**Wilderness Survival merit badge requirements**

1. Do the following:
   1. Explain to your counselor the hazards you are most likely to encounter while participating in wilderness survival activities, and what you should do to anticipate, help prevent, mitigate, or lessen these hazards.
   2. Show that you know first aid for and how to prevent injuries or illnesses likely to occur in backcountry settings, including hypothermia, heat reactions, frostbite, dehydration, blisters, insect stings, tick bites, and snakebites.
2. From memory, list the seven priorities for survival in a backcountry or wilderness location. Explain the importance of each one with your counselor.
3. Describe ways to avoid panic and maintain a high level of morale when lost, and explain why this is important.
4. Describe the steps you would take to survive in the following exposure conditions:
   1. Cold and snowy
   2. Wet
   3. Hot and dry
   4. Windy
   5. At or on the water
5. Put together a personal survival kit and be able to explain how each item in it could be useful. ([**Sample Kit**](http://boyscouttrail.com/boy-scouts/survivalkit.asp))
6. Using three different methods (other than matches), build and light three fires.
7. Do the following:
   1. Show five different ways to attract attention when lost.
   2. Demonstrate how to use a signal mirror.
   3. Describe from memory five ground-to-air signals and tell what they mean.
8. Improvise a natural shelter. For the purpose of this demonstration, use techniques that have little negative impact on the environment. Spend a night in your shelter.
9. Explain how to protect yourself from insects, reptiles, bears, and other animals of the local region.
10. Demonstrate three ways to treat water found in the outdoors to prepare it for drinking.
11. Show that you know the proper clothing to wear while in the outdoors during extremely hot and cold weather and during wet conditions.
12. Explain why it usually is not wise to eat edible wild plants or wildlife in a wilderness survival situation.

1. Do the following:

* 1. Explain to your counselor the hazards you are most likely to encounter while participating in wilderness survival activities, and what you should do to anticipate, help prevent, mitigate, or lessen these hazards.

M 9-11

By following the seven points of the BSA’s Trek Safety plan, you can limit potential hazards.

1. Qualified supervision – Make sure your group has an adult who understands the potential risks involved and can take responsibility for the group’s safety.
2. Keep fit – Train for a trek just like you would any other athletic event. Start slowly and gradually increase duration and intensity to build fitness and stamina.
3. Plan ahead – Trips should match the skill level and fitness of the members of the group. Get permission from land owners. Research terrain, elevation, trails, wildlife, campsites, weather, and environmental issues. Know where you are going and what to expect.
4. Gear up – Get maps of the area. Take equipment (including a first aid kit) and clothing appropriate for the weather. Wear proper protection from the sun, insects, and animals. Drink plenty of water to stay hydrated.
5. Communicate clearly and completely – Complete a trip plan and share the details with someone back at home.
6. Monitor Conditions – Leaders are responsible for making good decisions based on their knowledge of the group’s abilities. Keep an eye on weather conditions before and during the trip. Continually monitor your food and water, the group’s morale, and their physical condition.
7. Discipline – Make sure everyone knows the rules and procedures for safe trekking. When participants know the reasons behind the rules, they are much more likely to follow them.

C 3-4, 15-16

1. Weather

2. Plan ahead; know where you are going and what to expect

3. Adjust clothing layers to match changing conditions

4. Dehydration; drink plenty of water

5. Keep fit

6. Lightning; avoid the summits of mountains, crests of ridges, and meadows

7. If the threat of lightning is great, the group should spread out and squat with feet close together

8. Treat water

9. Use bear bags

10. Take care of your gear

11. Let others know if you are having difficulties

* 1. Show that you know first aid for and how to prevent injuries or illnesses likely to occur in backcountry settings, including hypothermia, heat reactions, frostbite, dehydration, blisters, insect stings, tick bites, and snakebites.

M 52-59

**Hypothermia** – body loses more heat than it can generate; p. 141

Symptoms – cold, numb, fatigued, irritable, increasingly clumsy, uncontrollable shivering, slurred speech, poor judgment

Treatment – move person into a shelter and get them into dry, warm clothes, zip into a sleeping bag or wrap in a blanket, cover their head, drink small amounts of warm liquid (no caffeine), provide warm water bottles to hold in armpit and groin areas

**Frostbite –** painful and numb ears, nose, fingers, or feet; p. 140-141

Symptoms – grayish-white patches on skin (frostnip), pain, numbness

Treatment – For frostnip, move to a shelter and warm affected area, ear or cheek with palm of bare hand, hands under clothing against armpit, toes by putting bare feet against warm skin of your belly

**Dehydration** – body loses more water than it consumes; p. 137-138

Symptoms – dark urine, weariness, headache, body aches, confusion

Treatment – drink plenty of water, POPC

**Heat Exhaustion –** body is getting too hot; p. 139

Symptoms – pale, clammy skin, nausea, headache, dizziness, fainting, muscle cramps, weakness, lack of energy

Treatment – move to shade, drink small amounts of fluids, apply cool, wet cloths to skin and fan them

**Heatstroke** – person’s core temp rises to life-threatening levels (>105 F); 139

Symptoms – hot, sweaty red skin, confusion, disorientation, rapid pulse

Treatment – move to shade location, loosen clothing, fan the person and apply wet towels, apply wrapped ice packs under armpits, neck and groin, drink small amounts of cool water

**Blisters** - pressure and friction cause sublayers of the skin to separate and fill with plasma; p. 125-126

Symptoms – hot spots, tenderness

Treatment – use moleskin or molefoam immediately when the area becomes tender, change socks if wet, wear gloves, wear a pair of thin synthetic socks under regular hiking socks, do NOT pop!

**Insect Stings -** can be painful, may cause infection; p.132

Prevention – long sleeves and long pants when in woodlands and fields, button your collar, tuck in your pants, insect repellent

Treatment – for bee or hornet stings, scrape away the stinger with the edge of a knife blade, do NOT squeeze the stinger, apply an ice pack to reduce pain and swelling

**Tick Bites -** small blood suckers that bury their head in the skin; p. 131

Prevention – long sleeves and long pants when in woodlands and fields, button your collar, tuck in your pants, and inspect yourself daily

Treatment – use tweezers to grasp the tick close to the skin and gently pull, do NOT squeeze or twist, may use heat; wash with soap and water and apply antiseptic

**Snakebite -** venomous snakes in the US are pit vipers (rattlesnakes, copperheads, and cottonmouths) and coral snakes; p. 129

Symptoms – sharp, burning pain

Treatment – Nonvenomous: treat the same as a puncture wound, wash with soap and water, apply antibiotic ointment, and cover with a sterile bandage

Venomous: keep calm, wash, remove jewelry, keep limb level with the heart, do NOT apply ice or cut or suck the wound, carry out, call 911, treat for shock

1. From memory, list the seven priorities for survival in a backcountry or wilderness location. Explain the importance of each one with your counselor.

M 20-39; S 253-255

1. **STOP** – Stop, Think, Observe, Plan
   1. Stop – The moment you think you might be lost or feel fear, stop immediately. Put your hands in your pockets and take a deep breath. Once you have taken care of your and your group’s immediate safety, relax as best you can. Drink water, eat a snack, and think.
   2. Think – Assemble your group and figure out what is really going on. If you think you are lost, study the map to try to determine where you are. Look for landmarks, contours, streams, or lakes. If you don’t have a map, figure out where your last known location was. Don’t go anywhere yet. Stop and think.
   3. Observe – Assess the immediate situation. Does anyone need first aid? How’s the weather? Where is shelter? Inventory your supplies. What clothing do you have? Can you improvise with what is available? Stop, think, and observe.
   4. Plan – When you have figured out what the situation is, the group can put together a plan for what to do next. Create your plan based on what you have observed, what equipment you have, what resources are available, and how you can keep yourself safe. Wait as calmly as you can for help to arrive. Be cautious. Don’t make your situation worse by acting hastily. Follow the plan you left behind. Most people are found within 24 hours of becoming lost or encountering difficulties.
2. **Provide First Aid** – Treat life threatening injuries or illnesses immediately. Take the time to examine anyone who has been hurt, and decide on a course of action for that person.
3. **Seek Shelter** – If you get too hot, you might suffer heat exhaustion or heatstroke. If you get too cold, hypothermia can set in. If your core temperature rises or sinks more than a few degrees, it will be hard to think and function. It may even lead to unconsciousness or death. Helping your body maintain its ideal temperature without using excess energy by having shelter can allow you to survive long enough to be rescued. Keep your clothing dry and layer. Shelter provides another layer of insulation.
4. **Build a Fire** – In cold weather, a fire can be important for maintaining body warmth, melting snow for water, drying out clothing, signaling for help, and raising morale.
5. **Signal for Help** – This can be very important if you are lost or if others in your group are injured and cannot be moved.
6. **Drink Water** – You can survive days without food, but only hours in hot weather. Water is necessary for every bodily function. The body can have a difficult time regulating temperature without hydration.
7. **Don’t Worry About Food** – Being hungry is unpleasant, but it is not that important. When everything else has been taken care of, you can inventory your food supplies. The amount of energy you would burn to try to trap or catch fish or animals will likely outweigh the benefit.
8. Describe ways to avoid panic and maintain a high level of morale when lost, and explain why this is important.

M 19-20

Keep a positive attitude. Having a willingness to survive is a key factor in getting through a difficult situation. Drink water and build a fire to boost morale. Focusing on the seven priorities for survival, executing them properly, and having faith in your plan is the best way to be rescued quickly. Moving in random directions that are not part of your original trip plan will make it more difficult for rescuers to find you.

1. Describe the steps you would take to survive in the following exposure conditions:

M 41-44

* 1. **Cold and snowy** – Avoid hypothermia by staying warm and dry. Find shelter and light a fire. You may be able to dig a shelter in the snow if it is deep enough. Melt snow over a stove or fire or use a ground cloth full of snow to melt in the sun to collect water.
  2. **Wet** – Try to stay dry and warm. Build a fire if able. You may need to move to a more open area, but make sure you mark your route clearly in case you need to come back.
  3. **Hot and dry** – Rest in a shady spot in the day and complete necessary activities in the cooler evening and early morning. Wear sun protection and a hat.
  4. **Windy** – Wear a windproof outer layer, like a jacket, rain gear, tarp, or ground cloth. Seek shelter on the calm side of a rock or tree.
  5. **At or on the water** – A capsized water craft may still float. Try to get as much of your body out of the water as possible. If not, conserve energy by floating with your PFD, your head positioned so you can breathe, and your legs drawn up toward your trunk. Huddle together if you are with others. If you are in a river, ride on your back with your feet pointed downstream. If you are in a life raft, inventory what is available and follow directions.

1. Put together a personal survival kit and be able to explain how each item in it could be useful. ([**Sample Kit**](http://boyscouttrail.com/boy-scouts/survivalkit.asp))

M 12-14; S 238-239, 268

Start with the Outdoor Essentials:

1. Pocketknife – all-purpose tool; keep it sharp and clean

2. First-aid kit – treat a variety of minor injuries, provide initial care

3. Extra clothing – survive worst conditions that can be reasonably encountered

4. Rain gear – stay dry!

5. Water – use a lightweight unbreakable container with a secure lid

6. Flashlight – when it gets dark

7. Trail Food – burn a lot of calories

8. Matches & fire starters – build a fire in an emergency

9. Sun protection – SPF 30 or more, lip balm, sunglasses

10. Map & compass – identify landmarks and find your way

Add the following:

1. Duct Tape – wrap a length around a plastic water bottle to make repairs

2. Whistle – heard over longer distances than shouting & uses less energy

3. Signal Mirror – attract attention from aircraft or distant search teams

4. Thin Wire – used to repair camping gear

5. Garbage Bag – rain gear, protect equipment from rain, collect rain

6. Fishing Line and Hooks – 50’ to help with repairs or fish for food

1. Using three different methods (other than matches), build and light three fires.

M 29-33

Gather three types of flammable material (in survival situations, gather three or four times as much as recommended):

1. Tinder – fine, dry material that will light quickly. Pine needles, inner bark of dead branches, weed fluff, dry grass. Gather a double handful.

2. Kindling – material that will burn easily. Twigs no bigger than a pencil. Gather a small armload

3. Fuel – dead and downed wood no bigger than your wrist. Place fuel wood near the fire and protect it with a ground sheet. In wet weather, look for small, dry branches near the bases of trees where larger branches above kept them dry.

Make the fire lay:

Prepare the fire lay properly to improve your chances of keeping the fire lit. A tepee fire lay works well. Place a big, loose handful of tinder in the center of the fire site. Mound plenty of kindling over the tinder. Then, arrange small and medium sized sticks of fuel around the kindling like a tepee. Keep an opening on the side the wind is blowing so the air can reach the middle of the fire.

Fire-lighting methods:

1. **Matches and Lighters** – preserve matches by preparing the fire before you light it. Carry matches in a waterproof container. If you have a butane lighter, guard it against moisture and cold by storing it in an inside pocket close to your body.

2. **Magnifying Lens** – baseplates of some compasses, eyeglasses, a magnifying glass, camera lens, binoculars, and telescopes are possibilities. Hold the lens so the sunlight is concentrated down to a bright pinpoint on your tinder.

3. **Flint and Steel** – form your tinder into a bird nest shape the size of a softball. Holding the flint just above the tinder, strike it with the steel to direct sparks into it. Use a downward motion. Nurse the spark into a flame by blowing on it very gently. When the tinder and kindling catch fire, push it underneath your fire lay.

4. **Fire by Friction** – create a bow and spindle. For the bowstring, use a piece of nylon cord, shoestring, or a cord off a tent, pack, or tarp. The spindle should be made of very dry hardwood. The hand block has a depression carved into it to fit the top of the spindle and should also be made of hardwood. The fireboard is a softer wood that is also dry. Whittle a notch into the fireboard so that the spindle fits into it, then tuck some very find tinder beneath the notch. Twist the bowstring once around the spindle, then hold the spindle upright with one end against the notch in the fireboard. Kneel down and put one foot on the fireboard to keep it from moving. Draw the bow back and forth to twirl the spindle, holding it steady with the hand block.

1. Do the following:

M 34-37

* 1. Show five different ways to attract attention when lost.

1. **Noise** – three blasts from a whistle or other source every minute or so

2. **Electronic Devices** – cell phones may have coverage but make sure the battery is charged before you leave; satellite communicator

3. **Mirrors and Lights** – when the sun is up, a reflected flash of light can be seen for miles

4. **Color and Motion** – hanging brightly colored gear on tree branches

5. **Fire and Smoke** – light attracts attention at night, smoke in the day

6. **Ground to Air Signals** – allow you to communicate with air rescue

* 1. Demonstrate how to use a signal mirror.

Sight a target through the hole in the center of the mirror or by looking just over the mirror’s top edge. Hold your extended arm in line with the target and adjust the angle of the mirror so that reflected light illuminates the fingers of your hand raised to form a V through which you see the target.

* 1. Describe from memory five ground-to-air signals and tell what they mean.

Make your symbols as big as you can. Use whatever is on hand to make them easily seen from the air: rocks, overturned sod, piles of branches, and pieces of clothing or equipment. Laying out signals in a north to south direction will create the most effective shadows to help outline the signal.

1. V – require assistance

2. X – require medical assistance

3. N – no

4. Y – yes

5. Arrow – proceeding in this direction

1. Improvise a natural shelter. For the purpose of this demonstration, use techniques that have little negative impact on the environment. Spend a night in your shelter.

M 23-28

Shelter Structures

A shelter adds another layer to your clothing by insulating and blocking the wind. Assess the materials around you and make a plan to build an effective shelter. You want the shelter to do the job but take as little energy as possible to set up. A lot of body heat can be lost through direct contact with the ground. Insulate the floor with a sleeping pad, evergreen boughs, pine needles, or dry leaves. In a hot environment, find shade in a gully, under a tree, large shrub, or rock outcrop. Scoop out a hollow in soft ground.

Building a Shelter

The site should be relatively level but sloping and high enough to provide adequate drainage. The site should not be exposed to wind or drifting sand or snow. Don’t choose a site under dead branches or close to a dead tree. Is there plenty of firewood close by? Evaluate the risk of rock falls, landslides, flood, avalanche, lightning or other hazards. A good site will be near water but not close enough to be threatened by flooding. A small shelter means less work to build and less area to heat. If using a fallen tree, rock, or root base, build a framework by propping up branches that are 1 to 3” in diameter against the leeward side. Point the tips of the branches downward to form a 60° angle with the ground. Weave smaller branches through the larger ones and work large pieces of bark and boughs into the framework. If you have a rescue blanket or large sheet of plastic, drape it over the framework and anchor it with rocks. In a real survival situation, use live branches if needed. Pull over a sapling so that it snaps 4 to 5’ above the ground, but don’t break it off completely. Leave the top hinged to the trunk with the tip on the ground. Prop branches on both sides and weave in smaller branches.

Snow Shelters

Snow can insulate from the cold and block the wind. The simplest snow shelter is a burrow dug or tramped into a drift. Be sure to mark the location.

1. **Tree Pit** – the area underneath a tree can be nearly free from snow. Crawl underneath and form a small living space. Bare earth radiates some heat, so remove the snow from the floor if you can.

2. **Snow Pit** – if the snow is deep enough, dig a long, narrow pit for an emergency shelter. Use a tarp or ground cloth weighed down by rocks, snow, or branches to form a roof. Cover the roof with several inches of snow for insulation. Insulate the floor with a pad. Fill the entry with your pack or more snow. Poke a few ventilation holes near the entrance.

3. **Snow Trench** – when the snow is compacted, cut the snow into blocks. Lean the blocks together to form a pitched roof.

4. **Snow Cave** – provides great protection but takes a lot of time to build. Be careful not to get your clothing or gear wet from sweat or by digging. Burrow the tunnel angling upward. This will help trap heat. Smooth the roof out. Use a pole or stick to punch several ventilation holes at 45° angles to the floor.

1. Explain how to protect yourself from insects, reptiles, bears, and other animals of the local region.

M 47-49; S 128-133

Insects

Use insect repellent if it’s available. Wear a long-sleeved shirt, long pants, and a hat. Clothing treated with permethrin helps repel insects. Tie a bandanna around your face or use a spare T-shirt to protect your head. Try smoothing a layer of mud on exposed skin. Build a fire and stay close to the smoke. Consider moving to higher or windier ground.

Reptiles

Use a hiking stick to poke around stones and brush ahead of you when walking through areas where snakes are common. Watch where you put your hands as you collect firewood or climb over rocks and logs.

Predatory Animals

Be aware of the types of animals you might meet. Wolves, coyotes, and cougars are curious. Face them and slowly retreat. Do not approach, run, or play dead. Make yourself as big as possible by waving your arms and clothing above your head. Make a lot of noise. If you are cornered, throw rocks and sticks.

Bears

When hiking, alert bears of your approach by making noise. Never approach or provoke a bear. Do not run or shout. Stay calm, back away, and avoid eye contact. Set up your sleeping area 200’ from where you cook and eat. Allow no smellables in your sleeping area. Use a bear bag or canister when able. Dispose of dishwater 200’ from your sleeping area.

1. Demonstrate three ways to treat water found in the outdoors to prepare it for drinking.

M 38-39; S 240

Treat any water you collect before drinking it, but if that isn’t possible, drink it anyway. The danger of becoming dehydrated outweighs the possibility of becoming ill.

1. **Boiling** – Bringing water to a boil for a full minute will kill most organisms. Uses a lot of energy.

2. **Filtering** – Some filters pump water through pores small enough to strain out bacteria and parasites. Others contain chemicals or carbon to make water safer to drink. Can be used multiple times, but is time consuming.

3. **Treating** – Most chemical tablets are added to a quart of water, then you must wait 30 minutes before drinking. They are easy to use and should be part of every survival kit. They degrade over time.

1. Show that you know the proper clothing to wear while in the outdoors during extremely hot and cold weather and during wet conditions.

M 15-17; S 241-246

Choose items of clothing that, when combined, will meet the most extreme weather you expect to encounter. As you exert yourself or the weather warms, remove layers until you are comfortable. When you get cooler, add the layers until you are comfortable.

Wool is durable and water-resistant and can keep you warm even when wet. It is a good choice for cold weather. Socks, hats, sweaters, and mittens.

Cotton is cool and comfortable. It is a good choice for hot weather in dry environments, but as it becomes wet, it loses its ability to insulate. It is slow to dry. Shirts and shorts.

Synthetics are sturdy and comfortable and maintain warmth even when wet. Underwear, shirts, sweaters, jackets, pants, mittens, rain gear, and hats.

No matter how clear the skies are, you should take a rain jacket and pants, especially in the summer when there is a chance of afternoon thunderstorms. It can be used as an insulating layer in a survival situation.

1. Explain why it usually is not wise to eat edible wild plants or wildlife in a wilderness survival situation.

M 39

Experts in wilderness survival can tell which plants are safe to eat and which might cause intestinal stress or even poisoning. Unless you are absolutely sure of the identity of a plant and know it’s safe to eat, it’s best to leave vegetation alone. The same is true of wildlife. In most cases, it is more useful to use your energy to improve your shelter and gather water than trying to catch an animal or fish.

If you have to eat something, insects (three body parts, six legs, and antennae), grubs, slugs, and worms are best. Fuzzy, over six legs, and bright colors mean avoid. You may want to cook first. Boiling allows you to drink remaining nutrients but does not taste good.

**Notes**:

S – Scout Handbook 2017 printing

M – Wilderness Survival Merit Badge pamphlet 2019 printing

C – Camping Merit Badge pamphlet 2019 printing