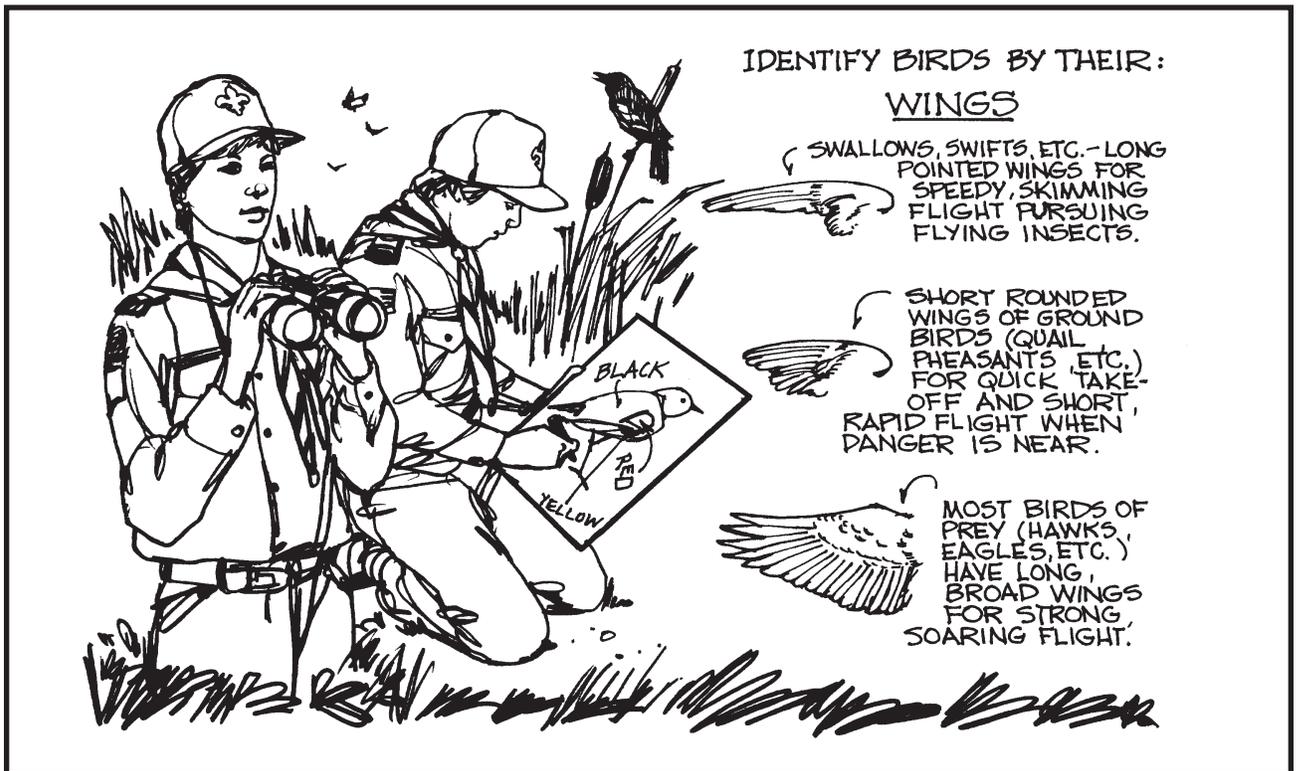


# ENVIRONMENT



Your Scouts are growing up at a time when environmental issues are high on the nation's list of priorities. During the past 20 years, there has been a growing understanding of the interdependence of all living things and how both natural and manmade pollution affect life.

In this program feature we will aim to explain the "web of life" and show Scouts how they can do their part to help preserve it. Troop meeting activities will cover some of the strands of the web of life. In the process, Scouts will learn more about wildlife, trees, plants, rocks, and soil. Patrols can do some ecology projects that will enhance their understanding of the web.

The big event will be an exploration trek for some field study. The purpose will not be identification of wildlife and plants—although there is bound to be some of that—but rather to learn about food chains, how oxygen and water are cycled through the ecosystem, and how pollution affects them.

The destination for the exploration trek might be almost anywhere—a wooded area, grassland, lake or seashore, desert, or even a city park. Your council's Scout camp may be a good choice, especially if it has a good nature trail that shows some of the relationships between animals, plants, and soils.

## SCOUTING OUTCOMES

This month's patrol and troop activities should give your Scouts

- A sense of communion with nature and God
- A greater understanding of ecology and humankind's place in the natural world
- Increased self-confidence
- The determination to leave as few traces as possible of their outdoor adventures

## ADVANCEMENT OPPORTUNITIES

By month's end, all Scouts should have met many of their basic nature/environment requirements through First Class. Depending on the campout activities, they may also complete all or part of the following rank requirements:

### *Tenderfoot*

- Outdoor—cooking, camping, hiking, nature
- Citizenship—flag ceremonies, Good Turn
- Patrol/troop participation—patrol identification
- Personal development—Scout Oath and Law

## BILLS AND FEET

 SEED-EATERS (SPARROWS, CARDINALS, ETC.) SHORT, THICK BILLS FOR CRACKING SEEDS.

 INSECT-EATERS: SWALLOWS, FLY-CATCHERS, ETC. THAT CATCH INSECTS ON THE WING; SMALL BILLS, WIDE MOUTHS.

 OTHER INSECT EATERS: WARBLERS, VIREOS, KINGLETS, ETC.; SLENDER, POINTED BILLS.

 WOODPECKERS BORE INTO TREES FOR GRUBS; HAVE LONG, SHARP CHISEL-LIKE BILLS.

 NECTAR-EATING HUMMINGBIRDS USE LONG, SLENDER, TAPERING BILLS FOR PROBING INTO FLOWERS.

 MUD-FEEDERS LIKE DUCKS AND GEESE; BROAD, FLATTENED BILLS FOR PUSHING INTO MUD AND STRAINING OUT FOOD.

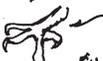
 LONG, SHARP BILLS OF HERONS, KINGFISHERS, ETC., FOR CATCHING FISH.

 BIRDS OF PREY (HAWKS, EAGLES, OWLS, ETC.) SHARP, HOOKED BILLS FOR TEARING ANIMAL FOOD.

 WADING BIRDS (HERONS, ETC.), LONG LEGS AND LONG, SLENDER TOES.

 PERCHING BIRDS (ROBINS, SPARROWS, WARBLERS, ETC.) HAVE TENDONS THAT AUTOMATICALLY LOCK THE BIRD TO ITS PERCH WHILE SLEEPING.

 SWIMMING BIRDS (DUCKS, GEESE, SWANS, ETC.) LARGE WEBBED FEET.

 CLIMBERS (WOODPECKERS, ETC.) SPREADING TOES, STRONG, CURVED CLAWS.

 BIRDS OF PREY (HAWKS, OWLS, EAGLES, ETC.) POWERFUL LEGS, STRONG FEET WITH SHARP, HOOKED TALONS FOR GRASPING PREY.

 GROUND FEEDERS (QUAIL, CHICKENS, ETC.) SCRATCH FOR FOOD WITH THEIR THREE FORWARD-POINTING TOES. SMALL HIND TOE RAISED ABOVE THE LEVEL OF THE FRONT TOES.

### Second Class

- Outdoor—cooking, camping, hiking, nature
- Citizenship—flag ceremonies, Good Turn, first aid
- Patrol/troop participation—leadership
- Personal development—Scout Oath and Law

### First Class

- Outdoor—cooking, camping, hiking, nature
- Citizenship—flag ceremonies, Good Turn, first aid
- Patrol/troop participation—leadership
- Personal development—Scout Oath and Law

**Merit Badges.** Older Scouts can concentrate on the Camping and Environmental Science merit badges this month. Depending on activities during the campout, they may also complete requirements in Cooking, Hiking, Backpacking, Wilderness Survival, Insect Study, Reptile and Amphibian Study, Soil and Water Conservation, Mammal Study, and other nature-related merit badges.

### PARENT/GUARDIAN PARTICIPATION

The patrol leaders' council may involve parents in the program feature this month by

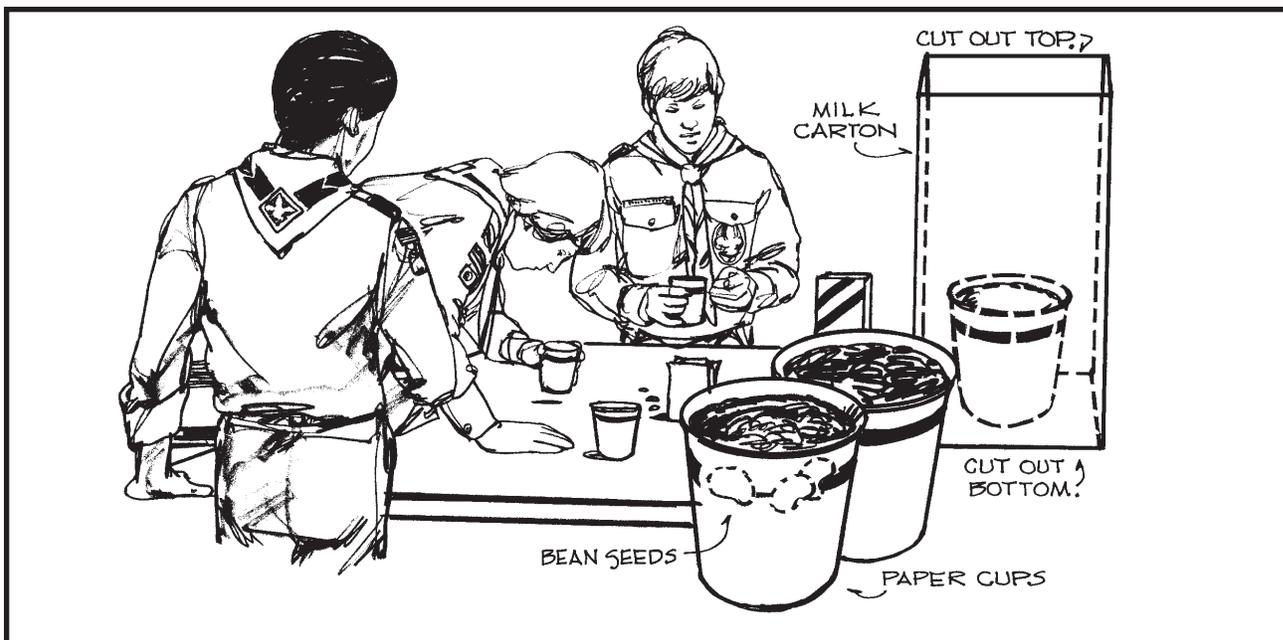
- Asking qualified people to help with troop meeting instruction
- Inviting parents to come along on the exploration trek

- Asking parents to provide transportation, if necessary, for the trek

### PATROL LEADERS' COUNCIL

The patrol leaders' council should meet during the early part of the previous month to plan troop activities for this program feature. If you don't complete all items on the following agenda, continue planning at patrol leaders' council meetings after each troop meeting.

- Decide on the site for the exploration trek. Any large natural environment will do, but if you have a choice, select an area of at least 10 acres so that a Scout working on requirements 2 and 3 of the Environmental Science merit badge will have room to explore. If the area has several types of ecosystems (woods, grasslands, pond, etc.), so much the better.
- Arrange to secure permissions, if necessary.
- Decide whether the trek will be a one-day event or a campout.
- Plan activities for the trek. Allow at least three hours of free time so that Scouts working on nature skills and other merit badges can make explorations. See the other ideas on these pages.
- Consider inviting an Environmental Science merit badge counselor or counselors for other nature-related badges to help with instruction at troop meetings and on the trek.
- Plan details of troop meeting activities. Review the principles of Leave No Trace.



## FEATURE EVENT

### Exploration Trek

The purpose of the exploration trek is to put your “nature detectives” on the trail of the natural environment. Ask Scouts to find out as much as they can about how the climate, geology, and soils in your area influence plant and animal life, and how the flora and fauna are interdependent.

This is the perfect opportunity for Scouts working on the Environmental Science merit badge to do some required fieldwork. Their aim should be not only to identify what kind of plants and animals are in the area, but also why they are there.

What the Scouts find will depend not only on the terrain but also on the time of year. Allow at least three hours for this exploration during your outing.

The following are examples of questions your nature detectives might try to answer.

- Is the soil here sandy, clay, or a rich loam? What kinds of plants grow here? What does that tell you about the nutrient needs of trees and shrubs?
- A patch of bark on this tree looks a bit shredded, and some twigs appear to have been nipped off. What does that tell you about the animals in the area? (It might mean that deer or porcupines have been feeding; the height of the chewed areas could be a clue as to which animal. If it’s an evergreen tree in a northern state, it might have been a bear.)
- Check under a rotting log. What do you find? (Probably beetles and perhaps salamanders or other

small animals.) What are the animals doing there? What will the log look like a year from now? Why?

- Why is this patch of ground eroding? Water runoff? Wind? Overgrazing by animals? What could be done to stop the erosion?
- You are on a sandy lake beach. Are you likely to spot squirrels, chipmunks, or woodchucks here? Why or why not? If not, what types of animals will you find?
- Under a big rock you find an ant colony. What are the ants doing? (Most are probably carrying aphids or other insects for food.) What does it tell you about the needs of ants for food and shelter?
- If you sit quietly for a long time in a field and watch for wildlife, you are likely to see quite a few birds and small mammals such as woodchucks and rabbits. Why don’t you also see a lot of large birds and mammals like foxes or coyotes? What does this tell you about the relative numbers of small creatures and larger predators?
- Here is a boulder with a crack in it. Lichens are growing in the crack. What will the boulder look like in 50 years? Why? What may have happened?
- Here is a small hole in the ground. What is it? (Probably a burrow.) What kind of animal lives there? (If the hole is small and there is another hole nearby with a mound of dirt alongside, it’s probably a woodchuck. If the hole is larger, it could be the home of a red fox. If you are on the Great Plains and the burrow looks like a miniature volcano, it’s probably a prairie dog.)

The exploration trek also gives older Scouts who have already earned the Environmental Science merit badge a chance to work on nature-related projects for other merit badges. Find out their interests in advance so that you can bring a supply of binoculars, insect-collecting nets, geologist's tools, etc., as needed.

The patrol leaders' council will want to plan other activities in addition to the exploration. For some ideas, see the Nature program feature.

### **Ecology Projects**

Patrols may want to conduct their own experiments in ecology. Here are some ideas.

**HOW DO PLANTS APPEAR ON BARE SOIL?** Fill a box or wide-mouth jar with commercial potting soil. Put it outdoors on a roof, fire escape, or windowsill. Keep the soil moist. Within a few weeks, small plants will be growing in the soil (which originally contained no seeds). Where did the seeds come from?

Many plant seeds are airborne and are carried for miles by the wind.

**TESTING AIR POLLUTION.** If you live in the city, set out a simple pollution testing device. Use the adhesive side of a bumper sticker or coat a piece of paper with petroleum jelly. Place it on a tree, rooftop, or fire escape, sticky side up. Over the next two or three weeks, check the tester with a magnifying glass to see how many pollutant particles there are.

**TESTING WATER POLLUTION.** If you live in a rural area and there is a lake or stream nearby, take a small sample of the water in a large jar and let it stand for a couple of weeks. As the water evaporates, silt and other solid matter will settle to the bottom, showing whether or not the body of water is gradually silting.

**WHAT DO PLANTS NEED?** Fill three paper cups with potting soil. Plant three or four bean seeds about ¼ inch deep in each pot. Moisten the soil.

Place one cup where it will get direct sunlight each day and keep the soil moist but not soggy. Place the second cup in direct sunlight, but give it no further water. Cut the top and bottom from a milk carton and put it over the third cup. Keep the soil moist.

After two or three weeks, examine the three plants. Which one is growing best? Which one is the worst? Why?

### **Leave No Trace Awareness**

In recent years, outdoorsmen have begun to realize that if our wilderness is to remain unspoiled and beautiful for the next generation, they must learn to leave as little impact as possible on it. So, many backcountry hikers now take pride in their ability to pass through an area

leaving very little effect on the environment. This practice is called Leave No Trace.

Most Scout hiking and camping is done in council camps, state parks, and other heavily used sites that are not true wilderness areas. However, it's a good idea to teach the Scouts, particularly the older Scouts, the purpose and principles of Leave No Trace. For one thing, it will reinforce the idea of good conservation. For another, the Scouts will be prepared to hike and camp in true wilderness areas.

As a practical matter, a whole troop cannot do this kind of trekking. It should only be done by small groups of experienced outdoorsmen. The types of activities that are suitable for normal Scout camping are not suitable in wilderness areas because they destroy much vegetation and often create a lot of noise.

Essentially, the idea of Leave No Trace is to blend in with the environment so that hikers passing your camp would scarcely realize you are there. Here are some tips for low-impact camping:

- Have no more than 12 in the party or the number prescribed by the land management agency.
- Use tents made of material that blends with the environment. Do not ditch tents.
- Pack food in burnable or pack-out containers; take and use trash bags.
- While hiking, stay on trails and do not cut across switchbacks. Select hard ground for cross-country travel; do not use muddy trails if you have a choice.
- Select campsites away from delicate plants, and camp no more than three days in one spot. Camp only one day if the site has not been used. Camp out of sight of trails, streams, and lakes.
- For fires, use lightweight backpacking stoves. However, in a heavily used area, you can use an old fire circle, burning only small downed wood. Or dig a low-impact fire pit, as shown in the *Fieldbook*.
- Wash yourself, clothes, and cooking gear 200 feet (70 to 80 strides) from streams and lakes. Strain dish-water and wash water and pour it into a hole. Save the turf and recover the hole.
- Dig latrines 6 to 8 inches deep, at least 220 feet from camp and water. Save the turf and recover the hole.
- Pack out all nonburnable trash.
- Avoid noisy games and activities.
- Avoid trampling vegetation.

Consider having the troop earn the Leave No Trace Achievement Award. Get the application, No. 21-105, from your local council service center.

# ENVIRONMENT

## TROOP MEETING PLAN

Date \_\_\_\_\_ Week 1

ACTIVITY	DESCRIPTION	RUN BY	TIME
<b>Preopening</b> _____ minutes	Play Jump the Shot. (See the Games section of the <i>Troop Program Resources</i> .)		
<b>Opening Ceremony</b> _____ minutes	<ul style="list-style-type: none"> <li>• Form the troop into a horseshoe.</li> <li>• Hold a uniform inspection.</li> <li>• Have each patrol give its patrol yell.</li> <li>• Repeat the Pledge of Allegiance.</li> </ul>		
<b>Skills Instruction</b> _____ minutes	<ul style="list-style-type: none"> <li>• New Scouts work on identifying mammals in your area (<i>Boy Scout Handbook</i>).</li> <li>• Experienced Scouts work on planning an environmental project for your community.</li> <li>• This project should have a long-term impact. It could be something like tree planting or city park renovation.</li> <li>• Older Scouts work on the Venture program or plan this month's troop campout (to be done as a totally low-impact camp).</li> </ul>		
<b>Patrol Meetings</b> _____ minutes	Discuss plans for the outing this month and make sure everyone knows what their assignments are and what to bring for the outing. Any Scouts who have not been camping yet will need some extra help. All other patrols plan activities to work on advancement. Plan any meals that will be needed for the outing. If it is going to be an overnighiter, begin to make plans for equipment distribution and tent needs. Brush up on identification of plants, animals, and reptiles.		
<b>Interpatrol Activity</b> _____ minutes	Play Leaf Matching game. (See the Games section of the <i>Troop Program Resources</i> .)		
<b>Closing</b> _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> <li>• Assemble patrols, repeat the Outdoor Code.</li> <li>• Scoutmaster's Minute.</li> <li>• Retire colors.</li> </ul>	SM	
<b>After the Meeting</b>	Patrol leaders' council reviews the next meeting and plans for the outing. Begin work on next month's program feature.		

\*Troop Program Resources for Scout Troops and Varsity Teams, Supply No. 33588

# ENVIRONMENT

## TROOP MEETING PLAN

Date \_\_\_\_\_ Week 2

ACTIVITY	DESCRIPTION	RUN BY	TIME
<b>Preopening</b> _____ minutes			
<b>Opening Ceremony</b> _____ minutes			
<b>Skills Instruction</b> _____ minutes	<ul style="list-style-type: none"> <li>• New Scouts work on identifying basic plants in your area (<i>Boy Scout Handbook</i>). Play Freak Plant Hunt. (See the Games section of the <i>Troop Program Resources</i>.)</li> <li>• Experienced Scouts continue work on plans for an environmental project. Who do you contact, and what supplies will you need? How long will it take to complete? Can we involve any other group to help with the project?</li> <li>• Older Scouts work on the Venture program or continue plans for low-impact outing. Plan a conservation project that can be done on the campout.</li> </ul>		
<b>Patrol Meetings</b> _____ minutes	Review assignments for the campout. First-time campers continue working on troop procedures for hiking and camping. All other patrols continue planning to work on activities on advancement for the outing. Practice interpatrol activities.		
<b>Interpatrol Activity</b> _____ minutes	Play What Do I Smell? (See the Games section of the <i>Troop Program Resources</i> .)		
<b>Closing</b> _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> <li>• Scoutmaster's Minute.</li> <li>• Retire colors.</li> </ul>	SM	
<b>After the Meeting</b>	Patrol leaders' council reviews the next meeting and plans for the troop campout or outing. Continue work on next month's program feature.		

\*Troop Program Resources for Scout Troops and Varsity Teams, Supply No. 33588

# ENVIRONMENT

## TROOP MEETING PLAN

Date \_\_\_\_\_ Week 3

ACTIVITY	DESCRIPTION	RUN BY	TIME
<b>Preopening</b> _____ minutes			
<b>Opening Ceremony</b> _____ minutes			
<b>Skills Instruction</b> _____ minutes	<ul style="list-style-type: none"> <li>• New Scouts work on setting up a weather station so they can monitor the weather in your area, or visit a weather-predicting facility in the community. It could be a television station, the U.S. Weather Service, or an airport that has those facilities.</li> <li>• Experienced Scouts work on map and compass skills to estimate heights and widths. On your campout, use these skills to estimate heights of trees and widths of streams or gullies. Play Hunter, Gun, or Rabbit. (See the Games section of the <i>Troop Program Resources</i>.*)</li> <li>• Older Scouts work on the Venture program or plan interpatrol activities for the campout.</li> </ul>		
<b>Patrol Meetings</b> _____ minutes	Finalize the menu for the outing and make sure everyone knows what he will need to bring. Review clothing and equipment needs and collect any necessary fees. If it is winter, remember that normal activities in camp will take longer.		
<b>Interpatrol Activity</b> _____ minutes	Play Granny's Footsteps. (See the Games section of the <i>Troop Program Resources</i> .*)		
<b>Closing</b> _____ minutes  Total 90 minutes of meeting	<ul style="list-style-type: none"> <li>• Scoutmaster's Minute.</li> <li>• Retire colors.</li> </ul>	SM	
<b>After the Meeting</b>	Patrol leaders' council reviews the next meeting and plans for the troop campout. Continue work on next month's program feature.		

\*Troop Program Resources for Scout Troops and Varsity Teams, Supply No. 33588

# ENVIRONMENT

## TROOP MEETING PLAN

Date \_\_\_\_\_ Week 4

ACTIVITY	DESCRIPTION	RUN BY	TIME
<b>Preopening</b> _____ minutes			
<b>Opening Ceremony</b> _____ minutes			
<b>Skills Instruction</b> _____ minutes	<ul style="list-style-type: none"> <li>• New Scouts get instruction and hints on low-impact camping techniques (<i>Boy Scout Handbook</i>).</li> <li>• Experienced Scouts finalize their environmental project.</li> <li>• Older Scouts work on the Venture program or give instruction to the younger Scouts on Leave No Trace.</li> </ul>		
<b>Patrol Meetings</b> _____ minutes	Review plans and assignments for the campout. Make sure everyone knows the travel plans and equipment needs. Go over the patrol duty roster. Practice interpatrol activities that will take place.		
<b>Interpatrol Activity</b> _____ minutes	Play Nature Memory Hunt. (See the Games section of the <i>Troop Program Resources</i> .* )		
<b>Closing</b> _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> <li>• Scoutmaster's Minute.</li> <li>• Retire colors.</li> </ul>	SM	
<b>After the Meeting</b>	Patrol leaders' council reviews the next meeting and checks last-minute details for the troop campout. Finalize work on next month's program feature.		

\*Troop Program Resources for Scout Troops and Varsity Teams, Supply No. 33588

# ENVIRONMENT

## TROOP OUTDOOR PROGRAM PLAN

**Date** \_\_\_\_\_

TIME	ACTIVITY	RUN BY
<b>Friday evening</b>	Load gear at the meeting location; leave for the campsite. Plan only a light meal en route.	
	Upon arrival at campsite, off-load equipment and set up patrol sites. Stow gear and set up campsite.	SPL
<b>Saturday</b> 6:30 A.M.	Cooks and assistants up. Prepare breakfast. (These Scouts should be working on First and Second Class requirements.)	Cooks, assistants
7:00 A.M.	Everyone else up. Take care of personal hygiene, air tents, hang out sleeping bags.	
7:30 A.M.	Breakfast	
8:00 A.M.	Clean up. Stake out an area in the woods or field and observe what is taking place there.	Cooks
10:00 A.M.	Locate tracks of wild animals and follow the tracks to see if you can locate and observe their habitat.	
11:30 A.M.	Cooks prepare lunch.	Cooks
Noon	Lunch	
12:30 P.M.	Clean up. Free time	Cooks
1:00 P.M.	Patrol competitions—six games from the Games section of <i>Troop Program Resources</i> . *	SPL
4:30 P.M.	Start dinner preparation.	Cooks
5:30 P.M.	Dinner	SPL
6:00 P.M.	Clean up. Free time	Cooks
8:00 P.M.	Troop campfire	SPL
9:00 P.M.	Cracker barrel	
10:00 P.M.	Lights out	
<b>Sunday</b> 6:30 A.M.	Cooks and assistants up. Prepare breakfast. (Cooks should be working on First and Second Class requirements.)	Cooks, assistants
7:00 A.M.	Everyone else up. Take care of personal hygiene, air tents, hang out sleeping bags.	

\*Troop Program Resources for Scout Troops and Varsity Teams, Supply No. 33588

<b>TIME</b>	<b>ACTIVITY</b>	<b>RUN BY</b>
7:30 A.M.	Breakfast	
8:00 A.M.	Clean up.	Cooks
	Patrols put up the gear for morning activities, clean up patrol site.	
8:30 A.M.	Worship service	
9:00 A.M.	Patrol games from the Games section of <i>Troop Program Resources</i> . *	
11:00 A.M.	Break camp.	
<b>Special equipment needed</b>	Topographic maps, compass, clipboards	

\**Troop Program Resources for Scout Troops and Varsity Teams*, Supply No. 33588