



# Geocaching Merit Badge



**Troop 344 and 9344**  
**Pemberville, OH**



# Geocaching Merit Badge Requirements

1. Do the following:
  - a. Explain to your counselor the most likely hazards you may encounter while participating in geocaching activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
  - b. Discuss first aid and prevention for the types of injuries or illnesses that could occur while participating in geocaching activities, including cuts, scrapes, snakebite, insect stings, tick bites, exposure to poisonous plants, heat and cold reactions (sunburn, heatstroke, heat exhaustion, hypothermia), and dehydration.
  - c. Discuss how to properly plan an activity that uses GPS, including using the buddy system, sharing your plan with others, and considering the weather, route, and proper attire.
2. Discuss the following with your counselor:
  - a. Why you should never bury a cache.
  - b. How to use proper geocaching etiquette when hiding or seeking a cache, and how to properly hide, post, maintain, and dismantle a geocache
  - c. The principles of Leave No Trace as they apply to geocaching



# Geocaching Merit Badge Requirements

3. Explain the following terms used in geocaching: waypoint, log, cache, accuracy, difficulty and terrain ratings, attributes, trackable. Choose five additional terms to explain to your counselor.
4. Explain how the Global Positioning System (GPS) works. Then, using Scouting's teaching EDGE, demonstrate the use of a GPS unit to your counselor. Include marking and editing a waypoint, changing field functions, and changing the coordinate system in the unit.
5. Do the following:
  - a. Show you know how to use a map and compass and explain why this is important for geocaching.
  - b. Explain the similarities and differences between GPS navigation and standard map reading skills and describe the benefits of each.



# Geocaching Merit Badge Requirements

6. Describe the four steps to finding your first cache to your counselor. Then mark and edit a waypoint.
7. With your parent's permission\*, go to [www.geocaching.com](http://www.geocaching.com). Type in your city and state to locate public geocaches in your area. Share the posted information about three of those geocaches with your counselor. Then, pick one of the three and find the cache.

\*To fulfill this requirement, you will need to set up a free user account with [www.geocaching.com](http://www.geocaching.com). Ask your parent for permission and help before you do so.





# Geocaching Merit Badge Requirements

8. Do ONE of the following:

- a. If a Cache to Eagle® series exists in your council, visit at least three of the 12 locations in the series. Describe the projects that each cache you visit highlights, and explain how the Cache to Eagle® program helps share our Scouting service with the public.
- b. Create a Scouting-related Travel Bug® that promotes one of the values of Scouting. "Release" your Travel Bug into a public geocache and, with your parent's permission, monitor its progress at [www.geocaching.com](http://www.geocaching.com) for 30 days. Keep a log, and share this with your counselor at the end of the 30-day period.
- c. Set up and hide a public geocache, following the guidelines in the **Geocaching** merit badge pamphlet. Before doing so, share with your counselor a three-month maintenance plan for the geocache where you are personally responsible for those three months. After setting up the geocache, with your parent's permission, follow the logs online for 30 days and share them with your counselor. You must archive the geocache when you are no longer maintaining it.
- d. Explain what Cache In Trash Out (CITO) means, and describe how you have practiced CITO at public geocaches or at a CITO event. Then, either create CITO containers to leave at public caches, or host a CITO event for your unit or for the public.

9. Plan a geohunt for a youth group such as your troop or a neighboring pack, at school, or your place of worship. Choose a theme, set up a course with at least four waypoints, teach the players how to use a GPS unit, and play the game. Tell your counselor about your experience, and share the materials you used and developed for this event.

# Requirement 1



Do the following:

- a. Explain to your counselor the most likely hazards you may encounter while participating in geocaching activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
- b. Discuss first aid and prevention for the types of injuries or illnesses that could occur while participating in geocaching activities, including cuts, scrapes, snakebite, insect stings, tick bites, exposure to poisonous plants, heat and cold reactions (sunburn, heatstroke, heat exhaustion, hypothermia), and dehydration.
- c. Discuss how to properly plan an activity that uses GPS, including using the buddy system, sharing your plan with others, and considering the weather, route, and proper attire.

# 1a Hazards

- The most typical hazards you'll encounter while geocaching are:
  - Unexpected Weather Conditions
  - Insect Bites/Stings
  - Dangerous Wild Animals
  - Excessive Rain/Flooding
  - Heat-Related Injuries
- Many of these issues can be prevented by being prepared in your packing and can be responded to by removing the affected person from the hazardous environment, then treating them accordingly.



# Geocaching and the Internet



Several websites offer information about geocaching. Just remember that no one controls the information put on the web. What you see posted may be incorrect or misleading. Always consider the source of the information to help you evaluate how accurate it might be.

## **Basic Internet Safety:**

1. Follow your family's rules for going online. Obey time limits and do not visit areas that are off-limits.
2. Protect your privacy. Never exchange e-mails, give out personal information, or send your picture without your parent's permission
3. Do not open e-mails or files your receive from people you don't know or trust. Delete suspicious items.
4. If you receive or discover any information that makes you uncomfortable, leave it and tell your parents. Do not respond to any message that is disturbing or hurtful.



# Geocaching and the Internet

## Basic Internet Safety (continued):

5. Never agree to get together with someone you “meet” online, unless your parents approve of the meeting and goes with you.
6. Never share your internet passwords with anyone (even if they sound “official”) other than your parents or other responsible adults in your family.
7. Never shop online unless you have your parent’s permission to do so.
8. Do not believe everything you see or read online. Along with lots of great information, the internet has lots of junk. Learn to separate the useful from the useless.
9. Be a good online citizen. Do not do anything that harms others or is against the law.



# Requirement 1



Do the following:

- a. Explain to your counselor the most likely hazards you may encounter while participating in geocaching activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
- b. Discuss first aid and prevention for the types of injuries or illnesses that could occur while participating in geocaching activities, including cuts, scrapes, snakebite, insect stings, tick bites, exposure to poisonous plants, heat and cold reactions (sunburn, heatstroke, heat exhaustion, hypothermia), and dehydration.
- c. Discuss how to properly plan an activity that uses GPS, including using the buddy system, sharing your plan with others, and considering the weather, route, and proper attire.

# Personal First-Aid Kit

The items you carry in your personal first-aid kit will handle most of the medical problems you are likely to encounter while geocaching.

- ☐ Adhesive bandages (6)
- ☐ Sterile gauze pads, 3"x3" (2)
- ☐ Adhesive tape (1 small roll)
- ☐ Moleskin, 3"x6" (1)
- ☐ Hand sanitizing gel (1 travel size bottle)
- ☐ Triple antibiotic ointment (1 small tube)
- ☐ Scissors
- ☐ Nonlatex disposable gloves (1 pair)
- ☐ Mouth barrier device
- ☐ Pencil and paper



# Hypothermia



- Occurs when body cannot make heat as fast as it loses it.
- Internal body temperature drops below 95°F.
- Can occur whenever and wherever a person feels cold, including indoors in poorly heated areas.



# Hypothermia

- Move victim to shelter.
- Remove wet clothing and wrap victim in warm covers.
- Apply direct body heat.
- Re-warm neck, chest, abdomen, and groin first.
- Give warm, sweet drinks if conscious.
- Monitor breathing, administer CPR.
- Get medical help.



# Heat Reactions

## HEAT EXHAUSTION

1. MOIST & CLAMMY SKIN
2. PUPILS DILATED
3. NORMAL OR SUBNORMAL TEMPERATURE



## HEAT STROKE

1. DRY HOT SKIN
2. PUPILS CONSTRICTED
3. VERY HIGH BODY TEMPERATURE

# Heat Exhaustion Symptoms

- Heavy sweating
- Thirst
- Fatigue
- Heat cramps
- Headache
- Dizziness
- Nausea
- Vomiting



# First Aid for Heat Exhaustion



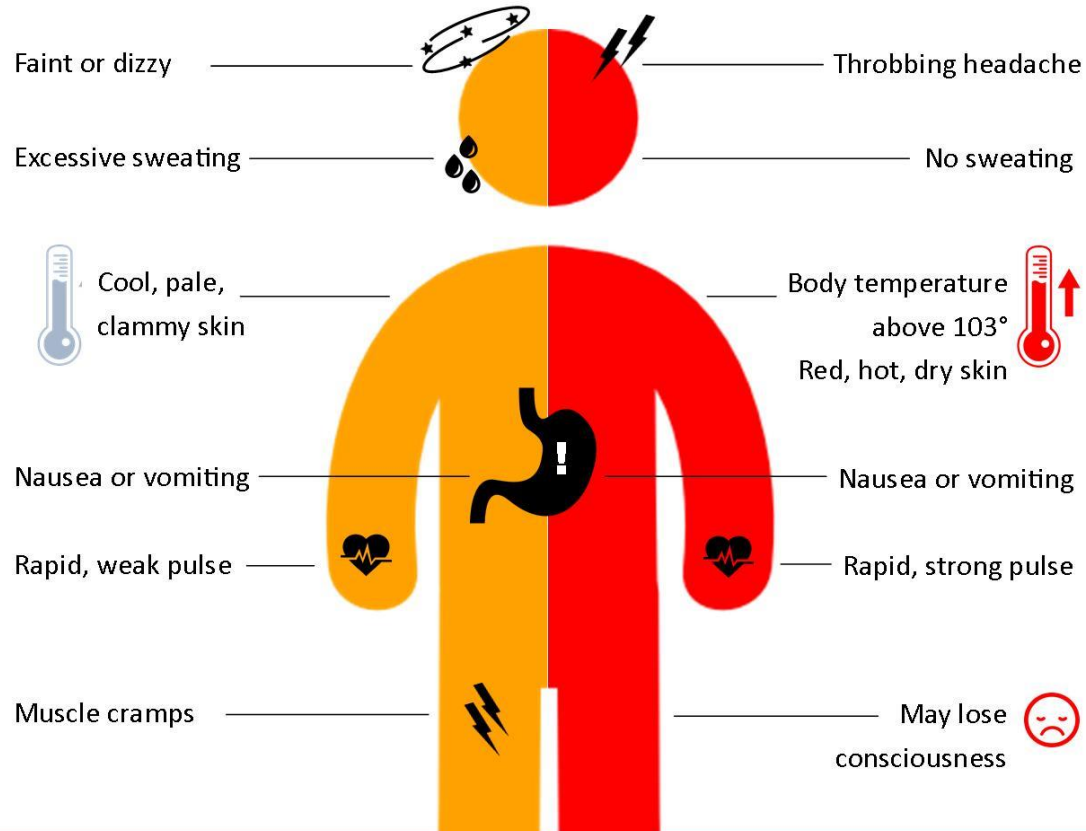
- Move victim from heat to rest in a cool place.
- Loosen or remove unnecessary clothing.
- Give water or a sports drink.
- Raise feet 8-12 inches.
- Put cool, wet cloths on forehead and body – spray skin with water.
- Seek medical care if victim's condition worsens or does not improve within 30 minutes.



## HEAT EXHAUSTION

OR

## HEAT STROKE



- Get to a cooler, air conditioned place
- Drink water if fully conscious
- Take a cool shower or use cold compresses

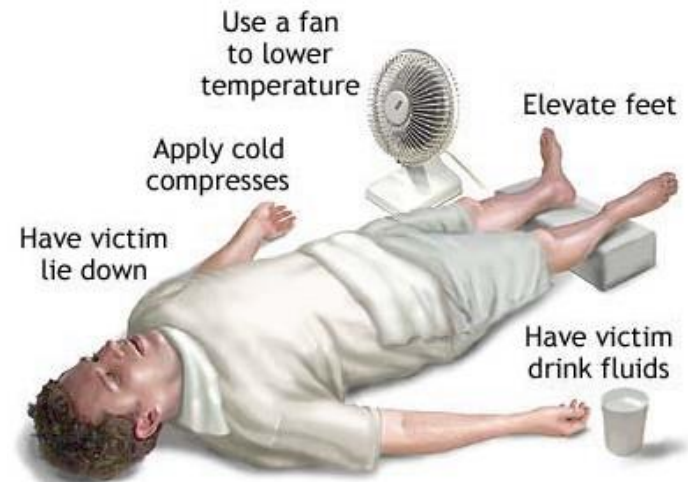
# CALL 9-1-1

- Take immediate action to cool the person until help arrives

mjflynn

# First Aid for Heat Stroke

- Call 911.
- Move victim to cool place.
- Remove outer clothing.
- Cool victim quickly.
- Apply cold compresses or spray skin with water.
- Put ice bags or cold packs beside neck, armpits, and groin.



# Dehydration

- When the body puts out more liquid than it is taking in.
- Ways we lose fluids:
  - Sweating.
  - Urination.
  - Vomiting.
- Signs of dehydration:
  - Thirst.
  - Yellow or dark urine.
  - Dry mouth.
  - Lightheadedness.
  - Nausea and vomiting.
  - Dry skin.
  - Cease sweating.
- Treatment:
  - Drink fluids (water, Gatorade).
  - Avoid physical activity.
  - Get inside air conditioned or cool area.



# Insect Bites

- Bites of mosquitoes and chiggers (harvest mites usually cause itchy, red bumps. The size of the swelling can vary from a dot to a half inch.
- Signs that a bite is from a mosquito are: itchiness, a central raised dot in the swelling, a bite on skin not covered by clothing, and summertime,
- Bites from horseflies, deerflies, gnats, fire ants, harvester ants, blister beetles, and centipedes usually cause a painful, red bump.
- Fire ant bites change to blisters or pimples within a few hours.





# Treatment of Insect Bites



- Apply calamine lotion or a baking soda paste to the area of the bite.
- If the itch is severe (as with chiggers), apply nonprescription 1% hydrocortisone cream four times a day.
- Do not to pick at the bites or they can become infected or leave scars.
- Cold, moist compresses or ice on the area can help.

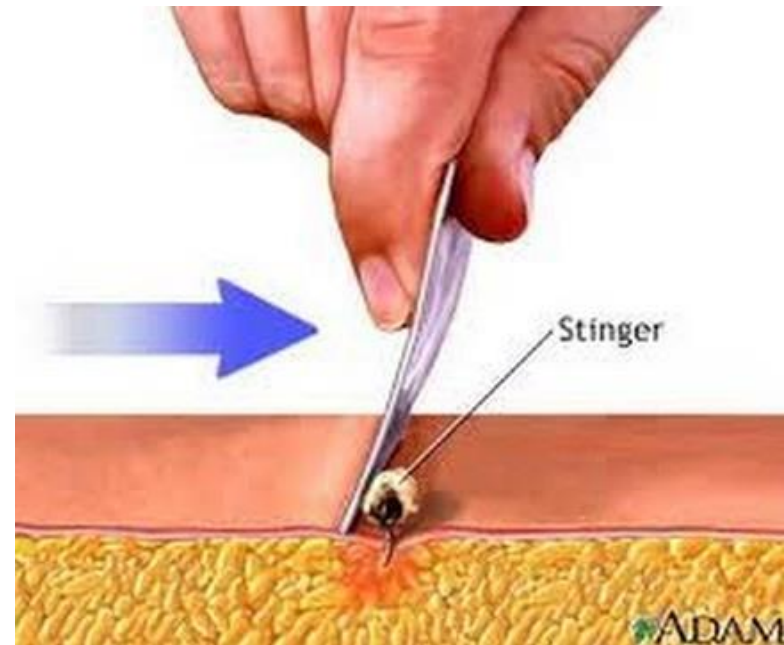
# Bee Stings



- Honey bees, bumble bees, hornets, wasps, and yellow jackets can all sting.
- These stings cause immediate painful red bumps.
- While the pain is usually better in 2 hours, the swelling may increase for up to 24 hours.

# Treatment of Bee Stings

- If you see a little black dot in the bite, the stinger is still present (this only occurs with honey bee stings).
- Remove it by scraping it off with a credit card or something similar.
- For persistent pain, massage with an ice cube for 10 minutes.
- Give acetaminophen immediately for relief of pain and burning.
- For itching, apply hydrocortisone cream.



# Tick Bites

- Can transmit Rocky Mountain spotted fever or Lyme disease.
- Tick embeds its mouth parts in skin and may remain for days sucking blood.

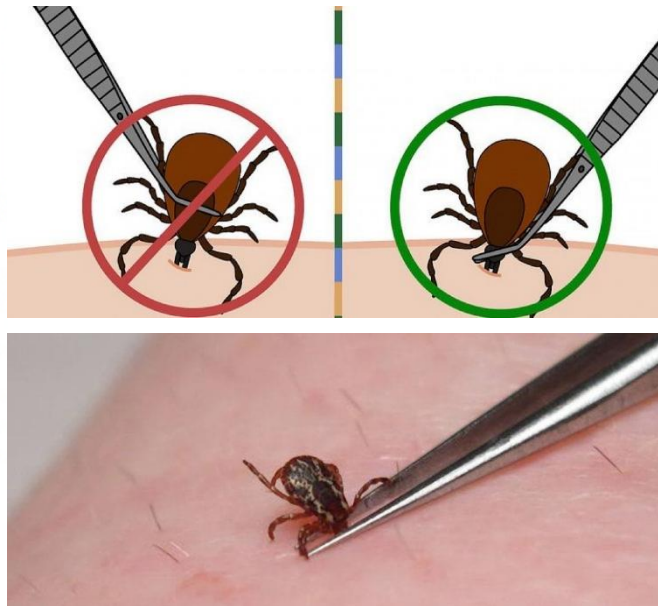




# Engorged Tick



# Tick Removal



- Grasp the tick's mouthparts against the skin, using pointed tweezers.
- Pull steadily without twisting until you can ease the tick head straight out of the skin.
- DO NOT squeeze or crush the body of the tick.
- DO NOT apply substances such as petroleum jelly, nail polish, or a lighted match to the tick while it is attached.

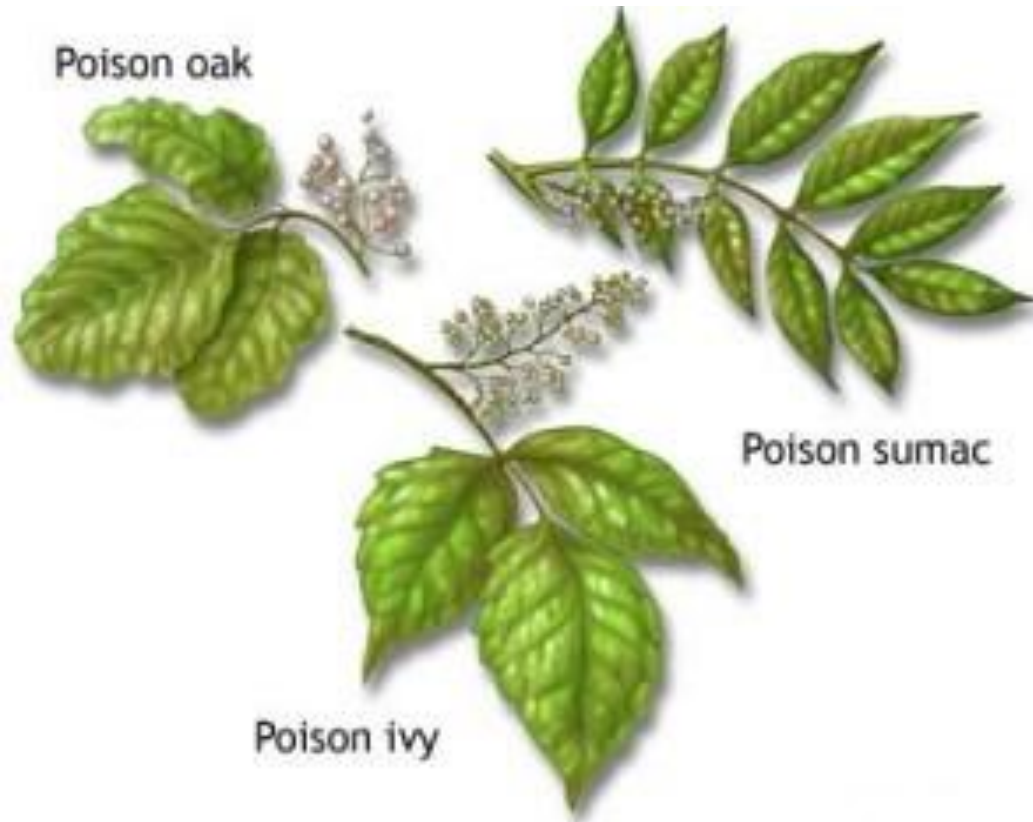
## Tick Removal (cont.)

- Once you have removed the tick, wash the wound site and your hands with soap and water, and apply rubbing alcohol or antiseptic to the site.
- Observe the bite over the next two weeks for any signs of an expanding red rash or flu-like symptoms (Lyme Disease).



**Lyme Disease Rash**

# Poisonous Plants





# Identify Local Poisonous Plants

- Virginia Creeper is sometimes mistaken for poison ivy.
- The leaves and vines on the left are Virginia Creeper and those on the right are Poison Ivy.





# Poison Ivy Rash

Average Case



Severe Case



# Treating Poison Ivy Exposures

- If you are exposed you should quickly (within 10 minutes):
  - Clean exposed areas with rubbing alcohol.
  - Wash the exposed areas with water only first.
  - Then take a shower with soap and warm water.
- Tecnu is a poison oak and ivy scrub that removes urushiol.
- Unfortunately, if you wait more than 10 minutes, the urushiol will likely stay on your skin and trigger the poison ivy rash.



# Preventing Poison Ivy

- The best way to prevent Poison Ivy is learn to identify it and then avoid it!
- You can avoid a poison ivy rash by:
  - Wearing long pants and a shirt with long sleeves.
  - Boots and gloves when your most at risk, especially when playing in wooded areas, around lakes, or going on hikes.
  - Apply **Ivy-Block** to exposed skin.





# Poisonous Snakebite

- In the U.S. the poisonous snakes are rattlesnakes, copperheads, cottonmouths, and coral snakes.
- Currently about 8,000 people per year in the U.S. are bitten by a poisonous snake, of which about 6 will die.



# First Aid for Poisonous Snake Bites

- Have victim lie down and stay calm.
- Keep bitten area immobile and below level of heart.
- Call 911.
- Wash bite wound with soap and water.
- Remove jewelry or tight clothing before swelling.
- Do not try to catch snake but note appearance.
- If possible, wrap entire extremity with elastic (compression) bandage to slow spread of venom.
- Do not use a tourniquet.
- Do not cut wound open to try to drain or suck venom out.

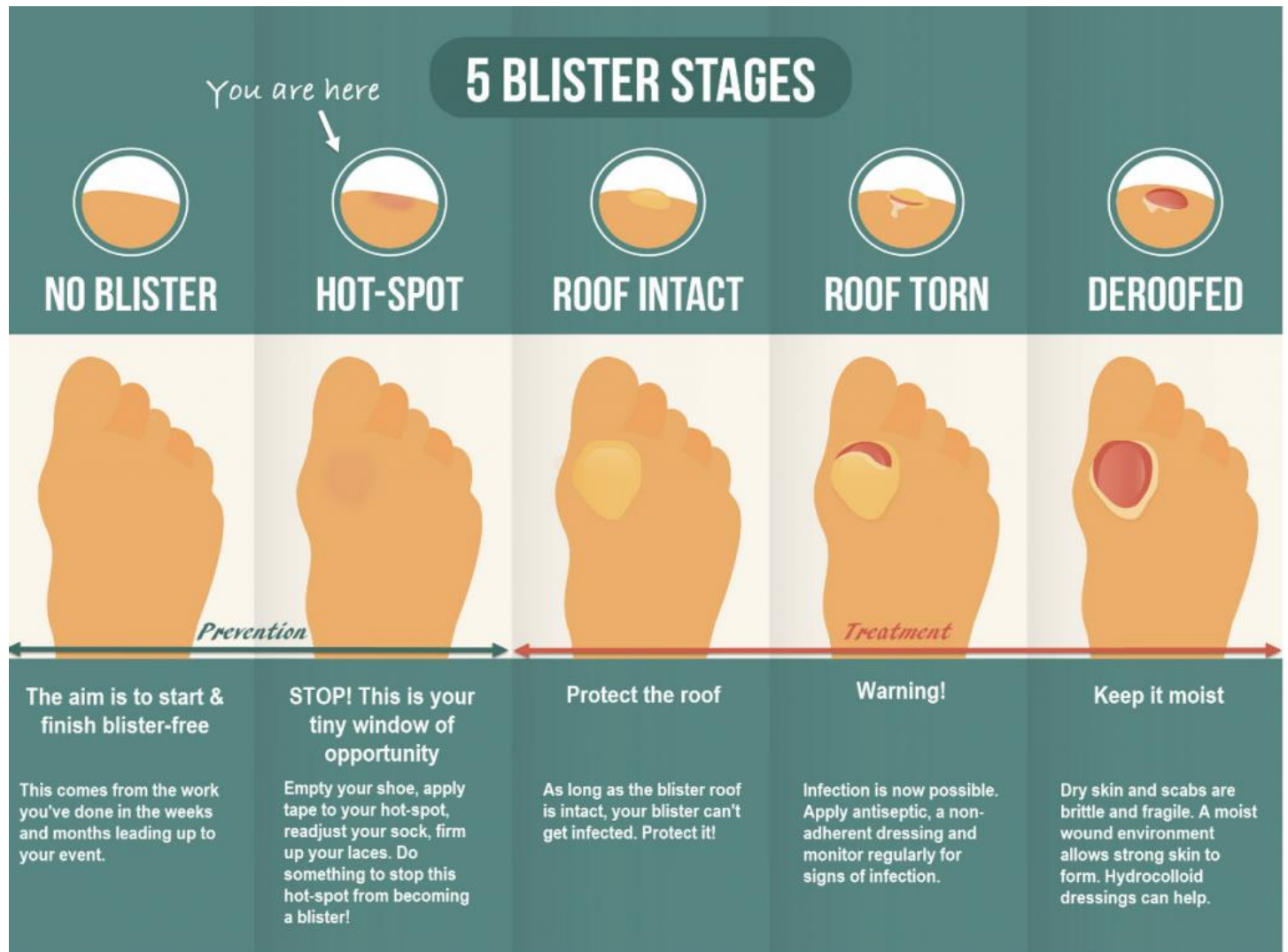




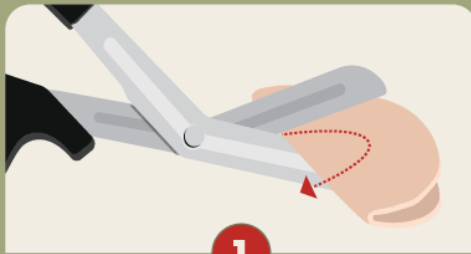
# Blisters

- A blister is skin injury that is usually filled with water.
- Blisters commonly occur on the feet or hands.
- They are most often caused by the hands or feet rubbing against something (such as wearing new shoes).





# Treatment for Blisters



1

Cut a circle of molefoam. Fold the piece in half and cut out the middle, large enough that it covers the entire blister.



2

Place a foam donut over the blister. If the blister extends past the foam, make a second donut to place on top of the first.



3

If the blister has popped, put a little antibiotic cream inside the donut.



4

Once the blister is surrounded by the donut of foam, wrap the area with athletic tape to keep the bandage in place.

- Do not open the blisters, since this increases the possibility of infection.
- Clean the skin around it.
- Take the pressure off the area by placing a Band-Aid over the blister or Moleskin with a hole cut in the center.
- If the blister accidentally breaks open, trim off the loose skin.
- Keep the surface clean by washing it twice a day with an antibacterial soap (such as Dial or Safeguard).
- Apply an antibiotic ointment and a Band-Aid to help with healing.

# Popping a Blister



- If a blister is in a frequently used area that has a high risk of rupturing, it may be best to pop it to make sure it's properly protected against infection.
- Wash your hands and the blister thoroughly.
- Disinfect a needle with alcohol.
- Carefully puncture the blister.
  - Poke three or four shallow holes around the edge of the blister.
  - You want to keep as much of the skin intact as possible.
  - Allow the fluid to drain out.
- Cover the blister with a first aid ointment such as Neosporin.
- Apply a dressing.
  - Cover the blister tightly with a bandage or gauze.
- Repeat if necessary.
  - You may need to perform these steps every six to eight hours for the first 24 hours.
  - After that, change the dressing and apply ointment daily.



# Preventing Blisters

- Friction can also be reduced by wearing two pairs of socks.
- Place Moleskin on sensitive areas where the friction may occur.





# Requirement 1



Do the following:

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- b. Discuss first aid and prevention for the types of injuries or illnesses that could occur while participating in geocaching activities, including cuts, scrapes, snakebite, insect stings, tick bites, exposure to poisonous plants, heat and cold reactions (sunburn, heatstroke, heat exhaustion, hypothermia), and dehydration.
- c. Discuss how to properly plan an activity that uses GPS, including using the buddy system, sharing your plan with others, and considering the weather, route, and proper attire.

# Managing Risk

- Use the buddy system
  - When you geocache with a buddy, you watch out for each other.
- Plan ahead
  - Know where you are going and what to expect on the trip.
  - Tell someone where you are going and when you expect to return.
  - Pack your pack by bringing a personal first-aid kit, a compass, maps, extra batteries for your GPS receiver, water, food, and extra clothing.
- Watch the weather
  - Avoid dangerous weather situations such as lightning storms.
  - Dress appropriately for the weather conditions and take plenty of water.



# Requirement 2



Discuss the following with your counselor:

- a. **Why you should never bury a cache.**
- b. How to use proper geocaching etiquette when hiding or seeking a cache, and how to properly hide, post, maintain, and dismantle a geocache.
- c. The principles of Leave No Trace as they apply to geocaching.

# Never Bury a Cache

- A cache should be well hidden, but not impossible to find.
- You should never alter the environment when you hide a cache, nor should you place the cache in such a spot that seekers will have to affect the environment when they look for it.
- Never bury a geocache or place it in thick brush that others will have to clear.
  - Since the accuracy of a GPS receiver never gets you to the exact spot, too many holes would be dug searching for a buried container.
- Burying a geocache violates the principles of “Leave No Trace.”



# Requirement 2



Discuss the following with your counselor:

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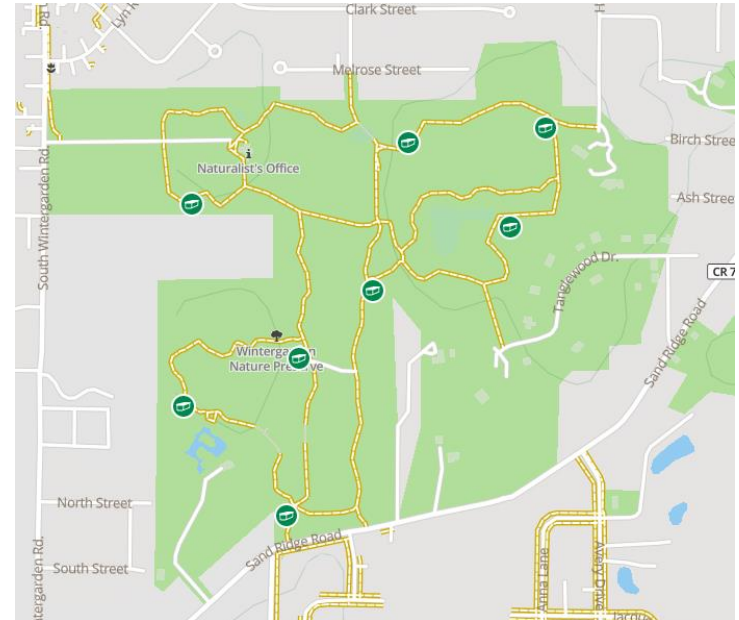


# Etiquette for Hiding or Seeking a Geocache

- Practice Cache In Trash Out (CITO). Always carry a trash bag and remove litter along your route.
- Follow Leave No Trace guidelines in the natural environment.
- Be careful of the area around the cache – don't trample the grounds, rip up sprinkler heads, etc., in your frenzy to find the cache.
- Follow all laws and regulations. Never enter private property without permission.
- Write an entry in the logbook at the cache.
- Cache items are there for fun and for trade. Try to leave something of equal value to what you take for yourself.
- Respect other visitors around the area.

# Four Steps of Hiding a Geocache

1. Research - Carefully research where you want to place your cache.
  - a. Are there adequate places to hide your cache without risk to the environment when people are seeking them?
  - b. Are there too many other caches nearby?
  - c. Seek out new places to hide caches rather than put them where others already exist.



# Four Steps of Hiding a Geocache

2. Safety – Your cache must be in a location that is safe to get to.
  - a. Get permission from the landowner or land manager.
  - b. Avoid placing caches anywhere the seekers might encounter danger (busy intersections, railroad tracks, electric utility boxes, high in trees, areas overgrown with poison ivy, giant mousetraps, etc.)



Questionable Hides



# Four Steps of Hiding a Geocache

3. The Hunt – Make sure geocachers can find your cache.
  - a. When placing the cache, can you get a good satellite signal.
  - b. Make sure your cache can easily be identified as a geocache by writing “Geocache” on the outside of the container.
  - c. Consider using a clear plastic container so the contents are easily identifiable.





# Four Steps of Hiding a Geocache

4. The Actual Find – Put your logbook in a waterproof bag along with a pencil and a note to welcome the cache finder.
  - a. Preload the cache with enough prizes for the first few people to find.
  - b. Geocaching is a family activity and the contents should be suitable for all ages.
  - c. Do not include food items.



# Posting a Geocache

- Log onto [www.geocaching.com](http://www.geocaching.com), click on the “Play” button, choose “Hide a Geocache.”
- Read through the “How to hide a geocache” articles.
- When you are certain your cache meets all the requirements for placement and you have it in place, then click on the “Hide a Cache” button and fill out the form.
- Before your cache is posted on Geocaching.com, a volunteer will review the cache to make sure the GPS coordinates are correct and it meets the requirements for listing.



# Maintaining a Geocache

- Once you place a geocache, you have an obligation to maintain the cache and the area around it.
- Monitor the online logs that are sent to you and act on any reports that your cache needs maintenance.
- If visitors are damaging the landscape, change the location and be sure to also change the online listing.





# Dismantling a Geocache

- Geocaches should not be placed unless you can actively maintain them for at least six months.
- To dismantle the cache, physically remove the cache container and any litter that may be around your hiding spot.
- Go online and archive your cache listing.

Nesting FSM by Minbari Pirate, "Argh!"

Log this geocache

 Archive 

Explain why you are archiving this geocache. Make sure to remove any physical containers if you haven't already!



# Requirement 2



Discuss the following with your counselor:

- a. Why you should never bury a cache.
- b. How to use proper geocaching etiquette when hiding or seeking a cache, and how to properly hide, post, maintain, and dismantle a geocache.
- c. The principles of Leave No Trace as they apply to geocaching.

# Leave No Trace



## 1. Plan Ahead and Prepare

- Know and comply with the geocaching policies of the landowners or land management agencies where you wish to seek or place caches.
- Prepare for your trip with proper equipment and clothing for the weather, terrain, and environmental conditions, and for emergencies.
- Be safe. Let someone know where you will be going and when you expect to return.
- Know how to use your GPS unit. Carry extra batteries and have a map and compass as backup.

# Leave No Trace



## 2. Travel and Cache on Durable Surfaces

- Travel on designated trails and roads. Comply with posted signs.
- If permitted and you must travel off-trail, choose durable surfaces such as rock, sand, gravel, and dry grass, and spread out to avoid creating new paths.
- Use maps to find a route that will minimize impacts. Note waypoints during your journey to assist you on your return trip.
- After you have finished searching for a cache, the area should look as though you were never there.
- Do not place a cache in sensitive locations such as fragile vegetation or soils, critical wildlife habitat, wetlands, lakeshores, alpine areas or caves.
- Do not place a cache in protected areas such as designated wilderness areas or wild and scenic river corridors, or near historic and cultural sites.
- If you notice a path has started to wear in the vicinity of a cache, notify the cache owner to move the cache.

# Leave No Trace



## 3. Dispose of Waste Properly

- Cache In, Trash Out. Carry an extra trash bag for trash, leftover and dropped food, and litter left by others.
- Use established bathrooms when available. If not available, deposit solid human waste in catholes dug 6-8 inches deep at least 200 feet from water sources, campsites, trails, and caches.
- Pack out toilet paper and hygiene products in a double plastic bag.



# Leave No Trace



## 4. Leave What You Find

- Preserve the past. Observe, but do not touch, cultural or historic structures and artifacts. Never use artifacts as cache items.
- Leave rocks, plants, and other natural objects for others to enjoy.
- Practice the “lift, look, replace” technique. If you lift a rock to look under it, replace it exactly as you found it.

# Leave No Trace



## 5. Minimize Campfire Impacts

- If you plan to have a fire, know the fire regulations and current guidelines for the area you plant to visit.
- This is not often relevant for geocaching, but it is good to remember.

# Leave No Trace



## 6. Respect Wildlife

- Observe wildlife from a distance. Do not follow or approach animals.
- Never feed wild animals. Feeding wildlife damages the animals' health, alters natural behaviors, and exposes animals and other geocachers to predators and other dangers.
- Protect wildlife and your food by storing rations and trash securely.
- Never leave food of any kind in a cache. Wildlife may find and destroy the cache, and animals may be harmed by consuming food wrappers.
- Respect wildlife when traveling to and from cache locations. Avoid locations with significant wildlife traffic, such as water sources.
- Keep pets on a leash for their safety and the safety of wild animals. Consider leaving pets at home.

# Leave No Trace



## 7. Be Considerate of Other Visitors

- Be courteous. Yield to other users on the trail.
- Take breaks on durable surfaces away from the trail.
- Let nature's sounds prevail. Avoid loud voices and noises.
- Respect the rights and experiences of other visitors. Geocaching is only one of many outdoor recreational activities.
- Don't trespass. When traveling to and from caches, take notice of private property signs.
- Practice the principles of Leave No Trace. The future of geocaching lies in the hands of geocachers.



## Requirement 3



Explain the following terms used in geocaching: waypoint, log, cache, accuracy, difficulty and terrain ratings, attributes, trackable. Choose five additional terms to explain to your counselor.

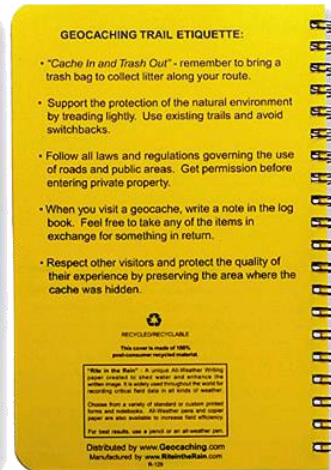
# Waypoint

- A **Waypoint** is a reference point for a physical location on Earth.
- It may be a landmark, a destination, or a point along a route on the way to reaching the destination.
- Waypoints are defined by a set of coordinates that typically include latitude and longitude (or UTM coordinates), and sometimes altitude.



# Log

- The **Log** (logbook, notebook, or log sheet) inside a cache contains information from the cache owner and provides a place for geocachers to write their name and the date they visited the cache.
- Space may also be available for visitors to write notes or leave comments for the cache owner.



GEOCACHING		GEOCACHING		GEOCACHING	
Congratulations, you've found it!		Congratulations, you've found it!		Congratulations, you've found it!	
Cache Name: _____		Cache Name: _____		Cache Name: _____	
1 FTF is: _____		1 FTF is: _____		1 FTF is: _____	
Date: _____ Time: _____		Date: _____ Time: _____		Date: _____ Time: _____	
Name	Date	Name	Date	Name	Date
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
11		11		11	
12		12		12	
13		13		13	

# Cache and Hide

- A **cache**, or **geocache**, is a container hidden at specific coordinates that includes, at a minimum, a logbook for geocachers to sign when they find the cache.
- Caches may also contain “treasure,” or items to trade.
- **Hide** is a shorthand term for a cache that is hidden.





# Accuracy and Ground Zero



- **Accuracy** in geocaching is the degree of closeness to the exact location.
  - Neither a GPS or smartphone will give you an exact position.
  - At best, you'll get an accuracy of 10 to 15 feet (3 to 5 meters)
- **Ground Zero** is the point where your GPS device shows that you have reached the exact cache location.
  - In practice, you almost never reach true “ground zero.” (See accuracy.)



# Difficulty and Terrain Ratings

- **Difficulty** is a ranking system to describe how hard the cache is to find.
  - A cache that can be found quickly is ranked 1 (easiest to find).
  - A cache that is ranked 5 is exceptionally well hidden and is hardest to find.
- **Terrain Ratings** describe the land features and how hard the cache is to get to.
  - Terrain that can be traversed in a wheelchair has a rating of 1 (flat and easy and not too far.)
  - A 5 rating probably means it will likely require special equipment such as scuba gear or mountaineers' ropes.
- See chart on next slide.
















DIFFICULTY		TERRAIN
★☆☆☆☆	Easy to find or solve within a few minutes.	Area will likely be paved, flat, wheelchair accessible and will require less than a .5 mile (.8 km) hike.
★★☆☆☆	Easy to find or solve within about 10–15 minutes.	Most likely a flat, less than a .5 mile hike, but may not be wheelchair accessible.
★★★☆☆	Relatively easy to find or solve within 30 minutes.	Less than a 2 mile (3 km) hike along well-defined paths with no significant elevation change or overgrowth.
★★★★☆	A mild challenge, but relatively easy for an experienced geocacher.	Terrain may have small elevation changes or moderate overgrowth.
★★★★☆	Somewhat challenging puzzle or hiding spot.	May require a 2+ mile (3+ km) hike on varied terrain and may have elevation changes or significant overgrowth.
★★★★★	Quite difficult. Be prepared for a mental challenge.	Quite strenuous, extended hike on widely variable terrain.
★★★★★	Very difficult and may take special knowledge, advanced preparation or multiple trips.	Very strenuous movement that may include significant distance, overgrowth, swimming and/or elevation changes.
★★★★★	Extremely difficult. Most likely requires special knowledge or skills.	Extremely demanding movement over potentially hazardous terrain.
★★★★★	The most extreme mental challenge. Requires specialized knowledge, skills or significant effort to find, solve or open.	Requires specialized equipment such as scuba gear, a boat, rock climbing gear, etc...

# Attributes

- **Attributes** are icons on a cache detail that are intended to provide helpful information to geocachers who wish to find specific types of caches.
- The icons represent unique cache characteristics

Conditions	
	Recommended for Kids
	Takes Less than an Hour
	Scenic View
	Difficult Climbing
	May Require Wading
	May Require Swimming
	Available at All Times
	Recommended at Night
	Available during Winter
	Stealth Required
	Watch for Livestock

Conditions	
	Field Puzzle
	Park and Grab
	Abandoned Structure
	Short Hike
	Medium Hike
	Seasonal Access
	Front Yard (Private Residence)
	teamwork required
	Geo Tour
	No Tree Climbing
	Tourist Friendly

# Trackable

- A **Trackable** is anything with a tracking number or other unique identifier that can be followed as the item travels from cache to cache.





# Clue and Spoiler

- **Clues** or hints give the person seeking the cache a little more information to help find it.
  - The cache name, part of the description, or an official hint can all be clues.
  - Examples:
    - **Tie Your Shoe** = Bend down and look at a lower level
    - **Attractive** = Magnetic geocache
    - **Troll** = Under a bridge
- A **Spoiler** is information that gives away the location of the find.





# Being Muggled

- When someone has broken into a cache and ruined it, that is called “**Being Muggled.**”



# Travel Bug and Watch List



- A **Travel Bug** is an item that travels from cache location to cache location with a trackable number written on a metal tag so you can record on the Geocaching.com website where you picked it up and where you dropped it off.
- Travel Bugs often have a “mission” of getting to a certain location or state.
- A **Watch List** is a list of users who are watching a specific Travel Bug or cache.

# Archive

Geocaching HQ  
Admin  
Lackey



## Archive

This series of caches have been abandoned by their owner. Archiving.

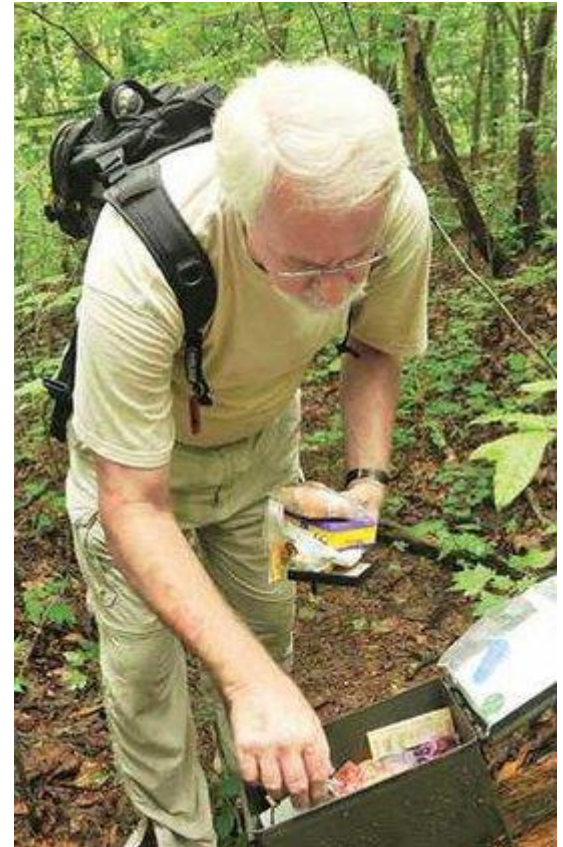
2019-11-07

[View Log](#)

- If you want to remove your cache from the public listing (or if a reviewer does this for you for lack of maintenance), it is “**Archived.**”
- You can also temporarily disable a cache if you need to inactivate it for a short time.

# Reviewer

- **Reviewers** are volunteers from all over the world check new listings for various issues (making sure the cache follows the guidelines) and then publish the cache listings on Geocaching.com.





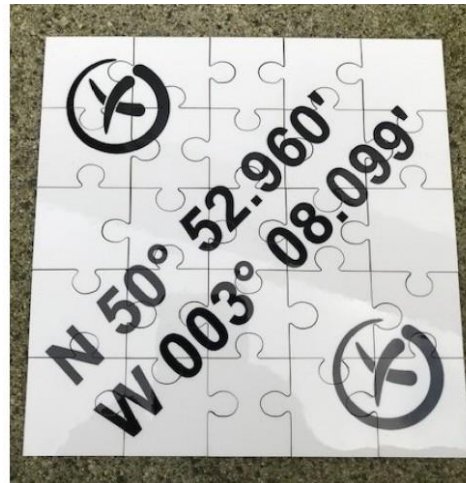
# Acronyms

- **CITO** – Cache In Trash Out. In this geocaching event, people do cleanup for parks or the community.
- **DNF** – Did Not Find. Geocachers use this acronym to state that they did not find a cache. If you get several DNF responses for a cache you set up, it's time to check on it!
- **FTF** – First To Find. This acronym is used when logging cache finds to denote being the first to find a new geocache.
- **GC** – Geocache Code. Each code assigned to public geocache listings is unique.
- Other common acronyms often written in logs:
  - **TFTC** – Thanks For The Cache
  - **TFTH** – Thanks For The Hide
  - **TNLN** – Took Nothing Left Nothing
  - **TNSL** – Took Nothing Signed Log



# Types of Caches

- **Traditional Cache** – An ordinary hide with a single cache found at the given coordinates.
- **Multi Cache** – This type of cache has more than one part. You may find the coordinates of the second cache in the first, and so on.
- **Mystery or Puzzle Cache** – The actual cache is not at the coordinates that are listed on the website. Instead, there is a puzzle that must be solve to lead to the actual site.



# Types of Caches



- **Letterboxing** ([www.letterboxing.org](http://www.letterboxing.org)) – A form of treasure hunting that uses clues to direct the seekers to a hidden container. Each container has a unique stamp that you use to mark your logbook and you leave your own unique stamp in the letterbox logbook. Do not take the stamp from the letterbox.

## Requirement 4



Explain how the Global Positioning System (GPS) works. Then, using Scouting's teaching EDGE, demonstrate the use of a GPS unit to your counselor. Include marking and editing a waypoint, changing field functions, and changing the coordinate system in the unit.

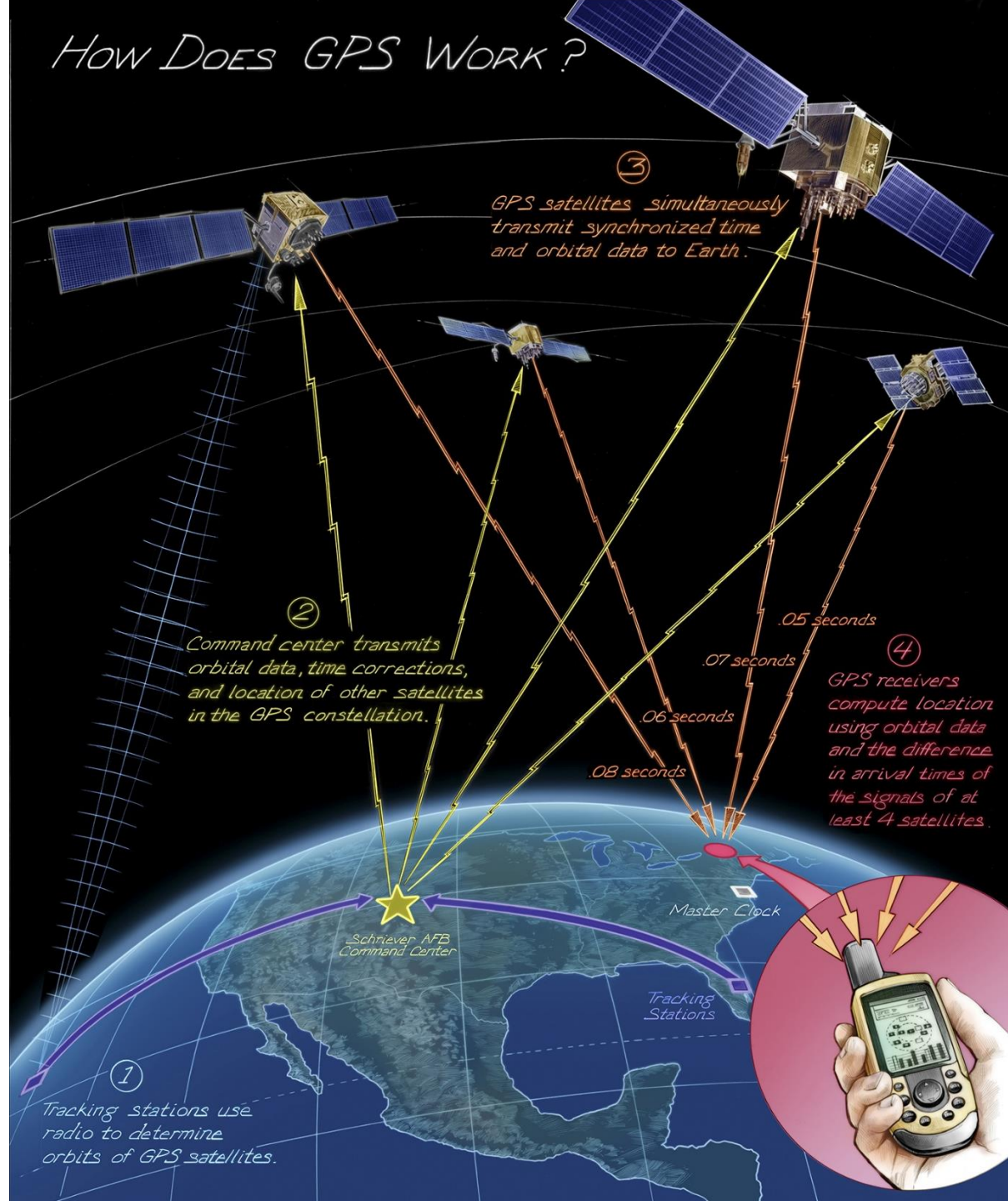


# How Does the GPS System Work?

- A GPS receiver calculates its position by carefully timing the signals sent by the 31 orbiting GPS satellites.
- Each satellite continually transmits data that indicates its location and the current time.
- All GPS satellites transmit signals at the same instant, but the signals arrive at a GPS receiver at slightly different times.
  - The farther the receiver is from a satellite, the longer the signal takes to reach the receiver.
  - The receiver uses the arrival time of each signal to measure the distance to each satellite.
- Once the receiver has detected signals from a minimum of 4 satellites, the GPS unit can calculate the receiver's location and altitude.
- The more satellites the receiver tracks and acquires, the better the accuracy.



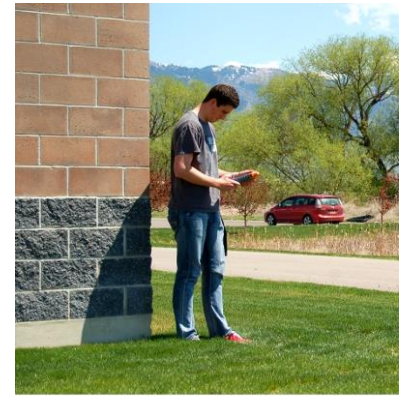
# How Does GPS WORK?





# GPS Signal Obstruction

- Tall buildings, trees, tunnels, canyons, mountains, clothing, and the human body can interrupt satellite signals, slowing them down and reducing your device's accuracy.
- Clouds and weather, however, shouldn't affect reception.
- When possible, put a GPS receiver in a place where it has a clear and unobstructed view of a large portion of the sky.



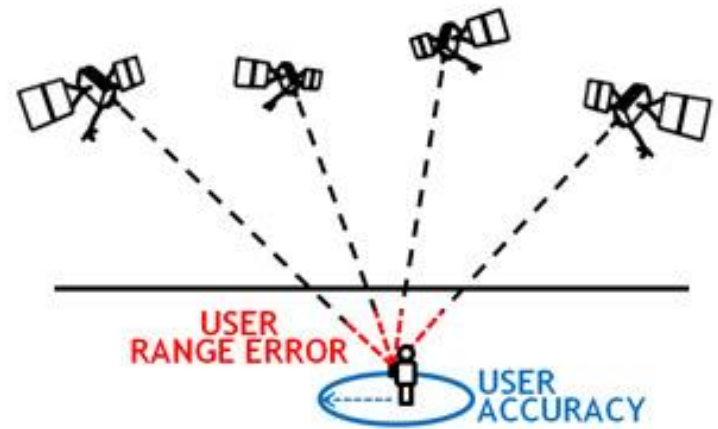
Good



Bad

# GPS Accuracy

- A common error for beginning geocachers is to try to get the number in the GPS “distance” field to go to zero.
- Most modern GPS units can be accurate to 3-meters (10 feet) or less.
- Modern smartphones, in contrast, offer GPS accuracy of around 4.9 meters (16 feet) .
- Searching for “ground zero” or the exact final spot is required in most cases.



# Using a GPS Receiver

- To list all the functions of every GPS receiver on the market would be difficult.
- This overview covers the basic functions of generic GPS receivers.
- Each GPS unit comes with its own detailed instructions to help you.



# Basic Functions of a GPS Receiver

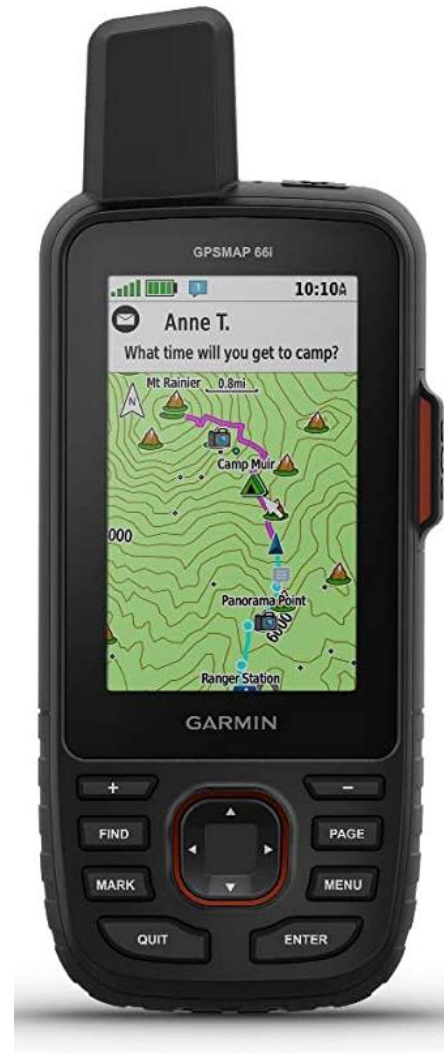
- Basic geocaching will require you to be able to switch between different function screens, to enter coordinates, to mark a waypoint, and to know how to use the compass screen and its data fields.
- Locate the device's on/off button.
- Next learn where the battery-level indicator is and how to recharge or change the batteries.
  - Always carry an extra set of fresh batteries, just in case.





# Basic Functions of a GPS Receiver

- **NAV** (navigation) or **PAGE** Button
  - The means to change from screen to screen.
  - i.e. satellites acquired, compass, map display
- **ENTER** Button
  - Allows you to select an option or menu choice.
- **ESCAPE, QUIT, or BACK** Button
  - Used to leave the screen you are on and return to the previous screen and function.
- **UP, DOWN, LEFT, and RIGHT** Buttons
  - Allows you move around the various functions or menus to accomplish tasks.



# Basic Functions of a GPS Receiver

- **MARK** Button
  - Records where you are.
- **ZOOM** Buttons
  - Allows you to zoom in or out while viewing the map screen.
- **MENU** Button
  - Displays a list of options for functions and configurations that allow customizing the GPS receiver.
- **GOTO** or **FIND** Button
  - Lets you search your programmed waypoints or geocache locations that are stored in the GPS unit's memory.



# Requirement 5



Do the following:

- a. Show you know how to use a map and compass and explain why this is important for geocaching.
- b. Explain the similarities and differences between GPS navigation and standard map reading skills and describe the benefits of each.

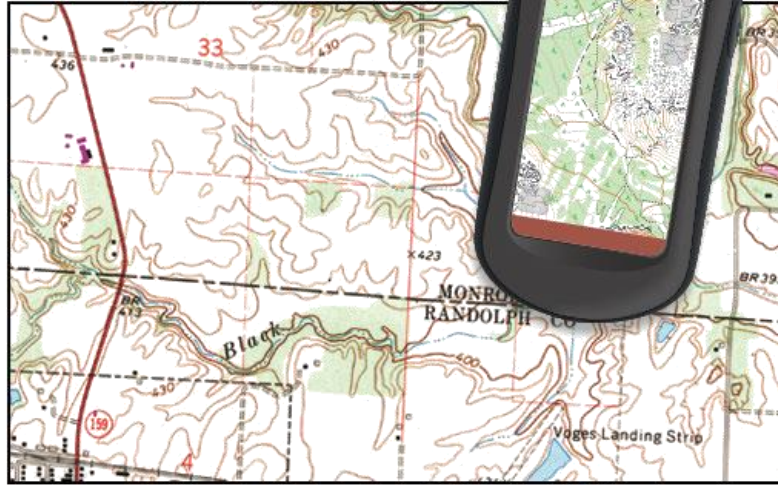
# Map and Compass

- Why do you need to know how to use a map and compass when the GPS receiver's arrow tells you where to go?
  - The GPS unit can, and will fail.
  - It won't tell you what is between you and your objective.
  - Batteries may die.
  - You may be in a location where you can't get a good signal.
  - You might accidentally program in the wrong coordinates and be heading in the wrong direction.





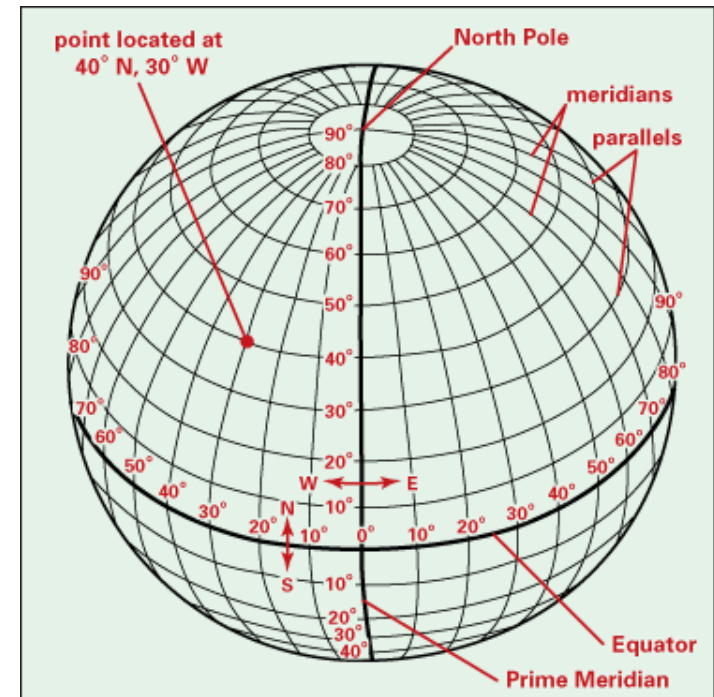
# Topographic Maps



- Topographic maps use contour lines to show elevation and colors to represent water, forested areas, roads, and other features.
- A topographic map provides precise details and a large view of the area to better map out your route.
  - Most GPS receivers offer the option to upload topographic maps directly to the unit.
  - Due to screen size, you can view a large area with little detail or a small area with great detail.

# Latitude and Longitude

- Lines of Latitude or parallels, circle the globe in a horizontal direction and measure north-south position between the poles.
  - The equator is defined as 0 degrees, the North Pole is 90 degrees north, and the South Pole is 90 degrees south.
- Lines of Longitude, or meridians, run vertically, dividing Earth into segments that meet at the North and South Poles.
  - Meridians measure east-west position.
  - The prime meridian, which runs through Greenwich, England is assigned the value of 0 degrees.
  - Meridians to the west of the prime meridian are measured in degrees west; those to the east of the prime meridian are measured in degrees east.



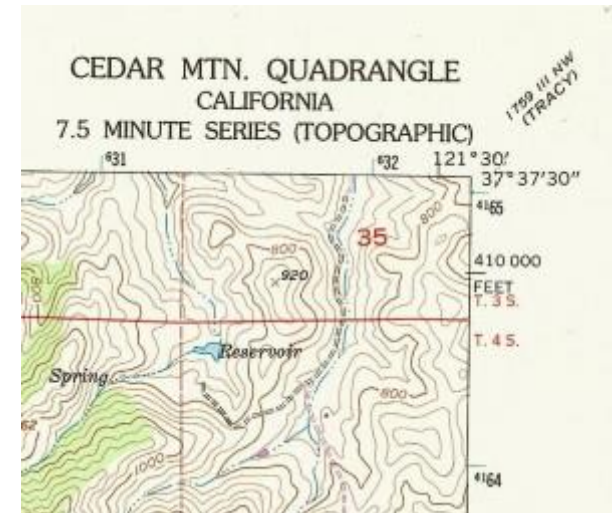


# Latitude and Longitude

- To show precise locations, each degree of longitude and latitude is divided into 60 minutes.
- Each minute of longitude and latitude is divided into 60 seconds.
- Symbols used for these units of measure:
  - $^{\circ}$  = degrees, ' = minutes, " = seconds
- A position on the globe is started latitude first, followed by longitude.
  - i.e. The coordinates of latitude and longitude for the summit of Baldy Mountain in New Mexico is  $36^{\circ}37'45''\text{N}$ ,  $105^{\circ}12'48''\text{W}$ .

# 7.5 Minute Topographic Map

- Topographical maps contain longitude and latitude values, expressed in degrees, minutes and seconds.
- In this sample map, the right hand longitude is listed as 121 degrees, 30 minutes, and 0 seconds (zero is assumed and not explicitly printed).
  - The upper left corner (not shown) lists 121 degrees, 37 minutes, and 30 seconds.
  - The difference between the right and left edges of the map is 7 minutes and 30 seconds (or 7.5 minutes).
- In the upper right hand corner the latitude is listed as 37 degrees, 37 minutes, and 30 seconds.
  - The lower right hand corner (not shown) lists 37 degrees, 30 minutes, and 0 seconds.
  - Again, 7.5 minutes of latitude between the bottom and top of the map.





# Common Formats for Latitude and Longitude

- Degrees, Minutes, and Seconds (DDD<sup>°</sup> MM' SSSS")
  - The most common format used to mark topographic maps.
  - BSA national office is at 32<sup>°</sup> 53' 08.72" N, 096<sup>°</sup> 58' 13.13" W.
- Degrees and Decimal Minutes (DDD<sup>°</sup> MM.MMM')
- The format most commonly used with GPS devices and Geocach.com.
- BSA national office is at 32<sup>°</sup> 53.137 N, 096<sup>°</sup> 58.218' W.
- Decimal Degrees (DDD.DDDDD<sup>°</sup>)
  - The format most commonly used with computer-based mapping systems display.
  - Positive values are for latitudes North of the equator and East longitudes.
  - Negative values are for latitudes South of the equator and West longitudes.
  - BSA national office is at 32.88563, -096.97031.



# Requirement 5



Do the following:

- a. Show you know how to use a map and compass and explain why this is important for geocaching.
- b. Explain the similarities and differences between GPS navigation and standard map reading skills and describe the benefits of each.

Characteristics	Compass	GPS
Cost	Low	High
Dependability	Compasses can give false readings, but these can usually be avoided with care. Keep the compass away from all metal objects since these can deflect the magnetic needle. Many geological formations and rocks are magnetized and can affect compass readings, as can electricity power lines and cables.	A GPS requires a strong signal to work accurately. It won't receive a signal inside most buildings or in caves and sometimes under heavy forest cover or even just a cloudy day. Batteries can run out.
Display	A compass must be used with a large paper map, which helps give an area a broad geographical context.	GPS displays are too small to give you a good sense of geographic context.
Ease of use	Using a map and compass requires a higher level of navigational skill and understanding.	An electronic device that demands a lower level of navigational understanding, although extensive training is required to use to its full advantage. Easier to use than a traditional map and compass when walking.
Range of functions	Without a map, a compass only shows you north.	Can store a range of maps and can pinpoint exactly where you are on a map. It will let you know how much distance you've covered and how much further you have to go. It can also estimate your altitude.
Risk of breakage	Simple and robust technology with a very low risk of breakage.	It can break or stop working if you drop it or if it gets wet.
Weight	Lightweight	Heavier and more bulky. Spare batteries must be carried.



# GPS Versus Map Navigation

- A GPS unit provides far more detailed navigational information than a compass, although the navigational understanding required is more superficial.
- Using a compass with a map gives a broader geographical context, helps you remember the route and learn about other things on the way.
- A compass and map are more reliable but require a higher level of navigational skill and understanding and should always be carried on a trek.
- Both compliment each other and help make up for the other's shortfalls.

# Requirement 6

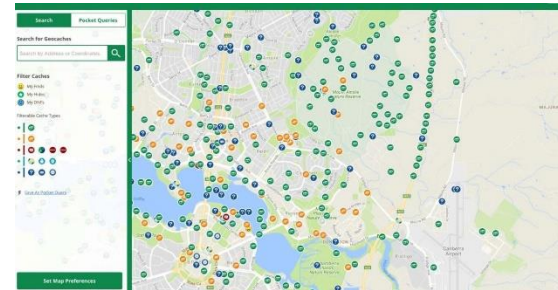


Describe the four steps to finding your first cache to your counselor. Then mark and edit a waypoint.

# Finding Your First Cache

## Step 1 – Research

- Go to [www.geocaching.com](http://www.geocaching.com) and register for a free basic membership.
- To locate the geocaches nearest you, enter your zip code and click the search icon.
  - The list will tell you:
  - How far away a cache is.
  - What type of cache it is.
  - How difficult it is to find.
  - How difficult the terrain is.
- Choose a geocache from the list and click on its name.
- Enter the coordinates of the geocache into your GPS device.
- You will need the right maps to help you search.
  - A road map may be appropriate for an urban cache.
  - A topographical map may be necessary for a rural cache for terrain details.





# Finding Your First Cache



## Step 2 – Safety

- Before you head out, be sure to tell someone where you are going and when you expect to return.
- Use the buddy system.
- Pack your pack.
- Bring a personal first-aid kit, a compass, maps, and extra batteries for your GPS receiver.
- Bring water and food.
- Pack extra clothing appropriate for the weather.

# Finding Your First Cache

## Step 3 – The Hunt

- Mark your starting place as a waypoint to guide your return.
- Use your GPS device to help you find the geocache.
- From your research, you should know the best approach for getting near the cache.
- As you get closer to the final location, don't rely too much on the GPS pointer arrow, but rather concentrate more on the overall distance decreasing.
- The final 30 feet can be the most difficult.
- At this stage, look around for likely hiding spots and remember, a cache may be cleverly hidden and camouflaged.



# Finding Your First Cache

## Step 4 – The Actual Find

- Sign the cache's logbook with your name or "handle, the date, and a few words about your experience.
- Caches often have prizes inside to be traded.
  - If you trade for items, leave an item of at least equal value to what you take.
- Use the waypoint you created to guide your return.
- When you get home, log your visit online by going back to the cache's page at [Geocaching.com](https://www.geocaching.com).



# Requirement 7



With your parent's permission\*, go to [www.geocaching.com](http://www.geocaching.com). Type in your city and state to locate public geocaches in your area. Share the posted information about three of those geocaches with your counselor. Then, pick one of the three and find the cache.

\*To fulfill this requirement, you will need to set up a free user account with [www.geocaching.com](http://www.geocaching.com). Ask your parent for permission and help before you do so.



# Geocaching.com

- [www.geocaching.com](http://www.geocaching.com) is the most popular website for the public sport of geocaching.
- The site has more than a million active caches and has hundreds of thousands of users worldwide.
- Basic membership is free, but for a small yearly fee, you can get the bonus features of a premium membership.
- After logging in, go to the [Help Center](#) as there are several topics that are must-reads for beginning geocachers.
- All caches posted on Geocaching.com adhere to their guidelines and are confirmed by volunteer reviewers.





# Requirement 8



Do ONE of the following:

- a. If a Cache to Eagle® series exists in your council, visit at least three of the 12 locations in the series. Describe the projects that each cache you visit highlights, and explain how the Cache to Eagle® program helps share our Scouting service with the public.
- b. Create a Scouting-related Travel Bug® that promotes one of the values of Scouting. "Release" your Travel Bug into a public geocache and, with your parent's permission, monitor its progress at [www.geocaching.com](http://www.geocaching.com) for 30 days. Keep a log, and share this with your counselor at the end of the 30-day period.
- c. Set up and hide a public geocache, following the guidelines in the **Geocaching** merit badge pamphlet. Before doing so, share with your counselor a three-month maintenance plan for the geocache where you are personally responsible for those three months. After setting up the geocache, with your parent's permission, follow the logs online for 30 days and share them with your counselor. You must archive the geocache when you are no longer maintaining it.
- d. Explain what Cache In Trash Out (CITO) means, and describe how you have practiced CITO at public geocaches or at a CITO event. Then, either create CITO containers to leave at public caches, or host a CITO event for your unit or for the public.

# Cache to Eagle

- **Cache to Eagle** is a series of public geocaches that have been set up at the sites of Eagle Scout Service projects.
- Contact your local council to see if they have set up a Cache to Eagle Program.



# Requirement 8



Do ONE of the following:

- a. If a Cache to Eagle® series exists in your council, visit at least three of the 12 locations in the series. Describe the projects that each cache you visit highlights, and explain how the Cache to Eagle® program helps share our Scouting service with the public.
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# Travel Bugs

- Travel Bugs are a main trackable item that can be purchased through Geocaching.com.
- Travel Bugs are like dog tags with a unique code that you can attach to any item of your choice.
- Travel Bugs at Geocaching.com have a page with the object's mission (what the owner wants to have happen with the traveling object).
- Miles traveled are logged and the person who moves it to a new cache posts a note about it on the Geocaching.com site.



# Requirement 8



Do ONE of the following:

- a. If a Cache to Eagle® series exists in your council, visit at least three of the 12 locations in the series. Describe the projects that each cache you visit highlights, and explain how the Cache to Eagle® program helps share our Scouting service with the public.
- b. Create a Scouting-related Travel Bug® that promotes one of the values of Scouting. "Release" your Travel Bug into a public geocache and, with your parent's permission, monitor its progress at [www.geocaching.com](http://www.geocaching.com) for 30 days. Keep a log, and share this with your counselor at the end of the 30-day period.
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- d. Explain what Cache In Trash Out (CITO) means, and describe how you have practiced CITO at public geocaches or at a CITO event. Then, either create CITO containers to leave at public caches, or host a CITO event for your unit or for the public.



# Setting Up Your Own Geocaches



- Follow the rules when you place your own cache.
- Complete geocaching guidelines for Geocaching.com are at <https://www.geocaching.com/play/guidelines>.
- The guidelines cover safety rules as well as environmental concerns.
- Geocaching.com also has a quick guide to hiding your first geocache at <https://www.geocaching.com/play/hide>.

# Requirement 8



Do ONE of the following:

- a. If a Cache to Eagle® series exists in your council, visit at least three of the 12 locations in the series. Describe the projects that each cache you visit highlights, and explain how the Cache to Eagle® program helps share our Scouting service with the public.
- b. Create a Scouting-related Travel Bug® that promotes one of the values of Scouting. "Release" your Travel Bug into a public geocache and, with your parent's permission, monitor its progress at [www.geocaching.com](http://www.geocaching.com) for 30 days. Keep a log, and share this with your counselor at the end of the 30-day period.
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# Cache In Trash Out (CITO)



- The Cache In Trash Out program is a way for geocachers to repay the public parks and other locations for allowing geocaching on their property.
- The easiest way to use CITO is to carry a trash bag with you whenever you geocache and use it to clean up the areas where the caches are located.
- You can also organize a community CITO event.
  - A community service project in which public geocachers work side by side with Scouts.
  - Work with an agency or a community organization to decide on a good service project.
  - Then create an event listing on [Geocaching.com](http://Geocaching.com)
- DIPO - Dog In Poop Out
  - Make sure you clean up after your pets!

# Making CITO Containers

- Old film canisters make great CITO containers.
  - Place trash bags inside them to leave in geocaches.
  - Create custom decorated CITO labels for the containers.
- These containers can move from cache to cache.
- People pick up the container, use the bag inside to clean up the immediate are, and then replace the bag with a clean one form home and drop off the container at the next cache they find.



# Requirement 9



Plan a geohunt for a youth group such as your troop or a neighboring pack, at school, or your place of worship. Choose a theme, set up a course with at least four waypoints, teach the players how to use a GPS unit, and play the game. Tell your counselor about your experience, and share the materials you used and developed for this event.





# How to Plan and Run a Geocaching Game

1. Plan ahead. Decide what the game is for, who will take part, where it will be, what safety precautions must be followed, what you need to set up the game, and how you will clean up after the game.
2. Get any permissions that are needed, including permission slips for the youth participants, permission from the property owner, and the permission of your senior patrol leader, Scoutmaster, or Troop Committee.
3. Set up the game ahead of time. Design and load the appropriate number of cache containers for your game and hide them before people arrive.
4. Have clear rules and objectives for your game. Be sure each participant understands the safety rules and the principles of Leave No Trace.
5. Play the game!
6. Afterward, debrief the activity (explain what the game was about.)
7. Clean up the area and be sure to pick up all cache containers from their hiding places.
8. Download the form “**Planning a Geohunt for a Youth Group**” to help you plan this activity.

# Theme Ideas

- Scout Rank Advancement
- Path to Eagle
- Pirates
- Star Wars
- Pokémon
- Raiders of the Lost Arc
- Town History

