Wilderness Hiking Course

Training Handbook

girl scouts
san diego

Description: The wilderness hiking course (WHC) is our council's one-day foundation course for all levels of hiking and backpacking adventures.

Purpose: This course provides girls and adults the skills and knowledge necessary to day hike safely, whether it's an afternoon jaunt in Mission Trails or a full day exploring Yosemite's wilderness. As a foundation for outdoor exploration, WHC provides a starting point for key backpacking skills, and its related gear and practices.

Girl objectives: Trainers will deliver the skills and knowledge to hike safely, and encourage development of self-reliance, self-responsibility, independence and good judgment. Hiking and backpacking is where we *really* can develop courage, confidence and character, and provide girls with the ultimate outdoor leadership experience.

Adult objectives: Trainers will deliver the outdoor skills and knowledge, plus the skills to lead girls in the wilderness. Adults will learn Girl Scout hiking protocol and ideals, our council's standards and how to encourage girls to lead, take charge and be self-sufficient and safe.

Course Topics and Expectations

Expectations

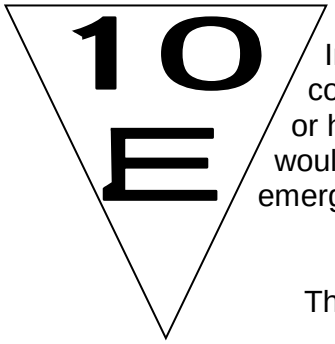
Our overall goal is to deliver the skills and knowledge necessary to dayhike safely, and provide a foundation for the basic backpacking training.

- For beginners, we'll deliver a strong foundation of skills and knowledge
- For intermediates, we'll augment skills and knowledge with Girl Scout standards
- For advanced hikers, we'll connect skills and knowledge with Girl Scout ideals
- With all trainees, we'll promote girl self-sufficiency, decision-making and leadership

Separation of girls and adults

The reason we separate girls from adults during trainings is to emphasize the importance of girl independence, self-sufficiency and developing confidence. We want our girls in the take-charge position so they can develop excellent decision-making skills and learn the crucial importance of self-responsibility in the wilderness. Ultimately, we hope girls and their parents will spend countless blissful days hiking and backpacking together.

The 10 Essentials



In the 1930s, the Mountaineers — a Seattle-based hiking, climbing and conservation organization — came up with a list of 10 essential items no climber or hiker should be without. Experience rescuing others taught them that if hikers would just carry these 10 essentials, they would be able to survive backcountry emergencies until help arrived.

The 10 Essentials should be carried by every hiker at all times:

To find your way

1. Flashlight (with spare batteries and spare bulb if applicable)
2. Topographical map — along with the ability to interpret the map
3. Compass — and the knowledge to use it

In an emergency

4. Pocket knife
5. First Aid kit (including personal emergency medications, etc.)
6. Waterproof matches (strike anywhere matches in waterproof container)
7. Firestarter (a small candle in waterproof container works well)

For your protection

8. Sun protection (shade hat, sunglasses, sunscreen and lip block)
9. Cold protection (extra clothing as the weather demands: fleece sweater, jacket, gloves, beanie, poncho/water-proof jacket)
10. Extra food and water (e*xtra* is beyond what you expect to use during an outing)

The extra essentials

11. Toilet paper (hygiene kit)
12. Whistle — signal an emergency by blowing your whistle in series of threes
13. 10-15 feet parachute cord
14. Bandana

As time passes, new technology (GPS, cell phones, etc.) have redefined what items people consider essential. The original 10 Essentials are still the best presentation of the base items every hiker should carry.

Boots and Socks

Overview

- Components of a sturdy shoe (soles and uppers)
- Inserts and waterproofing
- Socks (no cotton, wool and alternatives, liners)
- Boot-fitting tips

Components of a sturdy hiking shoe

Sole:

- Grip: no slipping and sliding
- Protection: your feet don't feel the rocks
- Rigidity: can't be twisted; the stiffer the sole, the better support of foot, ankle and knee
- Stability: feeling solid on uneven terrain

Uppers:

- Protection
- Waterproof liner (e.g. Gortex): keeps out water
- Gusseted tongue: prevents water from seeping into the boot
- Breathable: allows sweat to evaporate, preventing blisters (leather/fabric often better than synthetic)
- Stability: you feel stable on rough terrain
- Comfort: essential!
  - toe box: wiggle room for toes, but not sloppy; not hitting front of boot
  - heel cup: heel is nestled comfortably, no more than 1/4" slip
  - lacings: tight enough to keep foot locked in place

Materials:

- Synthetic: no animal products, not necessarily more breathable
- Fabric/leather: easy to break in, breathable
- Split grain leather: heavier duty, with seams, fairly easy break-in
- Full-grain leather: heaviest duty, no seams, longest break-in

Inserts and waterproofing

Inserts: valuable for refining fit, supporting arches, day-after-day comfort on the trail
Waterproofing: apply Nikwax, or other recommended product, before each hiking season

Socks

- No cotton
- Wool, Coolmax (wool alternatives)
- Thickness: personal preference of light, medium or expedition weight
- Liners: can help prevent blisters by transferring friction from sock-to-foot to sock-to-sock

Boot-fitting tips

- Try on at the end of the day; wear hiking socks of preferred thickness
- Growing feet: buy inexpensive and put your money into good socks and/or inserts
- Stores: A-16 — helpful, qualified boot-fitting staff; REI — self-serve, but great return policy; Big 5 — self-serve, less expensive, lower quality

Break in your boots to prevent blisters!

Hiking Clothes

Overview

- Wardrobe elements
- Layering system
- Fabric options and NO COTTON
- Vocabulary: wicking, breathable, layering
- Tips
- Check the weather before you go

Wardrobe elements

Layer 1: shorts/pants, tee shirt, shade hat
Layer 2: insulation — fleece jacket/pants, long-sleeve shirt, fleece hat/mittens
Layer 3: down/polyfill jacket, waterproof pants/jacket or poncho

Layering system

Dress in layers of lightweight clothes instead of one or two heavy layers. The layering system helps you adjust easily to varying temperatures while you hike.

Fabric options

- Cotton kills: Cotton retains moisture and doesn't dry quickly, a deadly combination that can suck the heat right out of your body and expose you to hypothermia.
    - Of course, there are exceptions to every rule: desert hikers advocate for cotton tee-shirts for the exact purpose of cooling the body in extreme heat.
- Synthetics: Human-made fabrics that insulate, breathe, wick and or waterproof. Examples are polypropolene, capilene, nylon, polyester; proprietary names: Dri-Clime, Vaporwick, Polartec, Gortex, etc.
- Natural fibers: Wool and silk insulate well, breathe, wick and — in the case of wool — still smell clean after several days on the trail.

Vocabulary

- Layering (above)
- Wicking: A fabric's ability to pull moisture away from the body. Wool is a good example, since it draws moisture away.
- Breathable: A fabric's ability to allow air to pass through. Waterproof jackets want to be breathable so that when you're exercising you don't steam up inside.

Tips

- Zip-off pants: Combine shorts and pants with easy on/off.
- Trash bag poncho: A 45-gallon trash bag (leaf and lawn) will cover you up.
- Easy packing for the day: Put everything you think you might want for your dayhike into the car, then when you reach the trailhead you can scale back if you don't need all the layering. (Don't forget the extra clothes you need as one of the 10 Essentials.)
- Long pant options: Shorts and sweats, long johns under shorts.
- Keep it inexpensive: PE clothes, soccer shorts, basketball jerseys and other sportswear already in your closet are excellent synthetic choices for trail wear.

Check the weather before you go

Always take a look at a weather report so you can plan and prepare the right wardrobe in advance. Look at the nighttime lows, too, so you can estimate how cold it will be when you start out in the morning — and just in case you stay out longer than planned. In our local mountains it can be in the '30s at night, and in the '70s during the day; the morning hike might still be quite chilly when you get out of the car.

Daypacks and Kits

Overview

- Selecting a good backpack
- Packing with kits

Daypack pros and cons

- String pack
  - Pros: often free
  - Cons: thin straps = ouch!
- Fanny pack
  - Pros: smaller profile
  - Cons: is it big enough for your adventure?
- Camelbak
  - Pros: excellent organization, convenient water bag, durable, cushioned straps
  - Cons: heavy, expensive
- School backpack
  - Pros: perfect for getting started, good enough organization, lightly padded
  - Cons: less durable, possibly heavy
- Backpacking day pack
  - Pros: lightweight, adequate organization, makes the leap to backpacking (can be used as a stuff sack), separate sleeve for water bag, insulated sit-upon insert
  - Cons: not padded, not a lot of pockets, expensive

Packing with kits

Separating your gear into smaller kits allows you to be organized and makes your gear easier to find. Examples: first aid kit, hygiene kit, emergency kit, 'quick' kit, foot Rx kit. Each individual will want to organize her essentials in a way that works for her. They can be stored in nylon stuff sacks, pouches or zip-top bags. For the sake of discretion, hygiene kits are best stowed in a nylon sack or paper bag (not a see-through bag).

More Packing with Kits

There are an infinite number of items that can go in your first aid or emergency kits. The three kits you make today are excellent starter kits; feel free to personalize your kits to your needs, and as your first aid training skills grow.

Hygiene kit

- Toilet paper/Kleenex
- Feminine supplies
- Hand wipes/biodegradable soap
- Trash zip-top bag for packing out used toilet paper and feminine supplies

Emergency kit

- Space blanket: insulation against the cold
- 10 feet nylon rope: can be used for lashing, boot lace, etc.
- Whistle: three blasts in succession signals an emergency; clip this to your pack, or put on a piece of nylon rope
- Firestarter: helps start a fire (for warmth)
- Waterproof matches
- Duct tape: multi-use! Blister prevention; patching gear, clothes or boots; etc.
- Pencil: to record information, leave a note
- Needle and thread: for clothing and light gear repairs
- Safety pins: multi-use

First Aid kit

- High Adventure Health History form
- Moleskin: protect blister/heel from rubbing
- Antibiotic cream: protect wounds from infection
- Antiseptic wipes: prep an area for a bandage
- Gauze: two sizes
- Band-Aids: many sizes
- Non-latex gloves: always protect yourself from blood-borne pathogens
- Ace bandage
- Personal medications like inhalers or Epi-pens. The rest of your group should know exactly where you keep these in your pack, so they can be retrieved quickly in an emergency.
- Pain reliever of choice

Minors and medication

Hiking and backpacking medication protocol differs from standard troop or camp practice. Each individual, regardless of age, carries her own medication when hiking or backpacking, to ensure that her meds are within immediate reach in a health emergency. It's essential that every person in a hiking group knows where the Epi-pen or inhaler can be found in a person's pack.

Hiking Hygiene

Overview

- Where to go
- Doing your business
- What to do with the trash
- That time of the month
- Washing up
- Handy, hard-won tips

Where to go to the bathroom

- **Always** tell a buddy you're heading out to the woods for a potty stop.
- Head perpendicular to the trail, about 150-200 feet from water (*leave no trace*).
- Screen yourself behind a tree/rock away from the trail.

Doing your business

- You don't need to dig a hole if you're going to pee. Just go, wipe, place toilet paper in your zip-top bag and put that in your hygiene kit. Wash up.
- For No. 2, dig a 6-8 inch "cat hole" with a trowel or a sturdy stick. The trowel *only* touches the dirt. Do your business, then cover the hole with dirt. Put your toilet paper in the zip-lock bag and put that in your hygiene kit. Wash up!

What to do with the trash

All your bathroom trash is put in the zip-top bag and packed out of the woods. Dispose of *properly*. Leave no trace!

That time of the month

- It's always a good idea to have feminine supplies in your hygiene kit, just in case. Higher altitudes can change your cycle rhythms.
- Always throw used feminine supplies away in your zip-top bag, and dispose of in the trash at home.

Washing up

Poor hygiene is the No. 1 cause of stomach disorders in the backcountry. Always wash your hands after going to the bathroom. Liquid hand sanitizer products are not adequate; use biodegradable soap and water, or sanitary wipes.

Handy, hard-won tips

- Face downhill.
- Always put your gear *uphill.*
- Generally, you'll find a more private spot by heading perpendicular to the trail.
- When you're on switchbacks, you'll find a more private potty spot heading out from the ends of the switchbacks, rather than uphill or downhill.
- *Always* tell a buddy where you're going. The rest of the hiking group waits for you.
- Take your daypack with you; that way, if you get disoriented, you'll still have your whistle handy to signal for help getting back to the trail.
- Use a rock or log to steady yourself when you squat, if necessary.
- An aspirin, broken into your trash bag, will help reduce odors.
- Don't forget to bring extra baggies. Double-bagging No. 2 trash is a good idea.

Map Skills

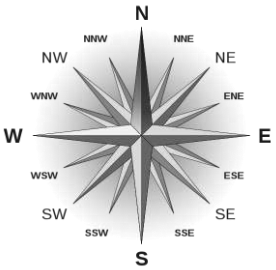
Topographical maps

It is essential to develop superior map-reading skills in order to be effective navigators in the backcountry. Once you can effectively interpret a topographical (or "topo") map, your compass becomes a far more valuable tool, offering you the necessary precision to travel far and wide.

Basic map interpretation

Here's how to interpret the valuable information you can find on your topo map.

Compass points



- The top of your map is north
- The right side of your map is east
- The left side of your map is west
- The bottom of your map is south

Colors

- Blue: water (variations include seasonal streams/ponds, glaciers, swamp, waterfalls, etc.)
- Green: vegetation (chaparral, forest)
- White: landscape without trees or water (rock, sand, meadow)
- Black: human-made features
- Red: primary and secondary roads; land survey marks
- Brown: contour lines

Contour lines

- Contour lines: The brown lines on your topo indicate the elevation above sea level. Think of each line as a closed loop. If you followed the line in the real world, you wouldn't go uphill or downhill; you would stay at the same elevation. Contour lines allow you to interpret the terrain. Lines that are close together represent quick elevation changes — steep terrain. Contour lines that are farther apart indicate less elevation differences — flatter terrain. Contour lines also show you the shape of the terrain: ridges, peaks, plateaus, gullies, etc.
- Contour interval: The distance between each line is indicated on the bottom of your map, near the scale of miles. On a 7.5 minute topo, which provides the best detail for hikers, the interval will be 40 feet (or 20 meters).
- Index line: This thicker, dark brown contour line measures increments of 200 feet (or 100 meters) on a 7.5 minute map.

Scale of miles

This ruler measurement is found at the bottom center of your topo map, and will give you a way to measure distance. Here are two ways to figure out how far you're going to hike (or, "how much farther till we get back?!") using your scale of miles.

- String trick: Ese the string from your compass (or shoelace). Wind the string along the trail on your map to cover the distance you'll be traveling. Compare the length of string you measured on the map to the scale of miles, and *voila* — there's the mileage.
- Using your pinkie: This is much less precise than the string trick, but can give you a ballpark estimate. Measure your pinkie finger against the scale of miles — note where the mile marker compares against your pinkie. Move your pinkie along the trail on the map to get a very broad estimate of the distance you'll be traveling.

Conquering map skills
Learning to read topo maps, and to be able to interact with the information on the map, is really rewarding. Nothing gives you a sense of self-sufficiency like being able to navigate accurately through the wilderness using your map and compass. Map reading and navigating by compass aren't difficult skills, but they take practice and familiarity to develop.

At home

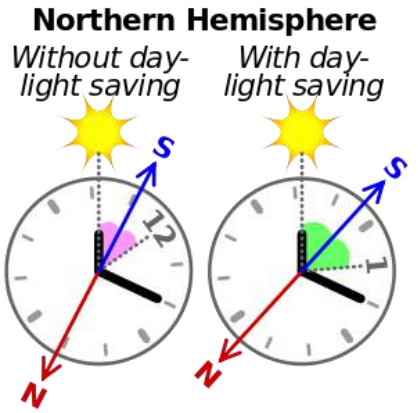
- **The 3-D effect:** Learn to see mountains and valleys, stream beds, ridges, passes and other physical features by studying topo maps in the comfort of your living room. Maps drawn with shade-relief make this skill easier to learn.
- **Planning your trip:** With topo maps and guide book in hand, you can excel at planning and preparing for your trip (a "leave no trace" principle). Studying your maps ahead of time lets you develop a reasonable travel itinerary that works for your entire group.
    - Highlight your trail/route in a bright color.
    - Observe the elevation gains and losses on your route.
    - Measure distances using a string (following your route) and measuring against the scale of miles found at the bottom of the map (or baseplate compass edge).
    - Note any obstacles on your route: stream crossings (high water?), high passes (lingering snow?), steep terrain.
    - Base your itinerary on this information, and plan your meals and gear accordingly. Will you want water-crossing shoes? Will you need a no-cook breakfast one morning to accommodate an early start before climbing a peak?

In the field

- **Orient your map:** When you arrive at the trailhead, or at the start of each hiking day, always take time to sit down and orient your map to magnetic north. By aligning your map with the real world, you will be able to look around you and see the local landscape featured on your map. Both on the map and in your field of vision, find your location, and note nearby features like trails, streams, lakes, ridges and peaks. Consider other nearby features on your map that you can't see right now (a nearby lake, for example) and point in the direction you would have to go in order to get there. This kind of stationary interaction with your map builds outstanding navigational skills, and gives you an accurate sense of where you are, what you see on the map and what you see in the real world.
- **Thumb the map**: Keep your topo handy, and refer to it frequently throughout the day. The more time you spend looking at your map and noting your progress, the savvier you will be in map-reading. As a trip leader, periodically make sure your whole group can point to where they are. A good time to check is at the trailhead, trail junctions and significant landmarks such as creek crossing, passes, peaks and campsites.
- **Play with your map:** Take out your map and compass at rest stops and lunch, and spend a little time orienting your map, and taking bearings on various landmarks around you.
- **Follow a handrail:** A handrail is an orienteering term for any long feature (natural or human-made) that you can follow to your destination, or that will head you off and stop your forward direction. Good examples are creeks, canyons, trails, roads, ridges — you can follow any of these features to reach your destination, or any one of these features can cross your path and alert you to a desired change in direction.

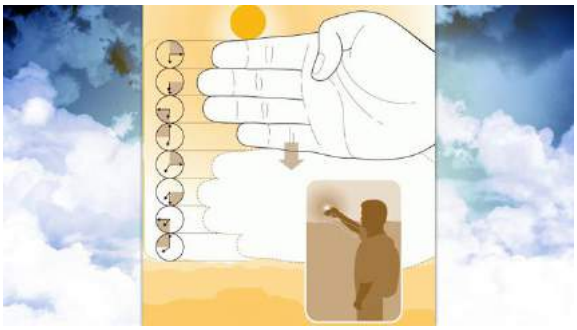
Finding direction with an analog watch:

- Point hour hand toward the sun.
- The south is halfway between the hour hand and 1200 hours (noon). North is in the opposite direction. If watch is on daylight saving time, use 1300 hours instead of 1200.
- You can point the hour hand toward the sun by placing a small stick at the hour hand and move until the shadow lies directly in the middle of the watch.



Hours until sunset:

- Each finger represents 3.75 degrees and the sun moves 15 degrees per hour. That is, 3.75 degrees (one finger) represents 15 minutes.
- Squint to avoid looking directly at the sun.
- Measure how many fingers between the sun and the horizon where it will set.



Use of deliberate offset or intentional error:
If you're trying to go to a particular spot, deliberately shoot for a point that will eliminate the need for you to figure out which way to go once you get to the road (since your navigation might be a few degrees off). For example, you need to get to your car. Navigate toward a point on the road that's a little way to the right of the area you parked your car in. Then you know to turn left when you get to the road.

Moon navigation:
Drop a line along the points of the crescent of the Moon and project to the horizon. The point on the horizon is south of your position.

Contour Line Worksheet

1

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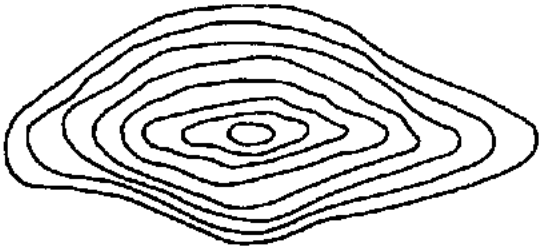

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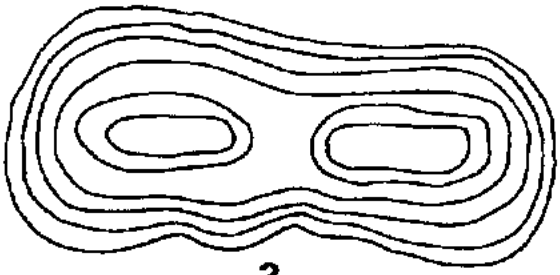

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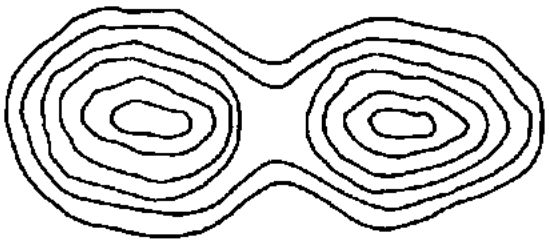

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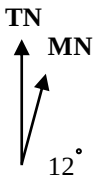
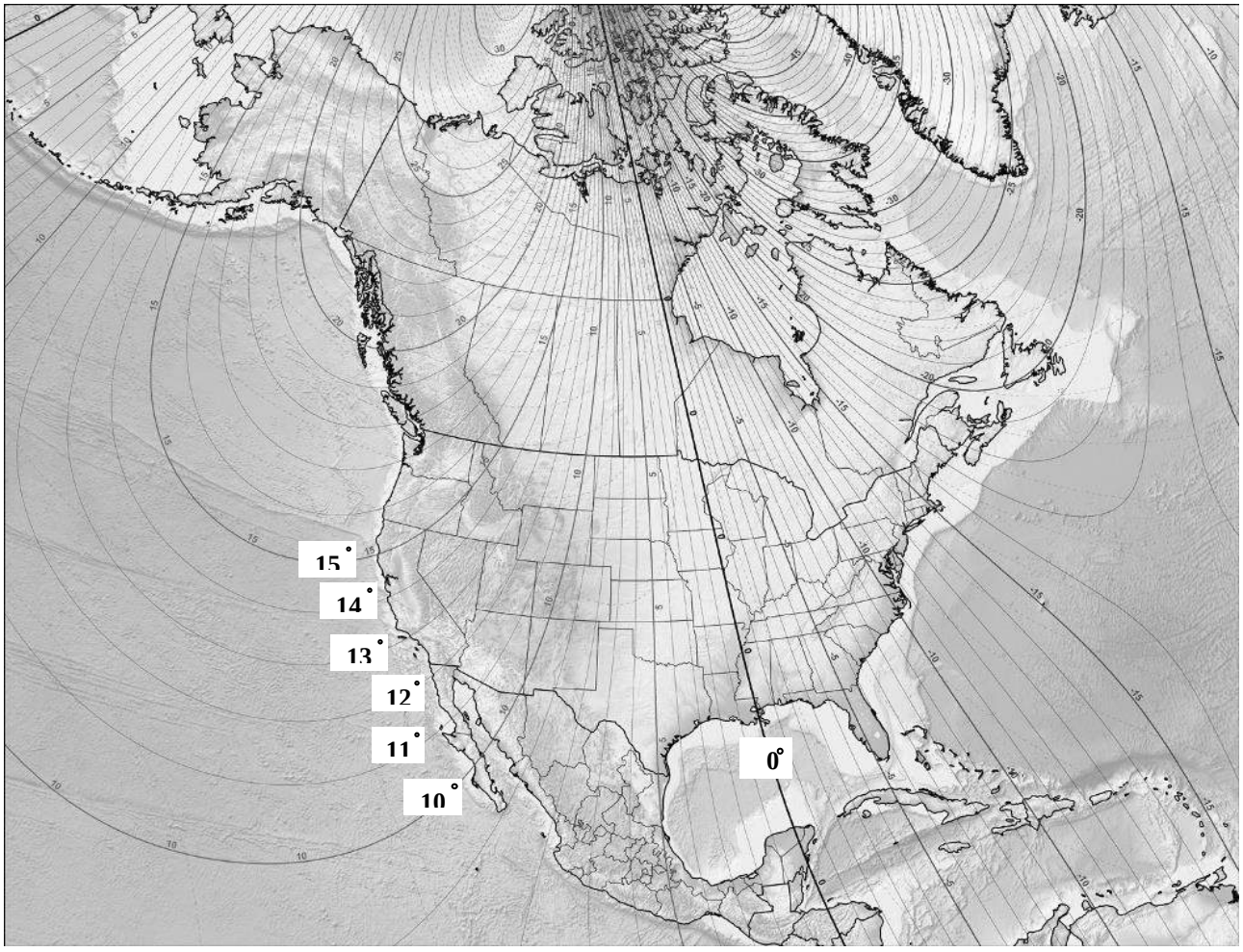
Understanding magnetic north
True north is located at the top of your topo map. Your red, magnetic compass needle, however, points to magnetic north, a shifting location up in the Arctic Circle. In order to navigate accurately with a compass, it's important to understand — and correct for — the difference between the two points.

Declination
This is the difference between true north (the top of your map) and magnetic north (the pull of your compass' magnetic needle). The declination is drawn with an angle on the lower left corner of your topo map. Because your compass is influenced by the magnetic pull of the earth, you need to adjust for this angle when you are taking bearings off your map.



Magnetic Declination in North America 2014



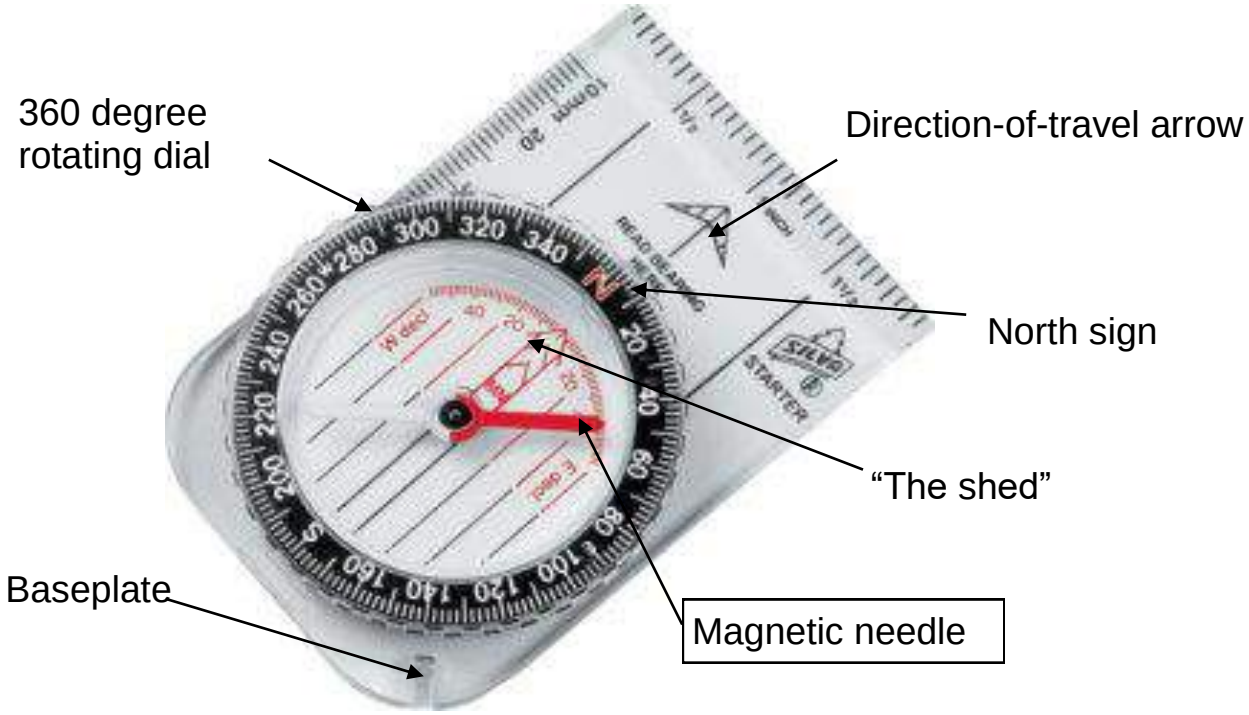
Adjusting your compass for magnetic declination ... easy as 1, 2, 3!

In California:

1. Set your map on the ground.
2. Set your compass dial to north, or 0 degrees, then subtract the declination (located bottom left of your topo).
3. Line up the edge of your compass along the edge of your map. (The direction-of-travel arrow must point to the top of your map — north). Rotate the map and compass **together** until "red's in the shed."

Now your map is aligned with the real world, and your bearings will be accurate.

Parts of a Compass



Orienting your map in San Diego

Q. Why is it important for your map to be oriented to magnetic north?

A. Your compass is influenced by the magnetic pull of the Earth. The compass needle is pulled toward magnetic north, but your map is oriented to true north. If you don't correct this, your navigation will be off — by 12 degrees, in San Diego.

Orienting your map to magnetic north 12 (San Diego declination*)

1. Set your map on the ground.
2. Subtract 12 degrees from north (that's rotating your compass dial to 348 north).
3. Align the edge of the **baseplate** with the edge of your topo. The **direction-of-travel arrow** must point to the top of your map (north). Now, rotate the map and compass together until the red **magnetic needle** is floating in **"the shed."**

Your topo map is now oriented to magnetic north, and is aligned with the real world. You're ready to navigate!

*Magnetic declination is constantly shifting. San Diego is technically 11.5 degrees as of January 2016, which is down from 12 degrees in 2014. You can update old topo maps by checking with a website like www.ngdc.noaa.gov/geomag-web/#declination.

Compass Skills

Handler's tips

- When using a compass, keep the compass pointing perpendicular to your body.
- Always make sure the direction-of-travel arrow is pointing *away* from you, or all your bearings and directions will be backwards.
- Remember, your compass responds to magnetic forces. You can get false readings if you are working over metal (campsite tables are a regular culprit).

Compass vernacular and how-to

- **Bearings:** A bearing is a compass direction. You can follow a bearing, take a bearing from a topo map and take a bearing in the field. When you take a bearing off your map, you are pulling travel directions off the map and loading that onto your compass. Then you can follow that bearing to whatever point of interest you care to reach, using your map to interpret the terrain along the way.
    - **To take a bearing in the field**, point the direction-of-travel arrow on your compass toward a point of interest, such as a peak. Rotate the dial, and put the "red in the shed." The resulting number at the top of your compass is your bearing.
    - **To take a bearing from your map**, first orient your map to magnetic north. Align the side of your compass with two points of interest, for example, your location and Mt. Spencer. Your location is at the bottom edge of your compass, and Mt. Spencer is at the travel arrow end of your compass. Put "red in the shed" and the resulting number at the top of the compass is your bearing.
    - **Follow a bearing:** A more advanced skill and most easily learned in open terrain (above treeline, for example), this means using the bearing as a destination. Once you've taken a bearing off your topo, you can follow it to your destination. Say you're at Muir Lake, and you've got the bearing to nearby Cottonwood Lake #1 on your compass. Stand up, put "red in the shed," and look where your travel arrow is pointing. If you can sight a big feature, say a peak in the background, you can put down your compass and just follow a logical route toward that peak, knowing that you'll arrive at Cottonwood Lake between your starting point and the peak. If you don't have a big feature use as a marker, then you will sight on something closer. When you reach that point, you will sight again on a farther location, repeating this step until you reach your destination.

- **Triangulation:** This allows you to determine your location by taking bearings — and drawing corresponding lines on your map — from two prominent landmarks, then finding the intersecting point — you! Another variation is to take a bearing off a known peak, and intersect it with your trail. The intersecting point is your location.

Hiker tips

- **Recommended reading:** *Be Expert with Map and Compass* by Bjorn Hjellstrom. This outstanding "how-to" handbook will give you plenty of support as you learn to use a map and compass more effectively.
- GPS units and mobile phone apps are valuable navigating tools, but they don't replace the need for a map and compass. Your ability to read a map and use a compass will never depend on battery life or satellite reception. Also, a full-sized 7.5 minute topo map allows you to see the big picture when you're in the backcountry.
- Every person in your hiking group should have their own trail map. The Tom Harrison maps usually cover a larger area and include mileage. As a group, you should invest in 1 or 2 copies of all the 7.5 topos that cover your trip. A 7.5 minute map allows for the best precision in navigation.

Injury Prevention
"Prepare, Be Aware, Share"

Overview

- Get in shape
- Check with doctor
- Pay attention
- Good judgment
- Key risks and concerns
- Review health histories with group
- Trekking poles

Get in shape

- Progression: Build yourself up slowly before tackling an arduous dayhike. Choose your hikes to match your level and skill.
- Strength building: The more time spent hiking over rough terrain, the stronger you'll be.

Check with the doctor

Get thumbs up from a doctor before going, and ask them for sound advice on how to minimize or eliminate these conditions:

- Old injuries
- Recurring pain
- Health conditions

Pay attention

- Look where you're going.
- Watch the weather.
- Observe your fellow hikers.
- Evaluate how *you feel.*
- Stay engaged over obstacles, like snow, creek crossings, boulders.

Good judgment

Probably the most important outdoor skill. Learn to evaluate conditions with an eye toward safety for your entire group.

- Develop a "no penalty" approach: Evaluate risks and concerns, and don't move forward if you sense too big of a penalty in the offing. (Is it risky crossing this river? What's the penalty? Am I okay with that?)
- Help girls develop good judgment and decision-making skills by including them in the evaluation process. If a leader always dictates the terms, how will the girls understand the process of making key, safe decisions? When involved in the safety judgment call, girls will likely make the safe decision.
- Evaluation, discussion and decision-making: just doing this process of analyzing risk helps create important objectivity and allows the excitement of the moment ('gotta reach the summit') to take a back seat to good sense.

Key risks
Risks are the physical challenges presented by terrain, weather or trail conditions and flora/fauna in your area. Identify these risks when you plan your hike, and discuss strategies and prevention with your group in advance.

Key concerns
- Fear/worry: Fear is detrimental in many ways. Fear gets in the way of having fun, but also creates tension and anxiety that translates into low confidence, crabbiness and compromised safety. Concerns need to be acknowledged, and shared with a trip leader or the group.
- Health history: An individual might have a health issue that could limit her on a hike. She needs to share that with her hike leader or group.
- Plan and prepare mitigating strategies before the hike.

Review Health Histories
- Leader should be familiar with health conditions/medications of each hiker in her group.
- Leader needs to discuss and understand the hiker's needs/meds before the hike, and have a strategy in place for dealing with the hiker's concern.
- Ideally, each hiker should be comfortable sharing concerns with her hiking group prior to hitting the trail (health and welfare chat).
- If a hiker carries an inhaler or Epi-pen, every hiker in the group should know exactly where in her pack those meds are kept.

Trekking poles
- Highly regarded for their ability to stabilize hiker, and provide increased comfort, over rough terrain
- Valuable for providing propulsion on the uphills and support on the downhills
- Group leaders might consider trekking poles as valuable emergency gear (like a SAM splint)
- Help eliminate/diminish discomfort in knees, shins
- Features: (all are excellent quality products)
  - Twist locking device (*e.g.,* Leki poles): collapsible, often lightweight; can collapse; locking mechanism will freeze in snowy conditions
  - Flip locking device: collapsible, heavier duty, don't collapse
  - Z-pole (*e.g.,* Black Diamond): lightweight, collapses into three small sections, lightweight, can't collapse; non-adjustable, but come in varying sizes

Day-Hiker Nutrition

Overview

- Food in = Energy out
- Food as fuel
- Food safety
- Nutrition tips

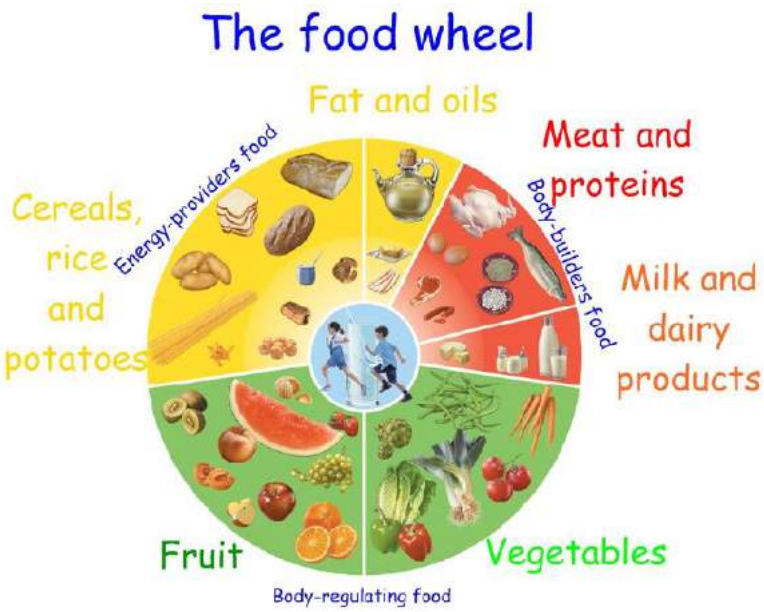
Eat well: One of the keys to an excellent experience in the outdoors

The difference between dragging your feet for 6 miles, only to collapse at trail's end, and being energetic and in good spirits throughout a hike, often comes down to nutrition: what we have consumed versus what we have burned.

Adequate nutrition: The quality and quantity of food (fuel) we consume before, during and after a hike will in many cases be a key factor in the success of the event. Inadequate nutrition, like inadequate hydration, results in diminished enjoyment of the event at best and life threatening situations at worst.

In simple terms: You need to plan to include three types of food in your pack.

1. Energy-producing food (carbohydrates in the form of cereals, rice, and potatoes, with a bit of fat)
2. Body-building food (protein in the form of meat, beans, nuts and milk or dairy products)
3. Body-regulating foods (fruits and vegetables)



Food is energy
Our bodies are burning calories 24/7. A moderately active teenage girl will burn 2,000 calories a day. A dayhike of 6 vigorous miles can add another 600 or more calories to that day's minimum requirement. Skip those calories and performance and mood will suffer.

A calorie is energy: specifically, the amount of energy (heat) required to increase the temperature of 1 liter of water 1 degree Celsius. Food energy is divided into three types: carbohydrate (4 cal/gram), protein (4 cal/gram) and fat (9 cal/gram).

What foods these calories come from, the makeup of these foods and how much we consume are important, but are also an individual decision. Dietary preferences, requirements and sensitivities have to be considered. Individual health, personal eating habits and timing are also factors in our meals. Our aim is not to dictate diet, but to help each person learn what works and what does not.

> **Carbohydrates:** Simply put, carbs are sugars. Simple carbs take very little time to get be ready to burn and, therefore, burn faster (candy, cookies, potato chips) which raises blood sugar levels in a quick burst and then are gone. Complex carbs are slower to metabolize (minimally processed grains, nuts and seeds, beans), will not raise blood sugar as fast, and will maintain those levels over time.
>
> How carbs are consumed is a personal preference. Some prefer to munch all day on any combination of foods, while others break for meals on more traditional schedules. Some favor a steady intake of simple sugars rather than consumption at intervals, while others use a combination of simple and complex to get them through the day. However it is done, the success of any approach is in the results.
>
> **Protein:** Building blocks for muscle, at 4 calories per gram. While protein is an essential part of a healthy long-term diet, the short term, on-the-trail requirement is relatively low. Found in meat, cheese, bean products, nuts and seeds, and grains, these are the building blocks for our vital organs and muscles. Protein tags along on some of our favorite hiker carbs, like nut and seed butters, bread and crackers, bean products and granola. Though protein is an essential part of a balanced diet, it is not necessarily a high-value component of the day-hiker meal.
>
> **Fat:** The mere mention of this micronutrient can turn people away, but this is a high density calorie source that packs a whopping 9 calories per gram, translating into more calories in a smaller (weight) package. As a tagalong in some of our favorite foods, good sources are nuts and seeds. Also found in potted/cured meats and cheese.

Food safety
As a general rule, pack foods that need little or no refrigeration. If a perishable food is chosen, keep it in a cooler for the trip to trailhead and next to a frozen or cold water bottle once it is packed in a daypack.

If mayonnaise is a must for tuna, pack a single-serving foil packet of tuna to squeeze in at lunchtime. Preserved meats like bacon (precooked), salami and pepperoni, or hard and low-fat cheeses or pasteurized packets of string cheese, wax-sealed cheese and Laughing Cow wedges, will all keep until lunch.

Nutrition tips

Pack for success:
Find your own combination of high energy foods with simple and complex carbohydrates, salt and protein. Some dehydrated bean products can be rehydrated in the bag just before they are consumed. Visiting a bulk food supplier can net interesting combinations of your favorite snack bits. Surprisingly, even stores like Target and grocery chain stores can have a great selection of trail-ready foods for our outdoor adventures. Many nut butters and Nutella now come packaged in single serving packets and other snacks. Some likely examples are:

- Nut and seed butters with jelly, honey or Nutella on bread, with crackers, or on a tortilla
- Cheese; salami, tuna or jerky; and hummus with crackers or Fritos
- Snack bars (2 before lunch, 2 after); granola with chocolate and nuts; candy with nuts, like Reese's, Snickers or Payday
- A customer snack mix of nuts, dry cereal, dry fruit and/or candy bits

Pack for the weather:

- Lower temperatures = more calories burned. Pack more food, especially (simple) carbs, than normal.
- Warmer temps = dampened appetite. Make a point of checking that everybody is keeping their food (and water) consumption up.
- High altitude = loss of appetite or even nausea. Pack sugared drink mix, Skittles or chocolate chips to help restore energy and fight altitude sickness.

Pack for the terrain:

- Bring more food for hikes through hilly terrain or at high altitude.
- Hilly trails will slow down your hike, so pack extra food for a longer day.

Pack what you will eat:

- Be sure to have foods *you* enjoy.
- Pack your own to be sure you have what you want and what you need.

Pack for emergencies: Put a little extra something (candy bar, granola bar, gorp) in your bag just in case.

Don't forget recovery: After that hike, be sure to get a good balanced meal: protein for muscle recovery and carbs to recover your stored energy.

Fruits and veggies: Get them where you can. Raisins, Craisins, apple chips, banana chips. On a single dayhike (vs. a multi-day backpacking trip), you can bring fresh food. Just remember to bring the inedible bits, like peels and cores, back in a baggie.

Remember: Eating well is one of the keys to success in an outdoor activity. Don't skimp on the food!

Hiking First Aid

Overview

- Blisters
- Bites
- Hypothermia
- Dehydration
- Heat exhaustion
- Heat stroke
- Leader requirements
- Plan ahead and prepare
- On the trail

Blisters

Cause: Friction and rubbing creates a hot spot, which turns into a fluid-filled blister.

- Prevention
  - Pre-treat known rubbing areas with sports tape, duct tape or moleskin.
  - Break in boots. Wear sock liners and non-cotton, well-fitting socks.
  - Always stop and treat when you feel rubbing, or a hot spot developing on your foot.
  - Treating a hot spot is preferable to patching a painful blister.
- Treatment
  - Wound management: Keep it clean, moist and covered; current WFA protocol allows a blister to be pierced with a sterilized needle, drained and treated as an open wound.
  - Comfort management: Put a mole foam “donut” around the blister.

Tick bites

Ticks can carry Lyme disease.

- Prevention:
  - Wear long sleeves and long pants, especially in areas of thick vegetation.
  - Wear light-colored clothes so ticks are easier to see.
  - Check skin for ticks after passing through heavy vegetation and after your hike.
- Treatment:
  - Use tweezers to grab the tick as close to the skin as possible. Gently pull the tick straight out; don’t twist.
  - Don’t squeeze the tick or apply mayonnaise, hot matches or petroleum.
  - Wash the bite with soap and water. Watch the area for redness, infection, developing lesions or flu-like symptoms.

Snake bites

Rattlesnakes are the only venomous snake in California, but any bite poses a risk of infection and will cause great anxiety for the victim.

- Prevention: Watch where you put your hands and feet. Don’t pick up snakes.
- Treatment:
  - Keep the patient calm.
  - Remove any jewelry; it can cut off blood flow like a tourniquet when swelling develops.
  - Clean bite with soap and water.
  - Monitor swelling. Mark the area and monitor every 15 minutes.

- Rest and immobilize (with a splint). Keep bite at or just below heart level.
- If there are immediate, severe symptoms, send for help immediately and keep patient still.
- If there is no immediate reaction, start to walk the patient out slowly. With a rattlesnake bite, do not walk patient out unless there is no other option.
- Do *not* suck and spit or incise the skin and attempt suction.

Hypothermia

Hypothermia is a significant drop in the body's core temperature, causing progressive mental and physical collapse, and generally due to prolonged exposure to the cold. However, a hiker can become hypothermic in temperatures as high as 60 degrees, which is one reason it is imperative to dress appropriately (no cotton) and to recognize and treat the symptoms early. Wind blowing on wet or moist clothing can increase the chance of hypothermia. It isn't unusual for the victim to not recognize the symptoms, underscoring the need for hiking partners to be aware of each other's condition.

- Prevention
  - Stay warm, dry and well hydrated; eat well, keeping energy levels high.
  - Always pack warm layers made of appropriate fabrics, and keep your fleece/windbreaker handy for rest stops, especially on windy passes.
  -Watch fellow hikers for signs of hypothermia, and remind each other to add warm layers as necessary.
- Signs and symptoms: shivering, numbness, lack of coordination, a slow and irregular pulse, apathy, confusion and decreasing levels of consciousness.
- Treatment
  - Immediately replace damp clothing with dry insulating layers, including beanie and gloves.
  - Consume warm liquids.
  - Seek shelter.
  - Handle severe victims gently, warm them gradually, and treat for shock.

Dehydration

When the body loses too much water and electrolytes (salts and potassium), that results in dehydration. This can develop into a serious problem if you neglect the symptoms, and can contribute to heat exhaustion and heat stroke.

- Prevention — easy!
  - Drink lots of water and eat salty snacks while hiking.
  - Plan ahead when hiking on hot days: Pack a minimum of two quarts of water.
- Signs and symptoms: dry mouth, headache, nausea, dizziness, dark or decreased urination, muscle cramps.
- Treatment — same as prevention
  - Drink water frequently, and supplement it with electrolyte balanced products (Emergen-C, Nuun, Gatorade, etc.).
  - Drink water before you feel thirsty, and before you start hiking (pre-hydrate).
  - Monitor your water intake as well as the color of your urine.

Note: Too much water and not enough salts can lead to a dangerous condition called hyponatremia. Always include salty snacks with water intake.

Heat exhaustion

Heat exhaustion is the most common form of heat illness. The victim has a normal mental state, and remains coordinated. If unchecked, heat exhaustion can progress to a far more dangerous condition — heat stroke.

- Prevention
  - Drink lots of water throughout the day, but *also* eat salty snacks and drink electrolyte-

balanced drinks to avoid leaching the salts and electrolytes out of your body.
- Cover up — wear a hat, sleeves, light reflective clothing and shade the neck with a damp bandana.
- Hike early in the day and anticipate developing signs of heat fatigue.

- Signs and symptoms: excessive sweating, fatigue, dizziness, seeing stars or black spots, headache, weakness, loss of appetite, nausea, vomiting.
- Treatment
  - Stop all exertion and rest in a cool, shaded environment.
  - Loosen restrictive clothing.
  - Drink water with electrolytes or salt.
  - Administer cold, wet compresses (bandanas) especially to the face, neck, armpits and groin.
  - Continue to rest before resuming activities.

Heat stroke

This is a serious condition, and an extension of heat exhaustion. Heat stroke can be fatal.

- Prevention: Same as heat exhaustion.
- Signs and symptoms
  - The victim usually (but not always) stops sweating, and exhibits abnormal or erratic behavior.
  - She may be confused, disoriented, off balance and have a raised temperature (105 degrees).
- Treatment
  - Cool the victim as quickly as possible; immerse in cool water if possible.
  - Do not give victim anything to drink (risk of vomiting and aspiration).
  - Treat for shock. Evacuate immediately, continuing to cool the victim along the way until her temperature drops to 100-101 degrees.

Leader First Aid requirements

Wilderness medicine (wilderness is defined as more than two hours from definitive medical care):

- Hiking: First Aid and CPR
- Recommended: Wilderness First Aid (16-hour course)
- Level II (Red Cross): 4-hour supplemental first aid for when help is delayed.

Plan ahead and prepare

- Safety plan: It is wise to map out the location of help and nearby trailheads before you head out on your hike. If you need to evacuate or seek help, you'll know your options in advance.
- Progression: Choose your hikes to match your skill and physical levels.
- Hike within the capabilities of the slowest hiker.
- Minimum group size is four: one to stay with the injured hiker, two buddies to go for help.
- Everybody fully equipped with 10+ Essentials. Always.
- Paperwork: Permission slip with express permission to administer specified OTC meds.
- High Adventure Health History Form in each hiker's First Aid kit; group leader has copy.

On the trail

Be aware!

- Watch out for your hiking buddies. Make sure they're staying hydrated and take rest breaks. Remind each other to check for hot spots on your feet.
- A lot of times someone who isn't feeling good will try to suck it up, or won't want to be a bother. And sometimes they are in such a daze, they don't even know how to look after themselves. Stay engaged and help them out!
- Smile factor: You can usually tell by someone's smile if they feel good and are having fun. Don't wait for your buddy to look grim before asking how she's doing. But if you see she's not smiling, look into it.
- Keep in contact. More experienced hikers will spread out along the trail, and that's okay as long as it's "leader approved." However, the leader needs to maintain contact with her group at all times, observe those in front and behind, and develop the skill of monitoring the group at a distance.
- Less experienced hiking groups might want to put their most skilled hiker near the front, and their first-aider in the rear. Another group might put their slowest hiker in the front to set the pace.
- Leader's rules: A hiking leader takes responsibility for ensuring the health, safety and welfare of her group. She needs to set guidelines and "rules" that allow her to lead effectively. She may choose to keep a group close together, or allow them to stretch out along the trail with girls keeping within eye contact of an adult. She needs to explain her guidelines, and they need to be respected.
- Know when to call it a day. Don't get so married to your destination that you risk injury by ignoring risks and insisting on continuing with your plans. Maybe someone is dragging, or it gets late, or the weather turns; sometimes you just aren't going to summit the peak, or get to your desired destination, and that's OK. Remember that getting back to the car is more important than getting to the top of the peak. The mountains aren't going anywhere.

Trail dangers

Overview

- Mountain lions
- Black bears
- Snakes
- Poison oak
- Lightning
- Stranger danger
- Personal electronic devices (phones, cameras, music)

Mountain lions

- More than half of California is mountain lion habitat. Mountain lions generally exist wherever deer are found. They are quiet, solitary and elusive and their nature is to avoid humans.
- Preventing encounters: Never hike alone. If you're lucky enough to ever see a mountain lion, never run. Avoid hiking at night, dawn and dusk. Keep your group together.
- Encounters: Mountain lion attacks are extremely rare. If you encounter a mountain lion, make yourself look big, pull your group together, face the animal, make noise and throw rocks.
- Trail scout: Mountain lions are also called cougars, panthers, catamounts or pumas. They eat deer, but also raccoons, birds, small mammals, foxes, mice and grass. Their tracks show four toes, and no claw prints. The top of the pad print is the shape of the letter "m."

Black bears

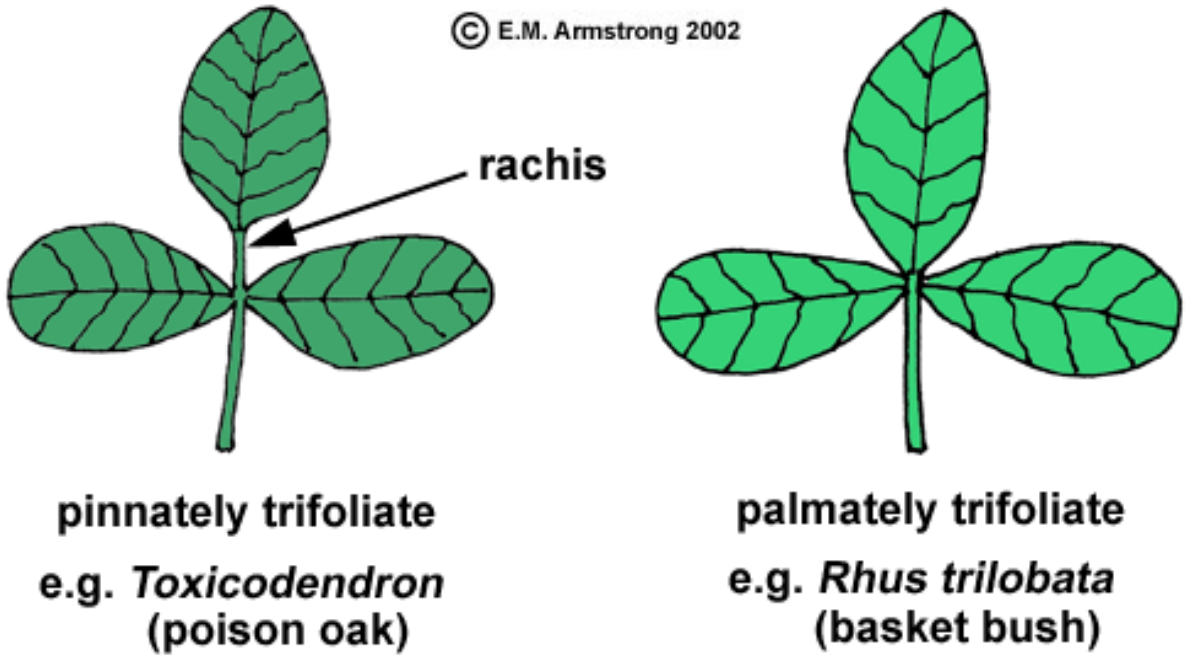
- Black bears (*ursus americanus*) live all over North America. We have rare sightings in San Diego County; they are active north of Interstate 10 (San Bernardino Mountains) and north throughout the Sierras. They're generally found in forest habitat, and are typically shy and easily frightened.
- Preventing encounters: Avoid hiking at night in black bear habitats. Store your food and scented items properly. If you observe scat or other bear signs, or are traveling through dense growth or along noisy rivers, clap hands or sing to alert bears to your presence. (Bear bells have a reputation for not being effective.)
- Encounters: Consider yourself lucky! Stay calm and keep your group together. Slowly retreat, or make a wide detour around the bear. Don't crowd the bear, or block its escape route. Don't move between a sow and her cub.
- Habituated bears: These bears have gotten used to humans, and are after food. If you feel a black bear is too "forward," you can chase it away by blowing your whistle, making noise and throwing rocks.
- Trail scout: Black bears come in many colors: brown, cinnamon, blonde and black. They eat mostly berries, nuts, grasses, carrion and insect larvae. They have an outstanding sense of smell, are great tree climbers and swimmers, and are very intelligent and curious.

Snakes

- Rattlesnakes are the only venomous snake in California. Fortunately, snakes make an effort to avoid us; a sighting can prompt more of a point of interest and a privilege, rather than fear.
- Preventing encounters: Stay on trails and out of tall grass; wear close-toed shoes; look where you put your hands (when climbing or picking up sticks), your feet (when walking) and your seat (when sitting).
- Encounters: Don't pick them up! Most emergency room snake bite victims are men between the ages of 18 and 24, with bites to the hands and arms. Respect snakes, leave them alone and always give snakes the right of way.
- Trail scout: Gopher and bull (non-venomous) snakes have similar markings to rattlers. Rattlesnakes have thick, powerful bodies, skinny necks and triangular heads. Their pupils are oval, not round — but you shouldn't be close enough to see that! Non-venomous snakes have round pupils, and their body, neck and head are all about the same diameter.

Poison oak

- Poison oak grows west of the Rockies, and poison ivy grows east of the Rockies. Poison oak is common along the creeks and canyons of San Diego County. Contact with the plant and its irritating oil — urushiol — causes a contact dermatitis, or rash. The oil is present even when the plant is dormant.
- Prevent encounters: Leaves of three, let it be. Or, if you don't know what it is, don't touch it! In winter, avoid leafless vines along creeks and under oaks.
- Encounters: Wash skin as soon as possible with Tecnu and cool water. Wash clothes to avoid re-contamination.
- Trail scout: Many plants have leaves of three. Poison oak distinguishes itself by the two opposing leaves "kissing," and the center leaf "running away" on its long stem. Poison oak does not have thorns.



Lightning

- If you hear thunder, and can't seek shelter in an enclosed structure, head for lower and safer ground.
- How far away? Every five seconds that elapses between lightning and thunder represents one mile of distance. If 30 seconds elapse, the lightning is six miles away.
- The "30/30" rule: If you see lightning, count out loud until you hear thunder. If it takes 30 seconds or less, seek shelter and stay there for 30 minutes after seeing the last bolt or hearing the last boom of thunder.
- Get off the peak! Descend until you are under forest cover.
- Get out of the meadow. Avoid open spaces that are more than 300 feet wide.
- Avoid lone trees, which act as a lightning rod.
- Get off the water, out of the lake, away from the pond.
- Stay out of rock caves, which conduct electricity.
- The Lightning Desperation Position (National Weather Service): If you see lightning, stop moving to safer terrain. Squat down, resting on the balls of your feet to minimize contact with the ground, chin on chest and hand covering your ears. Group members should be 50 feet apart. Ditch the trekking poles.

Stranger danger

You will find that your fellow hikers are generally upstanding citizens, and the camaraderie that develops on the trail is legendary. But it would be foolish not to acknowledge stranger danger. Girls should be within eyesight of an adult at all times. Use good judgment, and as you would with any trail danger, be observant and keep your head up.

Personal electronic devices

Letting ear buds interfere with your ability to hear is unwise in the wilderness. You should have all five senses engaged to safely interpret your surroundings. How much better to hear a snake slithering through the grass than wait for it to introduce itself with its fangs.

Phones: "Distracted walking" accounts for an estimated 10 percent of pedestrian injuries that land people in the hospital. Seriously. When hiking, consider putting all phones on airplane mode. The cameras will still work, the batteries won't drain in remote areas and your eyes can stay engaged on the trail.

Trail Travel

Overview

- Leave No Trace
- Wilderness ethic

Leave No Trace (LNT)

Minimum-impact travel is essential to the preservation of our wild areas. The seven principles of "LNT" guide every aspect of our wilderness experience; here are the four every day-hiker should observe:

- **Stay on trails; don't cut switchbacks:** Not only is your footing more secure on the trail than off, but cutting switchbacks exacerbates trail erosion. Tromping off trail, especially with larger groups, will smash fragile vegetation and create "use trails" that can scar a wilderness area.
- **Leave what you find:** All plants, animals and relics are protected in National Parks, but picking pine cones and flowers is a real no-no in all wilderness areas. Make it a point to not disturb your surroundings at all, or interfere with the processes of nature. You're a guest.
- **Respect wildlife:** Keep your food away from wildlife, and don't ever feed animals. Animals that are habituated to human food become a nuisance or a danger.
- **Be considerate of others (rights of way):**
  - Horses always get the right of way. Hikers should make a point of catching a rider's attention, then move well off the trail while still in the horse's line of sight. The "rule" is that the hikers should be on the downhill side of the trail. Safety (and not having your skull in line with the rear hooves) may dictate that you move up the hill. Just work it out with the rider, if necessary.
  - Hikers and horses have the right of way over bikes. Theoretically. That's the "rule," though you may find the reality is that bicyclists swoop up behind you, ring their bells and expect you to jump out of the way. Always thank a cyclist who observes the proper protocol. It's helpful to ask the cyclist if there are more in her group so you can be ready.
  - The uphill hiker has the right of way, though they will sometimes yield so they can take a breather. Plan on giving the uphill hiker the right of way. Thank fellow hikers who yield to you.
  - It's polite and just good manners to yield to people behind you who want to pass. It's always a good idea to check behind you from time to time.

The wilderness ethic

Not only does a hiker have a responsibility to take care of the wilderness, but she also needs to look after the well being of her fellow hikers. A hiker who truly possesses the wilderness ethic is skilled, knowledgeable and willing to help others she meets along the trail. Real integrity and honor exist in the backcountry — keep up the tradition!

Lost and Found

Overview

- What to do if you get lost
- Important dont's
- Staying found

Lost

- **STOP!**
- Stay calm: You will make better decisions if you are focused and level-headed. Relax, and gather your thoughts and resources. Remember, your buddies will be looking for you.
- Resources: Fellow hikers, map, compass, guidebook, whistle and your recollection of where you've been, what you've seen and the landmarks you've encountered.
- Stay put: Take time to evaluate where you are, where you came from and where you are going.
- Consider: Your buddies will look for you where they saw you last. If your whole group is lost together, you can work it out, but *stay together.*
- Anchor and sweep: Using one person as an "anchor," let others sweep the area for signs of a trail while the "anchor" remains where she is and holds the location.
- Look around: Get your bearings. Are you just a little disoriented, or genuinely lost? Look at your map for your last known location. Look at your surroundings for landmarks. After evaluating your surroundings and map, can you identify, with certainty, where you are?
- Stay put, or look for my group: An experienced hiker may be able to re-orient herself by using her map, compass and landmarks and talking to passing hikers. If you can't re-orient yourself with certainty, *stay put!*
- If you stay put: Use your resources wisely. You have your 10+ essentials for this very purpose, a whistle to blow in a series of three blasts until you make contact, and an in-town contact who will be looking for you at the specified time. Eat, drink and stay calm.
- If you stay put: Make yourself and your location highly visible. Pick an open spot, if possible, and display a marker than can be seen from the air (bright poncho, clothes, X made of rocks).

Important dont's

- Don't take "shortcuts" through thick chaparral, or along or over steep cliffs.
- Don't hike in the dark, fog or white-out conditions.
- Don't light a signal fire — California is always in a high-risk, year-round fire season. Remember the Cedar Fire of 2003, the largest wildfire in the history of California, started by a lost hunter signaling for help with a flare during a Santa Ana wind.
- Don't expect a night rescue; it is too dangerous.

Staying found

Preparation is the key to staying found. The following resources will keep you on track.

- **In-town contact:** This person knows your route and will contact a ranger/emergency services if she doesn't hear from you at a specified time. *Always* leave your location, trailhead, route information and expected time back with a reliable in-town contact, and call them as soon as you're back to the car. Your in-town contact is like your insurance policy if you get lost or injured and need to stay put; you know someone's coming to get you.

- **Permit:** Some wilderness areas require a permit, even for just a dayhike (e.g., San Jacinto State Wilderness). Day permits are normally free, and give you an excellent opportunity to talk to a ranger before heading out on the trail. Ask questions about your route, trail conditions, water availability — the ranger can really help you out. Also, by leaving a permit on file, rangers have a record of where you're going. This does not replace having an in-town contact.
- **Stay with your group:** Letting your hiking buddy find their own way back to the car, or leaving someone behind on a potty break, is the kind of mistake you read about in the newspaper clippings about lost hikers. Stay with your buddies!
- **Always regroup at trail junctions:** Junctions are an excellent place to take a wrong turn. If you wait till your entire group reaches the junction before continuing, you will ensure everyone is still doing OK, everyone can double check their location on the map, and someone in your party won't take a wrong turn and get lost.
- **Review the map before you hike:** Looking at your map, finding your trail (and highlighting it) and following along its route ahead of time allows you to visualize landmarks, junctions, creeks and other features that help keep you oriented. If you know you were supposed to follow a creek, and you're climbing up a ridge instead, it's time to check that map before you get too far off track.
- **Thumb the map while you hike:** Use your map; don't tuck it away in your pack. If you follow your progress on the map while you're hiking, you can discuss and memorize stream crossings, trail junctions, peaks and other features as they're encountered. Constantly referencing the map with your whole group will ensure that you stay on your route.
- **Trail signs:** Utilize all signs with destinations and mileages. Additionally, look for trail markers like blazes (paint, tags or rectangular cuts on tree trunks), cairns (rock "ducks" that mark routes over rocks) and logs placed horizontally across trails ("trail closed") to find your way.
- **Animal paths:** If you started out on a well-worn trail, and find yourself on a sketchy, barely visible path, that's a good sign that you've left the real trail behind. This can also happen at the end of switchbacks (water erosion creates a fairly convincing "path" that really isn't a trail), and around lakes (fishermen often create a use trail).

15 minutes of fame
No one wants to be the lost or injured hiker whose sorry story appears in the newspaper. Here are some of the most common mistakes we read about:

1. Lost hiker didn't have an in-town contact. Takes days to find him.
2. Lost/injured hiker didn't have 10+ Essentials. Suffers from heat illness or hypothermia
3. Group didn't stay together. Someone gets lost.
4. Hikers underestimated the terrain. Results in injury or getting stranded.
5. Hikers didn't have a map. Get completely lost.
6. Summit fever — didn't set a turn-back time, didn't have a flashlight, ignored the weather. Results in injury or getting stranded overnight.
7. Blundered ahead — disoriented hiker blindly forges ahead instead of staying put. Gets cliffed out or stranded in a sea of chaparral.

Let your 15 minutes of fame be for something you did well!

Safety Devices

Overview

- Consider LNT
- SPOT
- Delorme inReach
- Cell phones

As we become a more connected and wired culture, the practice of carrying cell phones and electronics into the backcountry, once controversial, has become much more commonplace. As you consider your backcountry safety plan, you may decide that carrying a cell phone and/or a personal locator beacon (PLB) for emergency purposes is a good idea. Whatever your decision, keep in mind two Leave No Trace principles.

1. **Plan ahead and be prepared.** Technology is never a substitute for common sense and skills such as map and compass. Technology does not decrease risk in the wilderness. You should never take risks beyond your skill level solely because you may have access to help. Most devices require charging or batteries, and may break or malfunction in a backcountry environment.
2. **Be considerate of others.** Many hikers go to the backcountry to escape the daily connections to work and to technology. Using devices other than for emergencies may infringe on the outdoor experience for others around you. Calling for help inappropriately may put search and rescue teams at great personal risk and use resources, including financial resources, unwisely.

New technology definitely has benefits. The ability to call for help can save lives when the calls are made by people who are truly in trouble. The following is a description of some commonly used devices.

SPOT Device

The SPOT uses GPS (Global Positioning System) satellite technology to track the device and send messages. The user has options for one-way communication when they are beyond cell phone range. Pushbuttons can send preprogrammed messages to let family and friends know you are OK, alert your personal contacts that you need help in non-life-threatening situations, or other custom messages. The SOS button is provided for use in life-threatening emergencies, and sends a message to the GEOS International Emergency Response Coordination Center which provides your GPS coordinates and information to local response teams (local 911 responders.)

SPOT is lightweight and easy to use. A service plan in required. Access to open sky is needed for satellite communication. Common concerns include users who activate the SOS in non-emergency situations, and one-way communication does not allow rescuers to contact sender and assess the emergency. Once activated, emergency personnel are committed to respond, similar to a 911 call.

Delorme InReach

InReach GPS satellite two-way communicators enable you to receive text messages and send messages to email addresses and cell phones, track your GPS coordinates and trigger an SOS. An SOS is received by GEOS, and emergency contacts and responders in the area are notified. GEOS also stays connected to provide updates on your location or to communicate with you. Advantages include ability for two-way communication with other devices, and emergency responders can assess and communicate with the caller. Access to open sky is needed. A service plan is required.

Cell phones
Calling 911 on a cell phone connects you to the nearest PSAP (public safety answering point). A 911 operator answers, and a computer finds your coordinates using your phone's GPS chip. If you're a lost hiker, the 911 operator transmits that position to local rescue personnel so they can locate you.

In the back country, service may be spotty or non-existent, so your 911 call may not go through. Your wireless provider may still have recorded the time you activated your phone to make a call. These electronic blips require little energy to send or receive and may transmit when your phone shows no reception. Sometimes they go through when they shouldn't and the data trail is logged by the wireless providers. If someone is reported missing, law enforcement officials may call the provider to access this data trail. If you own a cell phone, bring it on your hike. Include your phone number and service provider in your emergency contact list. Leave your phone off during the hike, but occasionally check for service (leaving a data trail). If you are lost or injured, dial 911 even if you don't have service. Higher ground may yield better service. Common problems include no service, no charge, and problems related to inattention on the trail while focusing on the device.

Technology is rapidly changing and its use continues to increase. New devices offer the wilderness hiker tools to enhance their experience. Users should be aware of how the device functions as well as its limitations. Devices should be used along with — *not instead of* — skill, experience and self-reliance.

After Wilderness Hiking Course, What Comes Next?

Take more hikes

- The resource page will give you an idea of other hikes in the area, and websites and books that will give you unlimited options.
- The more you apply hiking skills and knowledge, the more competent you will become outdoors.
- Whether it's with your troop or your family, carve out time to enjoy outings in all seasons.
- Getting out to explore and build your skills is the best progression to backpacking.

Basic Backpacking

Sign up for Girl Scouts San Diego's many backpacking trainings and training trips. The Basic Backpacking Course is open to girls in grade 7 and up, and adults. Upon completion, you will be eligible to sign up for Girl Scouts San Diego's advanced trips, train your own girls to backpack and help our council trainers teach Wilderness Hiking and Basic Backpacking classes/trips.

Advanced Backpacking

Upon completion of Basic Backpacking, girls in grade 8 and up and adults are eligible to go on our Advanced Backpacking trips.

- These trips are rated numerically, so you can choose the trip that is best suited to your abilities.
- Trips are led by qualified, council-approved trip leaders with the appropriate Wilderness First Aid training and backcountry experience.
- Check the Girl Scout website (sdgirlscouts.org/hiking) to view the trip descriptions for the Advanced Backpacking trips offered each year.

Youth and adult leadership

Girls and adults who complete our Wilderness Hiking and Basic Backpacking courses are encouraged to return to help council trainers in teaching future classes and hikes. Our youth leaders are the face of our program — their confidence as young trainers reflects their exceptional ability on the trail, their increasing skills and knowledge, and helps them grow into strong leaders. Our adult leaders help facilitate our trainings, providing knowledgeable supervision and extended adult resources. These adults sometimes continue on to become trainers.

Hiking Resources

Local hikes

Mission Trails
- Cowles Mtn., Oak Canyon, 5 Peak Challenge

Daly Ranch

Jamul
- Hollenbeck Cyn., Mt. McGinty

Mt. Laguna Recreation Area
- Laguna Meadow Trailhead (mile marker 19)
  - Little Water in the Woods
  - Sunset Trail to Cedar Fire Burn
  - Chico Ravine - short loop
  - Chico Ravine - extended loop
  - Big Meadow Loop
  - Big Laguna Trail

Other great local hiking areas

Iron Mountain

Lake Morena
- -Morena Buttes loop, Pacific Crest Trail (PCT)

Torrey Pines

Blue Sky Preserve

Mt. Woodson

Cuyamaca Rancho State Park
- -Stonewall Peak, Green Valley Pine Ridge Trail

Mt. Laguna
- -PCT, Noble Cyn., Garnet Peak

Julian
- -Volcan Mtn., Wm. Heise Co. Park

Recommended trail guides/reading

- *Afoot and Afield in San Diego County* — complete guide to our county's hikes, trail descriptions, driving directions
- *Backpacker Magazine* — chock full of valuable information
- Check out the REI.com Camping/Hiking Expert Advice page!

Adventure Pass

This parking pass is required in the Cleveland National Forest. It's $5/day or $30/year, and can be purchased at outdoor stores (A-16, Big 5, REI), Pine Valley gas station, Mt. Laguna Store, ranger stations (Descanso RS: 3348 Alpine Blvd., (619) 445-6235) and Alpine gas stations.

Topographical Maps

- A-16 (Mission Valley — adventure16.com)
- REI (Kearny Mesa — rei.com)
- Online: You can purchase topo maps online (mytopo.com, for example), or copy from regional park pages: localhikes.com is an excellent selection of local hiking topos.
- efgh.com/maps/index.html — a great selection of local hiking topos
- mountainbikebill.com — local biking/hiking trails
- sdgirlscouts.org /hiking — check out our hiking and backpacking trips and maps at the bottom of the backpacking page

Equipment and clothes

- Target
- Marshall's
- Wal-Mart
- A-16
- REI
- Thrift stores

Girl Scout website
Leave No Trace
REI Expert Advice
San Diego Orienteering

More Map Resources

There are many resources for dayhikers, including blogs, vlogs, trail-specific websites, National Park (and other government agencies) websites, topographical mapping sites and smartphone applications.

Most bloggers create and post maps of trips they review that can be printed out for use on the trail. Many vloggers create animated map overviews and movies of trails so you can see first-hand where you will be on the map and what it looks like in the environment.

Topo mapping sites allow for a variety of different uses, including researching trails and terrain, printing out special maps, uploading maps to your electronic device and setting waypoints to plot or track your route.

Several mapping sites also have smartphone apps; most are GPS-compatible. Smartphone applications allow for using an electronic map without relying on network access or Wi-Fi reception.

Here are some favorites:

Blogs

Southern California:

Modern Hiker

SoCal Hiker

Pacific Crest Trail: Halfmile's PCT maps*

Mapping Websites and Apps (for GPS-enabled smartphones)

AllTrails

Backcountry Navigator* (Android)

Earthmate by Delorme* (membership required)

EveryTrail

Gaia GPS Topo*

Google Maps*: Yes, you can download maps for offline usage! It's likely already on your phone, so all you have to do is go to the Google Maps settings, hit *Offline areas* and start adding them. They will be automatically deleted after 30 days.

Hikespeak

JMTHiker*

MapMyHike

Motion X GPS* (iPhone) *Ranked No. 1 by Backpacker Magazine*

My Topo Maps and Trimble Outdoors Navigator: mytopo.com* (for tablets)

Outdoor Navigation* (Windows phone)

*Offline maps.

The smartphone has replaced many appliances. With built-in GPS and high-volume storage capacity, this now includes paper maps and compass. According to the Outdoor Foundation in 2013, outdoor participants ages 18 to 24 use technology to engage in outdoor recreation the most, 43 percent of which use smartphones. Girl Scouts San Diego requires learning map and compass skills and is

adamant about carrying them at all times and knowing how to use them, but acknowledges that new technology is an added asset, and is here to stay.

Remember: Electronic devices use up a lot of battery power. Always carry spare batteries and/or a portable charger in addition to your paper map and compass.

Hiker Bee

Q. What do you do with used toilet paper and feminine supplies?
A. Pack them out.

Q. What are some things you learn about your hike by looking at the topo map ahead of time?
A. Elevation (and elevation changes), terrain features like peaks, ridges and lakes, location of trails and water sources, mileage, vegetation, location of buildings/ranger stations, route options

Q. When the contour lines on a topo get close together, the terrain is:
A. Rocky B. Steep C. Quite forested

Q. Name two fabrics that are excellent for wicking away moisture:
A. Wool, polypropylene, capilene, silk, polyester fleece

Q. How deep should you bury human waste and what tool should you use?
A. 6 - 8 inches, trowel

Q. What are the advantages of hiking boots over athletic shoes?
A. Better durability, support, traction and protection from rocky surfaces

Q. What is the point of wearing a liner sock under a heavier hiking sock?
A. It provides friction between the two socks, reducing the chance of blisters

Q. Going to the bathroom must be done _____ feet from open water?
A. 150-200 feet

Q. When you meet horses coming toward you, how do you handle the “right of way?”
A. Move far enough off the trail to let the horses pass and secure your safety, but still maintain visual contact so you don’t spook the horse.

Q. If you are hiking and bikers are coming toward you, who has the right of way?
A. Hikers

Q. In the same situation, who thinks they have the right of way?
A. Bikers

Q. What are three things you can do to protect trails from erosion?
A. Don’t cut switchbacks; stay on the trail; don’t walk side by side

Q. Topo maps are oriented to:
A. Magnetic North B. True North C. Due East

Q. Your compass points to:
A. Magnetic North B. True North C. Due East

Q. Is your lunch the same as emergency food?
A. No! Once you eat your lunch you’ll have no emergency food. Always take power bar or something extra.

Q. What two fire making tools do you need to have on you as part of the 10 Essentials?
A. Waterproof matches and firestarter, for small campfires only.

Q. When is it okay to light an emergency signal fire in California?
A. Never. California is at risk of wildfire year-round.

Q. What is “layering?”
A. Layering is a system of dressing in which you wear multiple layers of clothing so that you can add layers when it gets colder and take off layers when it gets warmer.

Q. Why is layering important?
A. It allows you to be prepared for a wide range of temperatures and weather conditions with the least amount of clothing, and allows you to finely adjust your level of warmth by putting on and taking off layers.

Q. What are the advantages and disadvantages of hydration packs (*e.g.,* CamelBaks, Platypus)
A. Advantages: easy and quick to drink water while you hike; easier to stay hydrated. Disadvantages: they can leak; you can’t tell how much water you’re drinking; you can’t add Gatorade or other powdered drinks to your water.

Q. What are nice features in a good daypack?
A. Comfortable, padded straps made of durable material, water resistant, multiple zippered compartments, loops on the outside to hang things on.

Q. Is cotton a good choice of fabric for hiking? Why?
A. No, because when it gets wet is sucks the heat out of your body.

Q. What disease is carried by ticks?
A. Lyme disease

Q. What should be done to your boots before a trip to help keep your feet dry?
A. Waterproof your boots

Q. Which of the 10 Essentials help you Find Your Way?
A. Map, compass, flashlight

Q. Which of the 10 Essentials help protect you from the elements?
A. Sun protection (hat, sunglasses, sunscreen, lipblock), cold protection (layered clothes)

Q. Name the remaining five 10 Essentials.
A. Knife, first aid kit, waterproof matches, firestarter, food and water

Q. What are the two “extra essentials?”
A. Toilet paper and whistle

Q. What are three ways to prevent blisters?
A. Well-fitting boots, non-cotton socks, liners, pre-treat w/ duct tape, break in boots

Q. Why do you check yourself carefully for ticks after a hike?
A. Ticks carry Lyme disease

Q. If you find a tick attached, what do you do?

A. Remove by gently pulling straight out with tweezers right from the head. Any resulting skin aggravation should be looked at by a doctor, even if it occurs a couple weeks later.

Q. What do you do if you encounter a mountain lion?

A. Make yourself big, gather together as a group, shout, throw sticks and rocks. Don't run!

Q. How do you avoid poison oak if you don't know what it looks like?

A. Don't touch any plants with leaves of three. Also, learn to identify poison oak!

Q. What do you do if you get lost?

A. Stay Put! Blow your whistle three times in succession to signal a rescue. Don't go anywhere unless you are **absolutely, positively certain** you can return to your last known location with your map.

Q. What are some ways you can ensure that you don't get lost?

A. Review and highlight your map before you go, stay with your group, always wait for each other at trail junctions, thumb the map while you hike, observe trail signs.

Q. How do you best avoid snakebites?

A. Watch where you put your feet, don't be tempted to catch snakes

Q. How do you avoid lightning?

A. Check weather before you leave, observe changes in the weather, especially before climbing peaks or exposes ridges, avoid open meadows and bodies of water in thunderstorms, stay away from tall objects during lightning storms, don't ever hide in caves (they conduct electricity), take shelter in protected wooded areas.

Q. What is the minimum number of hikers you should have on an outing? Why?

A. Four — one to stay with an injured hiker, two to go for help

Q. What rhyme is used to differentiate between Coral Snakes and California King Snakes?

A. Red next to black, friend of Jack; Red next to yellow, you're a dead fellow.

Q. What should you do if you see a black bear?

A. Shout "hey, bear": make yourself heard. Don't block its escape route, back off slowly. Don't run, but don't back down in a charge.

Q. Do we have grizzly bears in California?

A. No, they've been extinct since the 1920s.

Q. Do we have black bears in San Diego County?

A. There have been sightings over the years, but those have been few and far between.

Q. What color are black bears?

A. Black, brown, cinnamon, light brown

Q. If a bear has your food, what's the best thing to do?

A. Don't try to get it back; keep your distance.

Q. Why should you bring feminine supplies every time you go hiking?

A. The altitude can change the way your body works even if you least expect it. And you don't want to get caught without supplies.

Q. Which is considered a serious medical emergency: heat stroke or heat exhaustion?

A. Heat stroke

Q. List three ways to prevent injuries.

A. Get in shape, pay attention to your surroundings and listen to your body.

Q. Which heat illness — heat exhaustion or heat stroke — causes the body temperature to elevate above 105 degrees?

A. Heat stroke

Q. List at least two ways to prevent heat illness.

A. Hydrate, dress appropriately, rest frequently and avoid the heat of the day.

Q. List at least three risk factors which can contribute to injuries:

A. Overweight, out of shape, over dressing, fatigue, over exertion, dehydration, high temperatures and high humidity, ill fitting shoes, poor judgment

Q. How do we cool off our bodies naturally?

A. Increasing blood flow to the skin; evaporation of sweat.

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