map magnetic declination diagram is to the right of the true north line, subtract the MN value. If the arrow is to the left of the line, add the value. Then, standing on your location on the ground, set the compass so that "zero degrees or North" aligns with the magnetic north needle, read the magnetic bearing that you have determined by this procedure, and head off in the direction of this bearing to reach your destination.

- 3. Following a Bearing.** If you can see a location you would like to travel to, take a compass bearing to it and then follow this bearing. Even if you can see your desired location when you start, you should still take a bearing. Other obstruction such as trees and hills may block your sight later.

If you can not see the location you would like to travel to, but know your position on the map, place your compass on your position on the map and take a bearing to your objective. Now follow this bearing.

- 4. Finding Your Location.** Now, imagine that you are not sure of your exact location on the map. You can find it by using your compass. Select two or preferably three prominent land features you can see in front of you and that you can identify on the map. Take a compass bearing to each of these features. Next find the backbearings of these features. These are the bearings from the features back to your position. You do this by adding or subtracting 180° to the bearing you took. The backbearing would be the same as the bearing you took plus 180° if the bearing is less than 180° , or minus 180° if it is more. Draw the backbearings on your map. Your position will be where they cross.



1. Draw a map of your routes to school. Include landmarks, road names, etc. Compare your maps to a street map of your community or a topographic map of the area. How accurate do you think your map is?

2. Examine different types of maps that exist (road maps, street maps, weather maps, etc. Discuss how these maps are similar, how they are different and how they are used.



Sending a Message for Help

Outdoor Skill:
Emergency procedures in remote areas.

Life Skill:
Problem solving

Educational Standard:
NL-ENG.K-12.12 Applying Language Skills

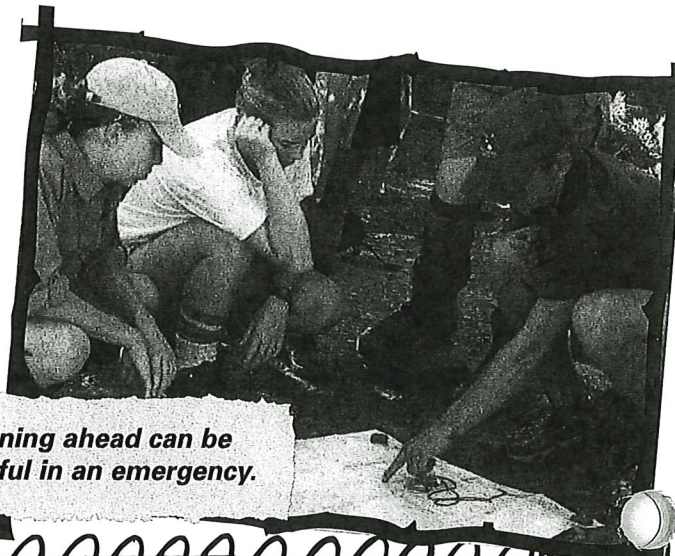
Success Indicator:
Sends a team for help in an emergency situation.

Did you know that inexperience and lack of preparation are the most common factors contributing to emergencies in the backcountry? With proper preparation and training a group traveling in the backcountry can have the knowledge and skills to deal with an emergency. Being able to cope with the unexpected will help you and your group avoid a hasty and wrong response to an emergency situation.

Get in Gear

After you have drafted your trip plan, find the topo map for your backpacking trip. List the specific medical

information on the back of your map in the space below that should be provided to medical personnel in the event of an emergency. This information will make it easy to locate you in the event of an emergency.



Planning ahead can be helpful in an emergency.

Name of the sick or injured person _____

Exact location – mark the location on the map with an X and describe it in detail on the back of the map.

Time of incident – how long the condition has persisted. _____

Exactly what happened. _____

What is wrong – describe all symptoms and conditions in detail.

Example, is patient cold, hot; conscious, unconscious; pale, flushed; breathing quickly, slowly, deeply, shallowly; pulse rate; bleeding? The more information you provide the better.

Treatment provided thus far. _____

Anything else that may seem important.



Share the Experience

- What did you learn about emergency situations?
- Why is it important to know how to deal with emergencies in the backcountry?

Reflections

- What would you do first in an emergency situation?

Now What?

- How could you use your knowledge of what to do in an emergency situation on a day-hike or camping trip with your family?
- What other types of activities are you involved with that might require the knowledge and skills you have learned?

See page 34 for what you should have in a Backcountry First Aid Kit.

Acknowledgement: Activity written by Mike Klumpp, Boy Scouts of America.

The Backcountry Classroom, by Jack K. Drury and Bruce F. Bonney.



Dealing with a Medical Situation

Accustomed to the convenient environments where you live and work you may not be prepared for an emergency in the outdoors. By being prepared and acquiring the skills necessary to deal with an emergency you can handle those situations if they arise.



Learning the skills of first aid helps you be prepared.

Positive Mental Attitude. A positive mental attitude is of the utmost importance in dealing with a patient in a medical emergency. You will transmit your attitude to the sick or injured individual. If you remain positive, you will help relieve the person's anxiety. When people relax, their breathing slows down and they tend to lose less blood, feel less pain and suffer less shock.

Seeking Help. You need four people to go for help. If one gets hurt, one can stay with the injured person and the other two can continue. Rescuers should feel confident in their map and compass skills. Those going for help should have a map and compass, water, rain gear, emergency food, first aid kit, and the medical information about the patient in need of care.

Late Day Injuries. In the backcountry many accidents occur late in the day. Fatigue, mild dehydration and altitude effects may impair a person's performance and judgment.



1. Organize an American Red Cross Basic First Aid or CPR Class for your group.

2. Take a Wilderness First Responder Class/Course.

3. Have a Medical Professional visit your club.



Glossary

A

Active heart rate

The number of times your heart beats while you are exercising.

Aerobic exercise

Any activity involving large muscles, done for an extended period of time. Examples of aerobic exercise include walking, biking, jogging, swimming, aerobic classes and cross-country skiing.

Anaerobic exercise

Refers to resistance training. Anaerobic exercise is done primarily for increased muscle mass. Weight training is a form of anaerobic exercise.

B

Base plate

Rectangular plate on which the compass housing is mounted.

Bearing

A direction of travel stated in compass degrees, relative to North.

Biodegradable

An item that will naturally break down.

Biome

A large region of land characterized by a similar environment, climate and vegetation.

Biomes include: deserts, grasslands, tropical forests, temperate forests, glaciers.

C

Cardinal directions

The four principle directions on a compass: North, East, South, and West.

Compass

Instrument for determining directions with the help of a strip of magnetized steel swinging on a pivot.

Compass housing

The part of the compass that "houses" the needle; on orienteering compasses, it is liquid-filled and turnable.

Contour Line

On a topographic map, used to represent elevation (height above sea level). The key at the bottom of the map includes the scale of each contour line.

Cryptobiotic crust

Found in the high desert, this soil provides a seedbed for the desert plant community and serves as a sponge, retaining precious moisture.

D

Decomposition

The rate at which natural organic objects will break down and return to the soil.

Direction of travel arrow

Arrow printed on the base plate on the outside of the compass housing. When the compass is oriented properly, this arrow points in the direction you travel.

Declination

The angle between the North the compass needle points to and the True North line. This declination is often included on map keys and varies depending on location.

G

Grommets

Metal ring to attach guy lines.

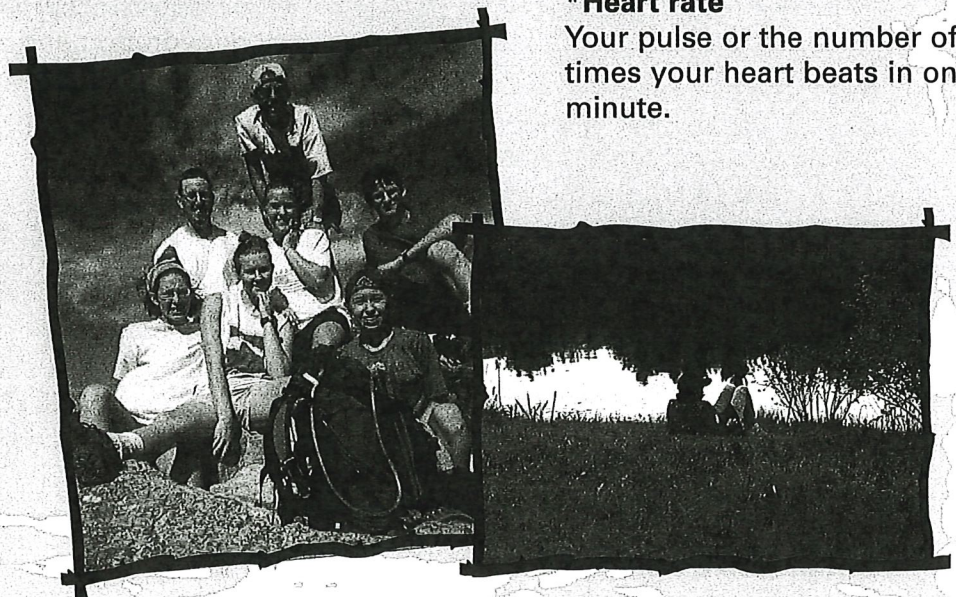
Guy line

Cord that stretches a tent into shape.

H

***Heart rate**

Your pulse or the number of times your heart beats in one minute.



Index line

A line on the raised part of the base plate of the orienteering compass against which the degree number of the graduated dial is read.

Itinerary

Your trip plan or schedule.

M

Magnetic needle

A magnetic strip suspended on a pivot that is printed red on the end that points toward Magnetic North (in the northern hemisphere).

Magnetic north

The direction in which the magnetic needle of the compass points due to the earth's magnetic forces.

O

Orienteering

The skill of finding your way in the field with a map and compass combined.

Orienteering compass

A compass especially designed to simplify the process of finding your way with a map and compass.

Orienteering arrow

Arrow-marking or parallel lines in or on housing of orienteering compass; used for setting the compass.

Orienteering lines

The lines on the inside bottom of the compass housing parallel to the North-South orienting arrow of the compass housing.

P

Pitch

To set up.

S

Scale

Located on the bottom of a map, it describes the relationship between distances on the map and actual distance.

Strike

To take down.

T

Target heart rate

70% of your maximum heart rate.

Topographic map

Illustrates the surface of the Earth by using contour lines and symbols to represent certain land features, landmarks, terrain, and water.

Torso

From the 7th vertebra (bony protrusion) at the base of the neck down to the low point between the hip bones.

Triangulation

The process of determining a location by taking intersecting bearings on two or more points.

True north

The geographic or "true" North Pole at the geographic top of the earth. True North is indicated on maps.

V

Vestibule

A covered tent front or back porch without a floor.

Glossary Word Find

See if you can find each of the glossary words in this Glossary Word Find.

P	D	B	C	E	N	M	E	A	G	A	P	O	N	I
A	E	I	O	S	O	A	T	E	W	C	E	R	O	O
M	C	O	M	I	I	G	A	L	O	T	N	I	I	R
C	L	D	P	C	T	N	L	D	R	I	I	E	T	I
I	I	E	A	R	I	E	P	E	R	V	L	N	A	E
H	N	G	S	E	S	T	E	E	A	E	R	T	L	N
P	A	R	S	X	O	I	S	N	G	H	U	E	U	T
A	T	A	H	E	P	C	A	C	N	E	O	E	G	I
R	I	D	O	C	M	N	B	I	I	A	T	R	N	N
G	O	A	U	I	O	O	I	T	T	R	N	I	A	G
O	N	B	S	B	C	R	O	E	N	T	O	N	I	L
P	S	L	I	O	E	T	M	N	E	R	C	G	R	I
O	B	E	N	R	D	H	E	G	I	A	S	H	T	N
T	A	R	G	E	T	H	E	A	R	T	R	A	T	E
G	N	I	R	A	E	B	Y	M	O	E	L	A	C	S

Glossary Word Bank

Active heart rate
Aerobic exercise
Base plate
Bearing
Biome
Biodegradable
Cardinal directions
Compass
Compass housing
Contour line

Cryptobiotic crust
Direction of travel arrow
Declination
Decomposition
Fecal
Grommets
Guy line
Heart rate
Index line
Itinerary

Magnetic needle
Magnetic north
Orienteering
Orienteering compass
Orienteering arrow
Orienteering lines
Pitch
Scale
Strike
Target heart rate

Topographic map
Torso
Triangulation
True north
Vestibule

What's in a Backcountry First Aid Kit?

The following is an example of a complete backcountry First Aid Kit. Use this as a guideline for the items that you should carry in your group's First Aid Kit.



Group Size:	1-10 people
Trip Duration:	Up to three weeks
Recommended Use:	First-aid treatment of abrasions, blisters, burns and other medical issues in the backcountry
Weight:	Two pounds and eleven ounces
Medical Information:	1 <i>Comprehensive Guide to Wilderness & Travel Medicine</i> 1 <i>Illustrated Guide to Life-Threatening Emergencies</i>
Essential Equipment:	1 EMT shears, 1 CPR filtershield, 1 SAM splint, 1 scalpel #11 blade, 1 duct tape, 1 digital thermometer, 1 splinter picker forceps
Wound Management:	4 double antibiotic ointments, 6 antiseptic towelettes, 2 tincture of benzoin, 10 wound closure strips, 1 20cc irrigation syringe, 1 surgical scrub brush, 1 povidone iodine solution (1oz)
Bandage Materials:	16 4 x 4 or 3 x 3 or 2 x 2's sterile dressings, 4 non-adherent sterile dressings (3 x 4), 1 adhesive tape 10 yd (1" or 1/2"), 13 strip and knuckle bandages, 2 8 x 10 and/or 5 x 9 trauma pads, 2 conforming gauze bandages (2" or 3"), 4 cotton tipped applicators, 1 elastic bandage w/ Velcro (2" or 3"), 2 stockinette bandages, 2 triangular bandages
Blisters/Burn:	2 moleskin (7 x 4), 2 spenco 2nd skin, 1 non-woven adhesive knit
Infectious Control:	6 Nitrile examination gloves, 3 antimicrobial hand wipes, 1 infectious control bag
Medication:	8 extra strength Tylenol, 4 antihistamines, 8 Motrin, 3 sting relief pads, 1 Tender's After Burn aloe
Other Items:	3 safety pins, 3 accident reports & pencils, 4 pill vials

WILDERNESS FIRST RESPONDER CLASS

Backcountry emergencies require different types of intervention than those available in settings with easy access to professional medical help. **To deal with backcountry medical emergencies, anyone leading an outdoor adventures that will take a group more than an hour away from a hospital needs supplemental knowledge beyond that delivered in standard first aid courses.**

Outdoor, or wilderness medicine focuses on preventing and recognizing medical emergencies and treating various medical conditions when you don't have immediate access to professional help. A Wilderness First Responder class will also spend a significant time on leadership and decision-making in outdoor medicine.



Resources

Outdoor Adventures Youth Material

- 1 – *Hiking Trails* BU-08043
- 2 – *Camping Adventures* BU-08044
- 3 – *Backpacking Expeditions* BU-08045
- Group Activity Helper's Guide* BU-08046

Introduction to Adventures: 4-H Adventure Project by Ted May, 4-H 444, University of Wisconsin Extension 4-H Youth Development Programs

Backpacking Books

Allen and Mike's Really Cool Back Packin' Books; Traveling and Camping Skills for a Wilderness Environment by Allen O'Bannon, Falcon Publishing, 2001.

The Advanced Backpacker: A Handbook for Year-Round, Long Distance Hiking by Chris Townsend, McGraw-Hill, NY 2001

The 2 oz. Backpacker: A Problem Solving Manual for Use in the Woods by Robert S. Wood

Walking Softly in the Wilderness: The Sierra Club guide to Backpacking. John Hart, 1977, Sierra Club Books, S.F.

Camping Books

Basic Essentials: Camping by Cliff Jacobson, Globe Pequot Publishing

NOLS Cookery, Claudia Pearson

The Camper's Guide, Drury and Holumlund

The Essential Family Camper: A Handbook for the Great Outdoors by Zora Aiken and David Aiken, McGraw-Hill, NY, 2001

First Aid

Field Guide to Wilderness Medicine, Paul Auerbach, Howard Donner and Eric Weissee

Wilderness 911: A Step-By-Step Guide for Medical Emergencies and Improvised Care in the Backcountry, Eric A. Weiss

Wilderness Medicine 4th Edition, Wm. Forgey, MD

Wilderness Medicine: Beyond First Aid by Wm. Forgey, MD

Hiking and Navigation

Soft Paths, NOLS

Take a New Bearing by Phyllis M. Ford

The Basic Essentials of Map & Compass by Cliff Jacobson

Wilderness

Leave No Trace, a Falcon Guide by Will Harmon

NOLS Wilderness Guide, Mark Harvey

Wilderness Environment by Allen O'Bannon. Falcon Publishing, 2001.

General Outdoor Resources

The Backcountry Classroom by Jack K. Drury and Bruce F. Bonney

The L.L. Bean Guide to the Outdoors. Bill Riviere, Random House, NY 1981

Conservation Organizations

Appalachian Mountain Club

Sierra Club

The Audubon Society

Nature Conservancy

Leave No Trace

American Camping Association

