



# *Twin Rivers Council*

## **ROUNDTABLE REFERENCES**



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# Discussion Ideas



## **CUB SCOUTS**

### **Cub Scout Car Show:**

- Start preparing for your Pack's Pinewood Derby
- Discuss the importance of having the Scouts make their OWN cars.
- Do a Sidecar Relay race.
- Have them take a Transportation Quiz.

### **Fitness:**

- Take a field trip to a local YMCA or local fitness club.
- Visit a local dentist's office
- Explain the bad effects of alcohol on the human body.
- Create a safety notebook for your household.
- Have the boys create T-shirts on NOT doing drugs or drinking (Tie-dye is really fun).
- Explain the importance of meal planning to ensure balanced nutrition.
- Give them several different items and have them compare the nutrition facts of each to decide which is best for them to eat.

### **Possible guest speakers for Fitness:**

- YMCA director
- Health class teacher
- Personal trainer
- Gym instructor
- Little League Coach
- CPR instructor
- Red Cross volunteer
- Dietician

### **For Scientist:**

- Explain the differences between a scientist and an engineer.



## Discussion Ideas (continued)



- Make a charcoal crystal garden (in the packet).
- Explain Bernoulli's Principle and do a sample demonstration.
- With Scientist, leaders to need remember a few things:
  - The Scientist badge is a “doing” badge, not a “watching” badge.
  - Leaders should show demonstrate the experiment, explain the experiment, ask questions to test understanding, allow Scouts to do the experiment themselves, have them log what is happening and then have them try and explain why it happened.
- Make a foaming fountain (in the packet)
- Discuss with a forensic expert how they search for clues by using science to have formulate their theories.

### Scientist

- A Physics teacher
- A physicist
- College professor
- A forensic examiner



## Discussion Ideas (continued)

### BOY SCOUTS

#### Wilderness Survival:

- Edible wild plants display
- Direction-finding without a compass
- Simple trail first aid
- Procedures to use when lost in the woods
- Planning and executing a survival hike
- Water treatment and fire starting without matches
- Survival situation priorities and signaling techniques
- Designing and building survival shelters
- Survival kit in a film canister
- Winter survival techniques
- Review the most common mistakes made in the wilderness
- Discuss the most important things to do in the wilderness to keep you and your Scouts safe

#### Wilderness Survival

- Someone who does a lot of high adventure hiking
- Winter camping advisor from Council
- A speaker from a Varsity team or a Venturing crew talk about search-and-rescue techniques

# Opening Ceremony



*Material:* An American Flag, cue cards.

**Set Up** – Eight Cub Scouts in uniform stand in a straight line.

**Cub 1:** I am the symbol of the living America, the badge of its greatness, the emblem of its destiny.

**Cub 2:** I am faith. It is I who keep men mindful of their priceless heritage ... life, liberty, and the right to pursue happiness.

**Cub 3:** I am hope. I represent the land of promise where in, already, man's loftiest dreams have approached closer to realization than ever before on this earth.

**Cub 4:** I am life. Each strand and fiber of my being is a memorial, dedicated to the sacrifices of all those strong men and steadfast women who have lived and died in the nation's service, that it might live longer.

**Cub 5:** I am tolerance. So long as I shall wave, all people under my protection may freely worship, think, write and speak, undaunted by the shadow of fear.

**Cub 6:** I am justice, tempered with mercy. For I am friend to the oppressed and downtrodden of every land.

**Cub 7:** I am a sign of the future. I wave over schools throughout the nation and in them the nation's future is molded.

**Cub # 8:** I am the flag of the United States...the last....the best hope for peace on earth.



## Song Idea

# “Derby Cars”

*Tune: She'll Be Coming 'Round the Mountain”*

We'll be sandin' our derby cars now (now, now).

We'll be paintin our derby cars now (now, now).

We'll be racin' our derby cars,

Derby, derby, derby cars—

We'll be racin' our derby cars now (now, now).

We are proud of our derby entries now (now, now).

We are proud of our derby entries now (now, now).

We are proud of our entries.

Proud of our entries.

We are proud of our derby entries now!

*Aren't you?*

# Activity Idea

## Do You Know Cars?



Each of the definitions below describes a car. Can you name them?

1. Our 16th President?
2. River in New York?
3. First Colony in New England
4. Indian Chief
5. Theater in which Lincoln was shot
6. A spotted horse
7. A hawk
8. A motherless calf
9. A wild horse
10. One who travel and finds new things

### Answers

- 1. Lincoln; 2. Hudson; 3. Plymouth; 4. Pontiac; 5. Ford; 6. Pinto;  
7. Falcon; 8. Maverick; 9. Mustang; 10. Explorer*



# Activity Idea

## Transportation Quiz

1. A form a transportation that does not run on wheels is\_\_\_\_\_.  
Skateboard                      Snow-mobile  
Blade skates                      Tank
2. The inventor of the wheel is unknown, but the first record of a wheeled vehicle goes back 5,000 years to ancient \_\_\_\_\_.  
Babylonia                      Sumer  
Egypt                      Greece
3. The wheel is a form of a simple machine called the\_\_\_\_\_.  
Pulley                      Wedge  
Screw                      Lever
4. The earliest wheels were made of \_\_\_\_\_.  
Joined wood slabs      Bronze  
Chiseled stone      Iron
5. The first important improvement in construction was the \_\_\_\_\_ wheel.  
Wire                      Disk  
Welded                      Spoked
6. A major improvement in the wooden wheel was\_\_\_\_\_  
An iron rim                      Harder wood  
Flat area elimination      Axle lubrication
7. Starting with the 13<sup>th</sup> century, a person who made and repaired wheels was called a \_\_\_\_\_  
Wheelwright                      Wheelie  
Wheeler-dealer                      Wheelsman
8. Around 1830, a new kind of wheeled vehicle began to appear, the \_\_\_\_\_.  
Steamboat                      Stanley steamer  
Shaftmobile                      Steam locomotive

*Answers: (1) Snowmobile (2) Sumer (3) Lever (4) Joined wood slabs (5) Spoked (6) An iron rim (7) Wheelwright (8) Steam locomotive*

# Game Idea

## Sidecar Race



*Material: Fabric strips*

This is a traditional three-legged race run by an adult and a Scout as a team. Tie the left leg of one player to the right leg of the other. Stress teamwork.

# Game Idea

## Repair Shop Relay



*Materials: One chair or other marker for each team.*

Teams line up single file at their starting point. Players are “cars” needing repairs, and the chair is a “repair shop.” The first player on each team represents a car with a flat tire. He hops to the repair shop, goes around the chair and then runs back in good shape.

The second player has a broken radiator. He makes hissing sounds as he runs to the shop.

The third player has water in the gas tank and moves forward three steps and backward two steps.

The fourth and the fifth run together because the fourth has a run-down battery and needs to be pushed.

The sixth has a wheel off and moves on two hands and one foot.

The seventh can only move in reverse. (Adjusts the actions to the size of the teams.)

# Activity Idea

## Hovercraft



*Materials: Old CD, push-pull squirt cap from a water bottle or dish soap bottle, balloon, low-temperature glue gun*

Glue the cap to the recorded side of the CD. Make sure it is glued airtight. Open the cap slightly. Blow up the balloon and put the opening over the cap. Place the hovercraft on a clean, smooth surface. Nudge it a little and see how it moves. Experiment by changing the opening of the cap.

The air escaping from the pressurized balloon lifts the hovercraft and creates a thin cushion of air between the bottom of the CD and the table. This cushion of air reduces the friction between the table and the hovercraft. The reduced friction means less force is needed to move the hovercraft and it will go farther before stopping. The CD's base distributes the weight of the hovercraft over a wide area. The larger base means the hovercraft needs less force per unit of area to lift it off the table.



# Activity Idea

## Fitness: Effects of Sick or Injured Lungs

### *Materials:*

*Candle and matches.*

**Light a candle.** Ask a Webelos Scout to stand a reasonable distance from the candle. Instruct him to take a deep breath, and then blow out the candle.

**Relight the candle.** Ask the same Scout to stand at the same distance from the candle. Instruct him to take a deep breath and release at least half of the breath. Ask him to then blow out the candle with the remaining breath. What happened? How does this relate to smoking and the health of your lungs?

# Activity Idea

## Test Your Heartbeat



Did you know that you can't actually hear a heartbeat? The heartbeat itself is just a contraction of muscle and is perfectly quiet. What you can hear is the sound of heart valves snapping shut.

Here's how to check your heartbeat:

1. Press the first two fingers of one hand over the radial artery in the wrist of your other hand. That's the artery in the depression just below the base of your wrist. Move your fingers until you can feel the pulse of your blood.
2. Use a watch with a second hand, and count the number of beats in 10 seconds.
3. Multiply by 6. Now you know the number of beats per minute.
4. Run or exercise for 10 minutes or so. Take your pulse again, and see how much faster your heart is pumping.

Your resting heart rate can tell something about your overall health and fitness.

Physically fit people often have low resting heart rates.



# Discussion Idea

## What do Scientists Do?

A scientist studies things to learn how they behave and why. Scientists try to find out the laws of nature about the things they study. People can use these rules or laws in making things.

While working on this activity badge, you will learn a few of the main ideas in physics. Physics is a science with several branches.

One of these branches will be weather. You can learn a little about weather in these activity badge requirements.

Another branch of physics is called optics. You will have a chance to learn something about sight and find out how your eyes work. Scientists learn a lot by experimenting or trying things out. Try things for yourself.

Scientists take nothing for granted.

They may be sure an idea is true, but they always test it, if possible, to make certain they are right.

### **Scientists and Engineers**

**Aren't they the same thing?** Not quite. Though they use many of the same ideas and methods, scientists and engineers are somewhat different.

**What do scientists want?** Scientists want to know how the universe works. They may see it as an enormous jigsaw puzzle to solve for its own sake. Some things they find are useful right away, others not (though much of what scientists have found in the past has turned out to be useful in some way). Though they certainly want to help people, their major goal is understanding, not usefulness.

# Discussion Idea

## What do Scientists Do?

### (continued)



**What about engineers?** Engineers try to use the facts of science and math to do things that are useful to people. Many engineers are designers—designing the many products that we use in the world, from computers to cars to camera lenses.

**What do they have in common?** Quite a few things, actually. Scientists and engineers both use the facts and methods of science, and both often.

# Activity Idea

## Charcoal Crystal Garden



Colorful, small, delicate crystals grow on a charcoal or brick surface.

You can also use pieces of sponge, coal, or crumbled cork to grow the crystals on. Crystals are formed because the porous materials they grow on draw up the solution by capillary action. As the water evaporates on the surface, deposits of solids are left behind, forming the crystals. As more solution is drawn up, it passes through the crystals that have already formed, depositing more solids on their surfaces, causing the crystals to grow.

# Activity Idea

## Floating Egg Salty Magic



The salt water of the seas is much denser than the fresh water of rivers and lakes, and therefore it is easier to float in the ocean. Show this by filling two glasses half full of water.

In one of them, mix in about 10 heaping teaspoons of salt.

Try floating an egg in each glass. In which glass does the egg float?

Now take the eggs out of both glasses. Carefully and slowly, pour the fresh water into the salt water glass. Gently lower an egg into the water.

It should float (remain suspended) at the salt water level.

# Activity Idea

## Bernoulli's Principle



*Materials: 2 ping-pong balls, 2 feet of thread, some mending table, and a drinking straw.*

Tape each ball to an end of the thread. Hold the center of the thread so that the balls dangle about one foot below your fingers and about one or two inches apart.

Have the boys' blow through a straw exactly between the balls, front a distance of a few inches. Instead of being repelled, the balls will be attracted to each other.

# Activity Idea

## Foaming Fountain



Place two teaspoonfuls of baking soda in the bottom of a quart glass bottle. Drop a burning match into the bottle. It will continue to burn. Next pour four teaspoonfuls of vinegar on top of the baking soda, being careful not to pour directly onto the match. Watch what happens. The seething, foaming mass is carbon dioxide, released from the soda by the vinegar.

What happens now to a lighted match? Why? Is carbon dioxide gas heavier than air? Than oxygen? Tip bottle slowly over it lighted candle. What happens? The heavy gas can even be poured so the flame flutters and may go out.

This is the principle behind some fire extinguishers.

# Resource Idea Menu Planner



## 7 Day Menu Planner

7 Day Planner	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast							
Lunch							
Snack (optional)							
Dinner							

# Resource Idea

## Serving Size Information



The Food Guide Pyramid is designed to help kids and parents understand the guidelines. Inside the pyramid, six stripes represent the five food groups - as well as fats and oils - that your child should consume each day. Stairs on the pyramid represent the importance of exercise and the simple steps you can take each day to improve your child's health.

On the pyramid, each color represents a different food group:

- Orange: grains
- Green: vegetables
- Red: fruits
- Blue: dairy and calcium-rich foods
- Purple: proteins (meats, beans, and fish)
- Yellow: fats and oils

Keep in mind that the serving sizes are guidelines and that, on some days, your child may eat more or less of a certain food group. That's OK. Different foods have different mixes of nutrients, so it's important to offer your child a variety of foods on a regular basis. Moderation is a key part of a healthy diet.

Also, remember that the nutrition content of a food can vary depending on how you prepare it. Apples, for example, are packed with nutrients and can make for a great after-school snack. Apple pie has all those nutrients. But it has lots of fats and sugars, too, so you may want to limit how much you serve.

### **Grains**

The grains group, which includes foods like bread, cereal, rice, and pasta, should provide the majority of the energy your child needs each day.

# Resource Idea

## Serving Size Information

### (continued)



These foods are high in complex carbohydrates, which are the body's favorite fuel, and give your child the energy to play, pay attention in school, and do many other activities.

Grains also provide other important nutrients such as vitamin B-complex (folate), which helps your child's body use the protein needed to build muscle.

At least half of the grains your child consumes each day should be whole grains, such as oatmeal, brown rice, and rye bread. Whole grains contain dietary fiber that can help protect against diseases like heart disease and diabetes, and also help control your child's weight. They are different from refined grains, such as those in white bread and white rice, which have been processed, and many of the nutrients have been taken out.

The new guidelines take into account a child's gender, age, and activity level. For example, for kids who get about 30 minutes of exercise per day, the USDA recommends:

- 2- to 3-year-olds: 3 ounces
- 4- to 8-year-olds: 4 to 5 ounces
- 9- to 13-year-old girls: 5 ounces
- 9- to 13-year-old boys: 6 ounces
- 14- to 18-year-old girls: 6 ounces
- 14- to 18-year-old boys: 7 ounces

What's an ounce? Each of the following equals about 1 ounce:

- 1 slice of bread
- 1/2 cup of cooked rice or pasta
- 1/2 cup of oatmeal

# Resource Idea

## Serving Size Information

### (continued)



### Vegetables

Vegetables provide many of the vitamins and minerals kids need for good health, and they provide fiber to aid digestion. So it's important to have a variety of them in your child's diet.

Be sure to scrub vegetables before cooking them. It's best to steam or microwave vegetables, or eat them raw. Occasional stir-frying is OK. Boiling vegetables is also acceptable, but some of the vitamins and minerals will be lost to the cooking water.

For kids who get about 30 minutes of exercise each day, the USDA recommends:

- 2- to 3-year-olds: 1 cup
- 4- to 8-year-olds: 1 1/2 cups
- 9- to 13-year-old girls: 2 cups
- 9- to 13-year-old boys: 2 1/2 cups
- 14- to 18-year-old girls: 2 1/2 cups
- 14- to 18-year-old boys: 3 cups

### Fruits

Fruits are especially good sources of important vitamins like A and C. This food group also adds minerals such as potassium and fiber, which help digestion. Be sure to scrub fruits before feeding them to your child. It is best to eat fruits raw.

# Resource Idea

## Serving Size Information

### (continued)



For kids who get about 30 minutes of exercise each day, the USDA recommends:

- 2- to 3-year-olds: 1 cup
- 4- to 8-year-olds: 1 1/2 cups
- 9- to 13-year-old girls: 1 1/2 cups
- 9- to 13-year-old boys: 1 1/2 cups
- 14- to 18-year-old girls: 1 1/2 cups
- 14- to 18-year-old boys: 2 cups

### **Dairy**

This food group, which includes milk and other foods like milk, yogurt, and cheese, is an important source of vitamin A, vitamin D, calcium, and protein.

Vitamin A helps build healthy eyes, skin, and hair. Vitamin D helps your child's body absorb calcium and use it for healthy bones and teeth, along with muscle and nerve functions.

For kids who get about 30 minutes of exercise each day, the USDA recommends:

- 2- to 3-year-olds: 2 cups
- 4- to 8-year-olds: 2 cups
- 9- to 13-year-old girls: 3 cups
- 9- to 13-year-old boys: 3 cups
- 14- to 18-year-old girls: 3 cups
- 14- to 18-year-old boys: 3 cups

# Resource Idea

## Serving Size Information

### (continued)



### **Meat, Fish, Beans, and Nuts**

This food group provides your child with protein, which helps your child's body maintain and repair body tissues and build muscle.

Foods in this group also provide vitamin B-complex and iron, which helps build strong bones and teeth and support muscles.

For kids who get about 30 minutes of exercise each day, the USDA recommends:

- 2- to 3-year-olds: 2 ounces
- 4- to 8-year-olds: 3 to 4 ounces
- 9- to 13-year-old girls: 5 ounces
- 9- to 13-year-old boys: 5 ounces
- 14- to 18-year-old girls: 5 ounces
- 14- to 18-year-old boys: 6 ounces

Of course, 1 ounce of meat, poultry, or fish counts as a 1-ounce serving for this group. In general, the following each equal about 1 ounce:

- 1/4 cup cooked dry beans
- 1 egg
- 1 tablespoon of peanut butter
- 1/2 ounce of nuts or seeds

### **Fats, Oils, and Sweets**

Fats and oils are essential nutrients to maintain body function but should be used sparingly. Fats help the body absorb vitamins A, D, E, K, and beta-carotene. Even though fats may be needed to maintain good health, it may be a good idea to limit them, since they still contain calories.

# Resource Idea

## Serving Size Information

### (continued)



Oils are fats that are liquid at room temperature, like the vegetable oils that are commonly used in cooking. Oils can come from many different plants and fish. Some other common oils include olive oil, corn oil, soybean oil, and sunflower oil.

Some foods are naturally high in oils, like nuts, olives, some fish, and avocados. Most oils are high in monounsaturated or polyunsaturated fats. These fats raise your child's level of (good) HDL cholesterol, which seems to help prevent heart problems, and do not raise levels of (bad) LDL cholesterol, which can lead to heart problems.

Solid fats, like butter, shortening, and margarine, contain more saturated fats or trans fats, which can raise (bad) LDL cholesterol levels in the blood and increase your child's risk for heart disease.

Fats shouldn't be restricted in children under age 2. The developing brain and other organs of the young child need a certain amount of fat for proper development.

Sugars are quickly absorbed into the bloodstream to provide your child a quick dose of energy. It's a good idea to limit the amount of sugar you feed your child from candy, sweets, and other foods. That's because the body stores the extra sugar it doesn't immediately need as fat. That can lead to weight gain and other health problems.

Reviewed by: Barbara P. Homeier, MD

Date reviewed: April 2005

Originally reviewed by: Heidi Kecskemethy, RD, CSP



# Activity Idea

## Edible wild plants

### **Dandelions:**

All parts of the dandelion are edible:

Dandelion root can be roasted as a coffee-substitute, or boiled and stir-fried as a cooked vegetable.

Dandelion flower can be made into a wine, or boiled and stir-fried as a cooked vegetable.

Dandelion greens (i.e., the leaves) can be boiled, as you would spinach, and used as a cooked vegetable, in sandwiches or as a salad green with some "bite." Consult the Internet for some recipes using dandelion greens.

### **Purslane:**



Purslane's stem is round and smooth, and it trails along the ground like a small vine. Young plants have a green stem, but, with maturity, stems take on reddish tints. Purslane has small, oblong, green leaves, which form clusters. The leaves resemble small wedges and, like the stem, are juicy.

Purslane just happens to contain alpha-linolenic acid, one of the highly sought-after Omega-3 fatty acids. Not only does purslane have leaves in Omega-3 fatty acid, but it also has stems high in vitamin C. Omega-3 fatty acids are instrumental in regulating our metabolism. Purslane contains a very high concentration of alpha-linolenic acid -- several times the concentration in spinach.

# Activity Idea

## Edible wild plants (continued)



In order to preserve purslane's juiciness for eating, harvest this delight of your edible landscaping in the morning or evening, when you won't have to compete with intense sunlight. Purslane can either be used raw in salads or sauteed as a side dish. In addition to the crispy texture you would expect from a succulent, purslane also has an interesting peppery flavor.

### **Japanese Knotweed:**



Collect the shoots of Japanese knotweed in the spring. When they first emerge (and until they are around 6" tall) they are still tender. Strip the leaves off the shoots, slice them up and steam or boil them. Flavor them with butter and salt.

I have good news for you: it's high in vitamin C!

But these edible weeds have so tart a flavor that you may have to add a sweetener to make them palatable as a vegetable dish. In fact, while they may remind you of a red version of asparagus as their shoots push up through the earth in spring, taste wise, think of them more along the lines of that tart, fruity vegetable, rhubarb.

# Activity Idea

## Wilderness Survival Techniques



Survival in the wilderness does not depend so much on what you have, but on your knowledge and ability to use what you have. A survival kit should contain those items that are difficult to obtain from nature. Don't just make a survival kit, know wilderness survival techniques and practice them frequently. The Boy Scout merit badge book on wilderness survival is a great resource. There are also many other books and Internet sites that cover the topic.

For this project, you can use a film canister, but you might want to use something a little larger like a prescription bottle, candy container, or other waterproof plastic bottle. Metal tins cans with tight lids are also very good and can be used as a container in which water can be boiled. The shiny lid can be used as a signaling device. You want a container that is small enough that you will always carry it and without sharp corners that could poke you. It's a great challenge trying to see how many items you can stuff into a small container.

Especially useful are items that have more than one use. For example, duct tape can be used to repair clothing, for a blister, as a band-aid, or make a cup. The list is almost endless.

### **Some things you might consider putting in your survival kit:**

- First-Aid - Band-Aids, gauze pads, tape, butterfly strips, moleskin, Betadine™ or Neosporin™, safety pins, aspirin/Tylenol™, bandana
- Shelter - Large plastic bag, space or emergency bag/blanket, or poncho
- Large plastic bag - wind breaker, rain coat, or sleeping bag (add leaves for insulation)
- Small plastic bags - Carry food or water, rain hat, insulate head, hands, feet



# Activity Idea

## Wilderness Survival Techniques (continued)



### Items in this kit:

- 3 Band-Aids - for cuts and abrasions
- 3' Duct tape (around outside of bottle) - repairs or first aid bandages
- 3 Safety pins - repairs, fishhooks
- Tylenol™ - for fever or pain
- Matches and candle - fire starting
- Whistle (made from a straw) - for signaling
- 12"x12" Aluminum foil - signaling, make a cup for boiling water
- 12' artificial sinew (string) - repair, making shelter
- Saw - made from end of used hacksaw blade
- Cotton - first aid, fire starting
- Needle and thread - repairs, compass<sup>1</sup>
- Wilderness survival priority list
- Survival Manual

# Activity Idea

## Wilderness Survival Priority List



1. **Positive Mental Attitude** - The most important item you have is your brain
  - **Stop** - Hug a tree. Relax. Seek safety (from weather, water, animals), shelter (from cold, rain, heat), visibility (so you can see and be seen). A stationary person is easier to find than a moving one.
  - **Think** - What went wrong? Can I help myself? Can I help others find me? Don't make hasty decisions.
  - **Observe** - Am I hurt? What do I have that may help me? What's the weather going to do? What natural resources are available?
  - **Pray/Plan** - Set up camp, make a fire.
2. **First Aid**
  - Take care of any serious problems.
3. **Shelter** - protection from heat, cold, rain, sun
  - Large plastic bag, emergency bag/blanket, poncho, found materials
4. **Fire** - warmth, security, signaling, ...
5. **Signaling** - mark X, signal in 3's
  - Don't yell it doesn't carry far and is tiring - whistle instead
  - Smoke (can be seen for miles), whistle (carries in all directions), flag/bandana, mirror (single direction for miles), flashlight (single direction)
6. **Water** - you can survive a few days without it
  - Boil - 5 minutes max
  - 2 drops chlorine per quart (double if water is cloudy) - let set for 30 minutes
  - 5 drops iodine per quart (double if water is cloudy) - let set for 30 minutes

# Activity Idea

## Wilderness Survival Priority List (continued)



7. **Food** - you can survive a week or more without it
- All healthy mammals, birds, insects are edible
  - Anything seen eaten by rabbits, rodents, beavers, squirrels, raccoons, NOT birds
  - No plants with soapy, bitter, acid, burning taste; take a small taste, wait for 5 minutes; use caution
  - No plants with milky saps, or sickly looking; cook

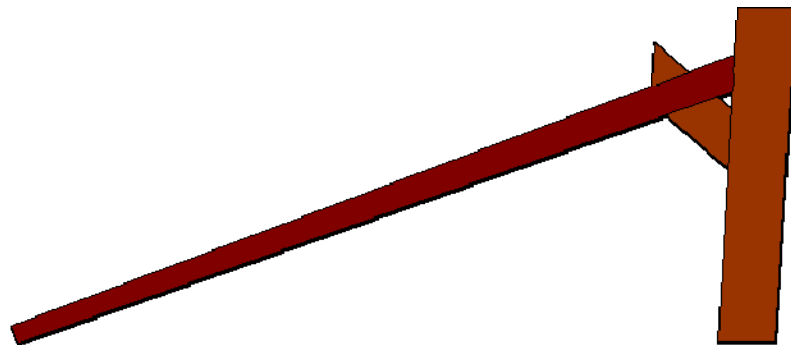
# Activity Idea

## Wilderness Survival



### Shelter

- Location, location, location. A good shelter in a bad location is a bad shelter.
  - Look for natural covers like beneath the bottom branches of a tree or a rock overhang.
  - Protect yourself from wind, rain, sun, dead limbs, and rock falls.
  - Not in a low spot where water puddles. Not next to water where there's a chance of flooding.
  - Away from fire hazards - you will have a fire nearby.
  - Away from ants, animal dens, poisonous plants, and sharp rocks.
  - Next to a clearing so more easily seen from the air, on north side in winter or rainy conditions for more sun, on south side in summer for protection from sun.
  - Plenty of resources nearby - building materials (frame work, insulation, roofing), water, plants, and animals.
  - Make use of what nature gives you - caves, logs, and rocks.
- Construction
  - Height - a little taller than you are sitting. Look for crotch in tree this height.
  - Length about 2 times your height (sleep area plus work area, storage area). Work area can be added on later. Look for a long, straight, and strong branch.
  - Opening on east side away from most storms.



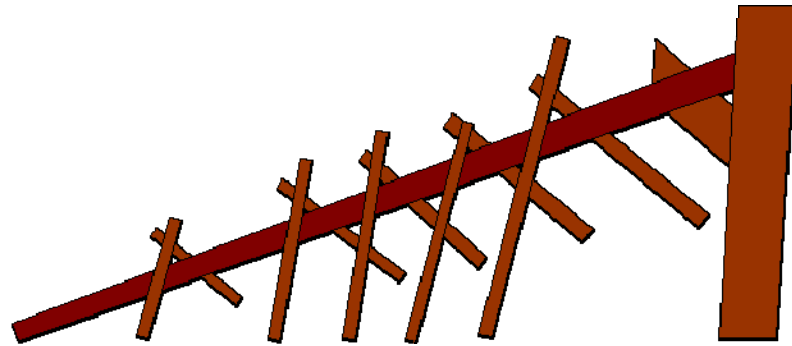
# Activity Idea

## Wilderness Survival

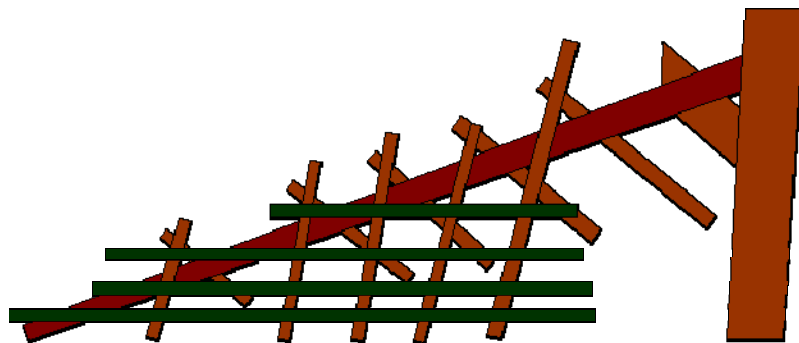
### (continued)



- Place ribs wide enough that you fit easily inside.



- Place horizontal sticks; they can be woven. These help hold the insulation out of the interior.

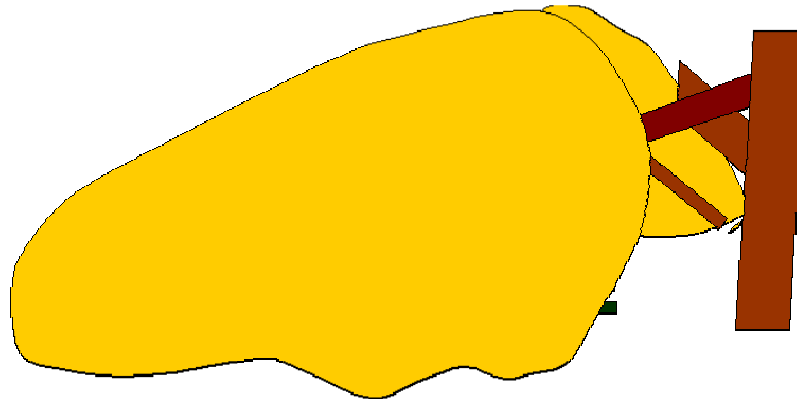


Place horizontal sticks. Pile light, airy, dry debris like leaves and grass in a dome shape. You need about 2 feet thick to keep you warm to freezing. Steeper gives better rain protection, more insulation makes it warmer. You can use your arm to measure its depth.

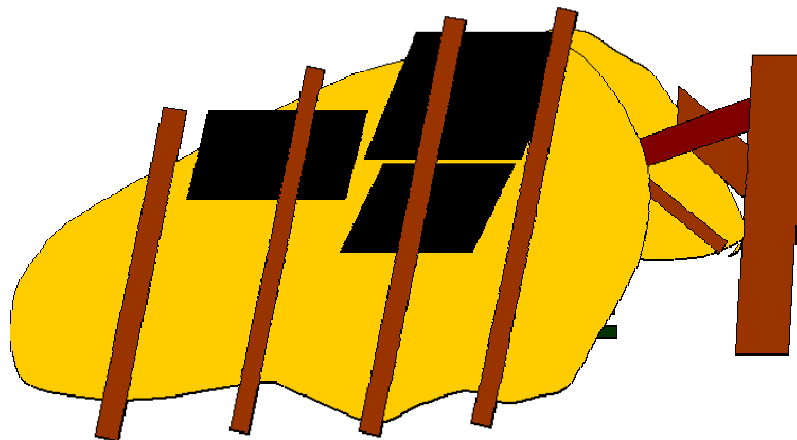
# Activity Idea

## Wilderness Survival

### (continued)



- Stack hunks of bark or moss or anything else you can find to use as shingles. Plastic works great if you have it.
- Pile green or wet shrubs (for fire protection) on top of everything to hold it in place in case there is a strong wind.



- Stuff interior with the driest, fluffiest leaves (cattails or grass). Mat it down and stuff it full again.
  - Make a pile in the work area to cover your head or add to cold spots during the night.
  - Make another pile just outside the opening to plug up the opening.
- Other ideas:

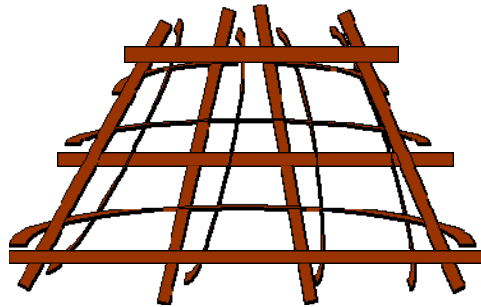
# Activity Idea

## Wilderness Survival

### (continued)



- Make a door out of woven sticks, leaves, and arched woven sticks.



- Stuff clothes with dry grasses.
- You can use rocks if branches and leaves are in short supply. Close up openings with mixture of half mud and half dry grass.
- Cordage - dogbane, milkweed, stinging nettle, cattail - Dry, crush with flat rock, open stem and remove strands. Hold one end in one hand. With your other hand roll against pant leg repeatedly in one direction. Take the middle in your mouth bring ends together. It will twist together naturally.

## Fire

Fire is magical, it is such a powerful tool. First, it helps maintain a positive mental attitude, keeps you in one place, provides warmth, smoke for signaling, and heat for purifying water, cooking and making tools. Don't abuse it, but respect it. Keep fires small so you can keep them under control.

- Watch at all times.
- Choose a location that is dry and out of the wind.
- Dig a shallow pit or dish to protect it from the wind. Pit should be at least 6 feet to the east of the shelter.
- Clear an area at least 4 feet around the pit.

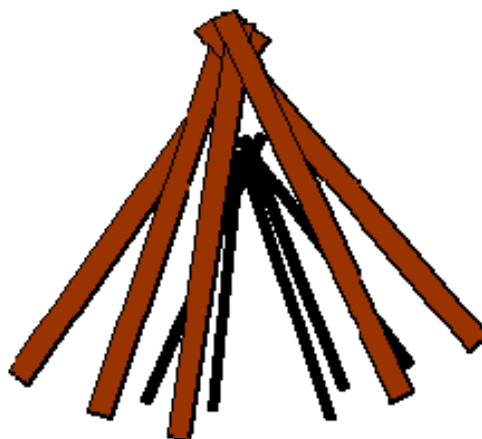
# Activity Idea

## Wilderness Survival

### (continued)



- Build a rock wall about 2 feet high in a "C" shape on east side of pit to reflect heat back toward shelter. Rocks should be a couple feet back from the pit. If the wind is strong, use the wall to block it while starting the fire. Don't use rocks that are wet as they may explode when heated.
- Collect enough fuel to last all night. It should be dry. Check places that get sun - south side of hill, away from direction of storms. Don't get wood from the ground - it will be damp. It should break (indicating it is dead) and not bend, and be dry to the touch. You can dry small fuel inside your clothing, but not next to your skin. Look for dry wood inside dead and rotten logs.
  - Tinder should be very dry. Use the fibrous inner bark (cedar) or seeds (cattails). Loosen and separate fibers.
  - Twigs - less than 1/4" in diameter, dry. Pine needles work well, also.
  - Sticks
  - Logs
- Make a tipi shape out of the twigs with sticks on the outside. Leave an opening for placing the burning tinder.



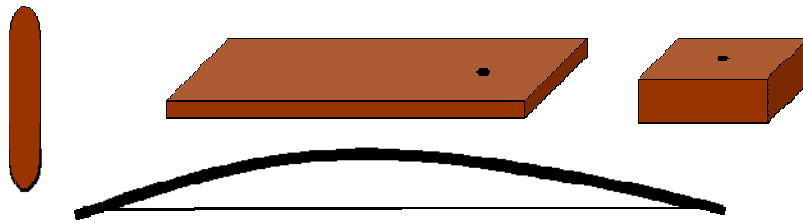
# Activity Idea

## Wilderness Survival

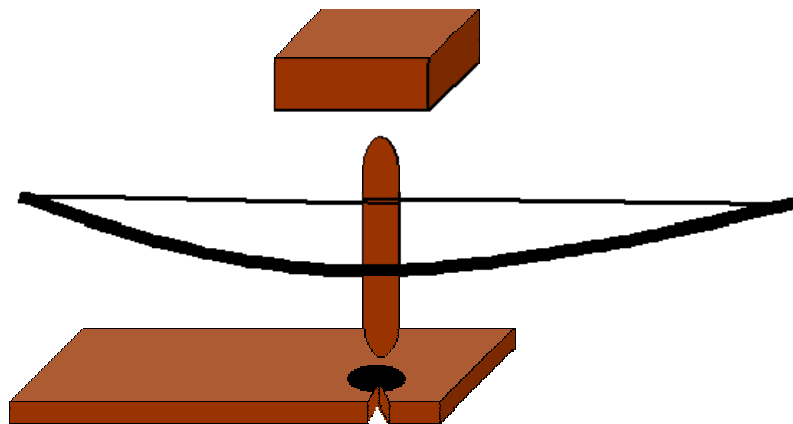
### (continued)



- Fire by Friction with a bow drill is probably the easiest (unless you have matches or a lighter).
  - Parts



- Bow - 1/2" in diameter and 2 1/2' to 3' long and slightly curved; with shoelace, leather, or sinew - you will need to readjust the tension
- Spindle (3/4 - 1" x 8" round) and fireboard (1/2" x 12" x 3" flat) - made from the same wood like cottonwood, willow, cedar, sycamore; not oak (too hard) or pine (resinous)
- Handhold - oak branch or rock
- Construction (assumes you are right handed)



- Make starter holes in fireboard and handhold as shown.
- Kneel with your right knee on the ground and left foot on the fireboard.

# Activity Idea

## Wilderness Survival

### (continued)



- Wrap the bow's cord once around the spindle. It should be tight enough that it feels like it wants to untwist.
- Lean over and rest your chest on your left thigh.
- Your left arm should be against your lower leg holding the spindle perpendicular to the fireboard.
- With the bow in your right hand, keep your right arm straight.
- Move the bow slowly back and forth, level to the ground, using long strokes.
- Increase the downward pressure.
- Stop after a good round impression has been made in the fireboard.
- Cut a notch into the side of the board but not all the way to the center of the impression.
- Lubricate the top of the spindle with oil from your nose or hair or the oil from a nut or acorn. Pine pitch will also work, but don't use water.
- Making a fire - it takes lots of practice
  - Make sure the surroundings are dry or at least work on a dry piece of bark.
  - Fluff up the tinder and form it into a bird's nest.
  - Place the tinder directly under notch.
  - Using the position described above, start moving the bow back and forth with long strokes.
  - Start slow and then apply more downward pressure and increase speed.
  - As it starts to smoke you'll see a brown powder forming.
  - If the bow's cord becomes loose allowing the spindle to slip, stop and tighten up the cord.
  - Push harder and move faster.

# Activity Idea

## Wilderness Survival

### (continued)



- When you see a coal glowing, stop, and carefully place it in the center of the bird's nest.
- Hold the bird's nest up in your hands and gently blow on the coal.
- When the tinder catches, place it inside the tipi and blow or fan it until it catches.
- Fire by Sparks
  - Flint and steel or magnesium (more widely available).
  - Place a cotton ball or dryer lint very close to sparker.
  - Cotton/dryer lint will burn for a few seconds on its own. Putting a little Vaseline or candle wax on the cotton ball/dryer lint will make it burn for a few minutes.
- Other things that burn well
  - Alcohol (be careful as the flame is invisible)
  - Trick birthday candles
  - Hand Sanitizer (contain lots of alcohol - beware of invisible flame)
  - Potato chips
- Heat dry rocks in a fire for boiling water and cooking food.
- Large hot rocks can be buried 6 inches under ground inside shelter to keep it warmer.
- Make a spoon or bowl starting with a dry stick or log. Choose a piece of wood without cracks or knots and that doesn't pop a lot in the fire. Place burning coals on top, hold them in place with a stick, and blow slow and steady on them. Scrap out burnt area. Repeat until desired shape.
- **Practice Activities** - What tinder is available? See which works best. Start campfires with fire by friction. Make a spoon or bowl. Make a fire starting kit.

Scout Name: \_\_\_\_\_ Unit #: \_\_\_\_\_ Date: \_\_\_\_\_

Requirements Last Revised: 2007 (not effective until 2008)



# Wilderness Survival

## Merit Badge Requirements

1. Show that you know first aid for injuries or illnesses likely to occur in backcountry outings, including hypothermia, heatstroke, heat exhaustion, frostbite, dehydration, sunburn, stings, tick bites, snakebite, and blisters.
2. Describe from memory the priorities for survival in a backcountry or wilderness location.
3. Describe ways to (a) avoid panic and (b) maintain a high level of morale when lost.
4. Tell what you would do to survive in the following environments:
  - a. Cold and snowy
  - b. Wet (forest)
  - c. Hot and dry (desert)
  - d. Windy (mountains or plains)
  - e. Water (ocean or lake)
5. Make up a personal survival kit and be able to explain how each item in it is useful
6. Show that you can start fires using three methods other than matches.
7. Do the following:
  - a. Tell five different ways of attracting attention when lost.
  - b. Show how to use a signal mirror.
  - c. Describe from memory five international ground-to-air signals and tell what they mean.
8. Show that you can find and improvise a natural shelter minimizing the damage to the environment.
9. Spend a night in your shelter.
10. Explain how to protect yourself against insects, reptiles, and bears.
11. Show three ways to treat water found in the outdoors to prepare it for drinking.
12. Show that you know the proper clothing to wear in your area on an overnight in extremely hot weather and extremely cold weather.
13. Explain why it usually is not wise to eat edible wild plants or wildlife in a wilderness survival situation.