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Wilderness Survival 101 Handouts

To include sections on:

- **Survival Mentality and Priorities**
- **Survival/Emergency Preparedness Gear**
- **Bowdrill – Friction Fire**
- **Aidless Land Navigation and Lost Prevention**
- **Body Temperature/Shelter**
- **Water purification**
- **Cordage**

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Survival Mentality and Priorities

Your brain is the most important tool in your toolbox

Fear and anxiety is normal and actually is an important survival skill but you need to use it as a tool to keep you safe and not as a barrier that holds you back.

As a human your biggest survival advantage is your intelligence. You are not the strongest or the fastest creature on the planet, you are the smartest.

- You must keep a cool head if you want to make good sound decisions
- You must develop the ability to calm yourself in crisis
    - Breathing tips – Breathing and stress are directly connected. If you can control your breathing you can control your stress
    - Sit down/Calm Down
    - Don't make impulsive decisions

Survival theory is simple though in practice it can be incredibly challenging dependent on your situation

Three most important survival rules

- Determine your need and develop a solution – Use the survival triangle below to learn about need priortiy
- Always continually work to improve your circumstances
    - Get up and get yourself another blanket phenomenon – empower yourself as a problem solver, not a sit around and complainer
- Don't make your situation any worse

DON'T:

- Feel sorry for yourself
- Or loose your cool
- Or let yourself be deterred by getting overwhelmed

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- NEVER GIVE UP!

DO:

- Stay in the moment and focus on the task at hand
- Make sound decisions
- Relish your victories, no matter how small
- Think outside the box
- Do as the animals do
- Try to maintain your sense of humor and don't take things so personally

Acronym **S.U.R.V.I.V.A.L**

Size up the situation

Use all your senses

Remember where you are

Vanquish your fears

Improvise

Value living

Act like the natives

Live by your wits

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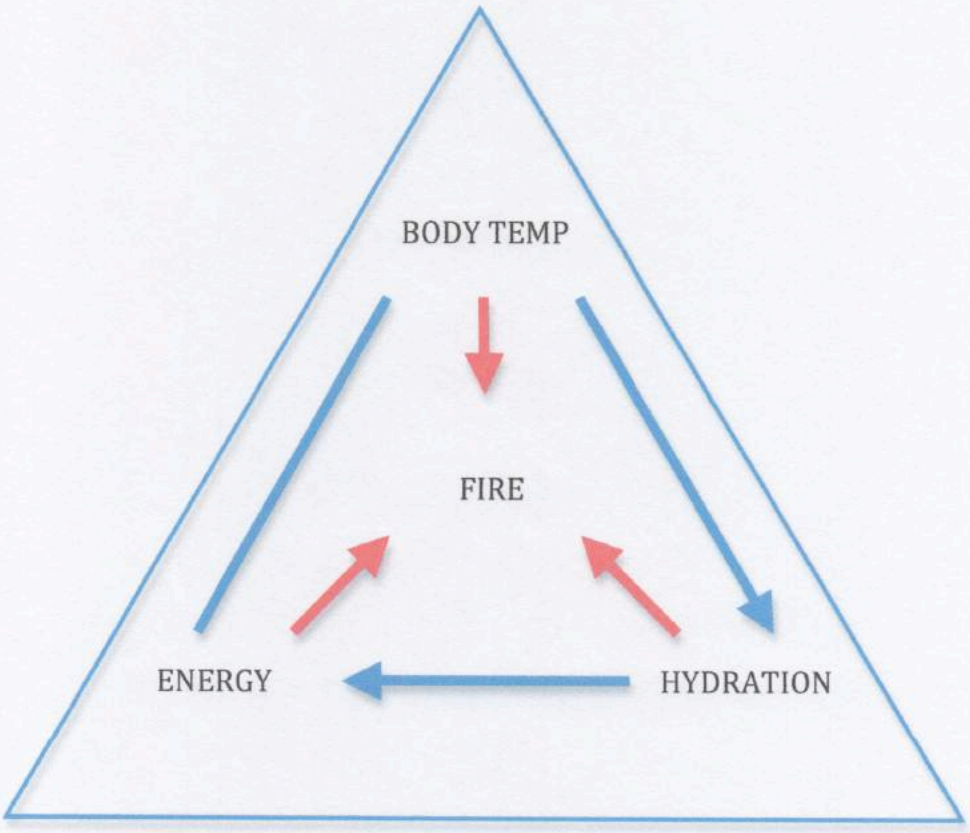
Survival Triangle: The survival triangle below is all about understanding and prioritizing problems. Start at the top of the triangle and move clockwise.



Anticipate to be very busy in the first 48 hours of a survival situation. Should have dealt with your body temperature issue, found food, found and purified adequate water, potentially kindled a fire.

Be efficient to preserve energy

Expect to be sore

Must adjust your idea of comfort

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Survival/Emergency Preparedness Gear

Tier 1 – On person:

Good quality folding knife

Magnifying glass (recommend keeping credit card size magnifying glass in wallet)

Clothing appropriate to weather and activity **Acknowledging the unexpected**

Light of some type – Small LED on keychain, or cell phone

GAIA Phone app and maps downloaded for your surrounding area or the area you are visiting

Situational dependent:

Fire starter

Compass

Optional:

Small Multi-tool/Keychain tool

Cordage (recommend Paracord) - integrate as shoe laces or as keychain

Tier 2 - In every day pack/bag:

Non-folding (Recommend MORA)

Fire starter (lighter, matches, and/or ferr rod)

Fire starting fuel (Recommend fat-wood)

Compass (Recommend integrating a small keychain compass into bags and having larger compass)

Stainless steel water bottle (Un-insulated)

Water purification tablets

Large black trash bag + a couple of Ziploc bags

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3 to 4 water-tight bread bags (to use as layer between dry socks and wet shoes)

+What ever gear you need for your activity

Situational dependent:

LifeStraw or similar water filter

Extra warm clothing layers (if cold weather)

Extra pair of warm socks wrapped inside 2-4 bread bags (add to every-day bag during cold weather to wrap feet to create waterproof layer between dry socks and wet shoes)

Rain Gear (raincoat and rain-pants)

Small First-aid kit

PowerBank battery pack – For re-charging phone

Small dedicated pack:

Tools-

Quality non-folding knife (Recommend Mora)

Compass

Quality multi-tool

LED flashlight with constant on switch (strobe optional) – Recommend light that has low LED output option with long battery life

Folding saw (recommend Gamboy or Bahco Laplander)

Fire-

2-4 fire starter options recommended in order (hurricane matches, Ferro rod, lighter, strike anywhere matches)

Fire starter fuel (Recommend fatwood)

Magnifying glass (recommend credit card size)

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Shelter –

2 emergency ponchos

3 Thick black extra large trash bags

Lightweight small tarp (recommend small tent floor with grommets) – Note: this may not fit into a really small dedicated pack. If not, consider a piece of thicker clear plastic sheeting (readily available at any hardware store) – Learn how to tie a Sheet Bend knot!

Water:

LifeStraw or similar quality lightweight small personal water filter

Iodine water purification tablets

2 clear 2liter water carrying bags

Stainless steel water bottle

Food:

A small amount of high calorie food – recommend between 500-1000 calories

Sugar and Salt packets

Emergen-C or other electrolyte replacement

Supporting items:

Small first aid kit (bandages – small and larger, irrigation syringe, pain killers, Benadryl, anti-biotic ointment, medical tape, small scissors, tweezers, sterile rolled gauze, small amount of concentrated soap, **plus a week's worth of any critical prescription medications that you take**

Extra pair of glasses (if you wear glasses) – Tip- use older pair after you get new glasses

Small bit of duct tape

30 feet of para-cord (military specification)

Extra - fresh batteries (enough to replace in light at least 2 times)

Several gallon size Ziploc bags

Picture frame wire (30 feet) – for snares or 6 premade small game snares

Whistle

Signal mirror

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Supporting items Cont. -

Small (film canister sized fishing kit – hooks, braided fishing-line, rubber worms, dry flies, a few lead weights)

Optional adds:

Pencil/notepad

Flagging tape

Larger full sized dedicated pack "Go-Bag":

All items from smaller pack + the following

Tool adds:

Quality hatchet – Recommend S.A. Wetterlings, Gransfors Bruk or Husqvarna, or Hults Bruk

2 flashlight one that uses AA and one that uses AAA

Small Mill file – For metal filing

Small hacksaw with extra blade

Shelter adds:

Larger lightweight tarp (recommend tent floor with grommets)

Piece of thick clear 10 mil plastic (at least 12x12)

Water adds:

2 more clear water bags (2-4 liter)

Pump water filter

Food:

Minimum of 2 MRE or similar meal options (recommend at least 3000 calories combined)

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Other Adds:

Full sized first aid kit (recommend Adventure Medical)

10 Chemical Hand-warmers

Leather gloves

Large thick durable bag for carrying additional items– Tip: Buy nylon laundry bag

100 feet of para cord (mil spec)

Knife sharpener

Larger fishing kit (add more hooks, more line, more worms/fake bait options)

10 premade small game snares (purchased or home made)

Raingear – lightweight jacket and rain-pants

Cold weather clothing add (packed in Ziploc or vacuum sealed bags) – extra wool socks, extra long underwear, hat, down vest, etc.)

Power Bank battery pack – For re-charging phone

Other items to consider:

Collapsible .22 LR rifle + at 200 rounds (recommend Stainless Ruger 10/22 takedown)

Fishing net

Frog gig spear tips (with tapered female base)

Breakdown pole spear

Collapsible fishing pole and reel

Solar charger + Re-chargeable batteries

Cold weather addition – Lightweight Down sleeping bag in compression sack

Waterproof bivy sack

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In Vehicle-

2 Flashlights (with extra batteries)

Multi-tool

Knife

Extra weather appropriate clothing

Water -1-2 Gallons

Battery Jumper Pack

Basic siphon pump (for siphoning fuel)

"Go Bag" or smaller dedicated pack

Good first aid-kit – recommend Adventure Medical Mountain Series

In cold weather – wool blanket(s), or sleeping bag

LifeStraw water filter and/or pump water filter

Paper road maps, or map book, of your city and state

Emergency Flares

In Home-

At minimum 5-15 gallons of backup water (Even better, get a dark colored plastic 55 gallon rain water barrel (sunlight should not be able to penetrate sides) and fill it with water from the hose, add 1/8 cup of bleach, seal it up tightly, and store it outside or in garage or shed) – Drain and replace water every 6 months.

10-20 Gallons of backup fuel for your vehicle with fuel stabilizer (if you live in a an area to store it safely – not recommended to store flammable liquids in home or in an attached garage)

Enough food for to feed self/family for 14 days – assume you will not have power for fridge or freezer and plan for that

Non-scented household bleach and eyedropper (for water purification – 8 drops per gallon)

Quality pump water filter

Camping gear for all seasons

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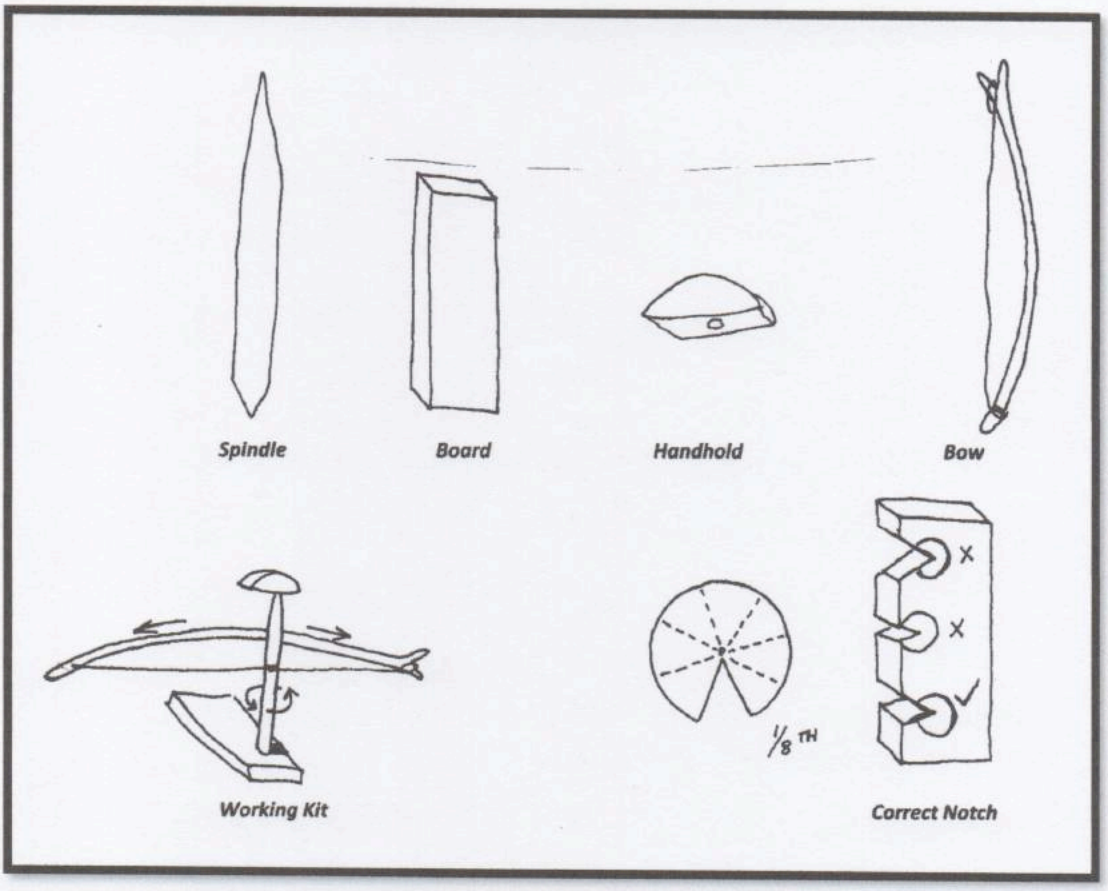
Bowdrill – Friction Fire Handout



Notes:

- Your form is really important
- Remember, stability of the handhold is critical
- Burn in to FULL spindle diameter before cutting notch!
- Lubricate your handhold
- Keep the spindle straight up and down
- Lay your shoulder down onto your knee for added stability
- Lock your wrist into your shin
- Use the whole bow – Long strokes
- Firm/moderate downward pressure
- Slow and steady until your notch is full – then speed up to light coal

Tinder:

- Awesome: Finely shredded inner tree bark, dried grass leaves (not stems), dry moss, very fine wood shavings
- Takes some skill/practice: Grass stems, dry pine needles, charcoal, coarsely shredded inner bark, damp finely shredded inner bark
- Not worth your time: Damp or wet moss, wet inner bark, anything green (alive)

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Aidless Land Navigation and Lost Prevention

General Principals:

- Tell people where are you are headed and when you'll be back (really important in case of injury)
- If lost Don't panic – No matter how extreme the situation sit down and take a few minutes to collect yourself
- Learn to use a compass and bring one along
- Remember you are NOT LOST, you are just disoriented within a larger known space – collect yourself and develop a plan to find your way to familiar territory

Navigation Techniques:

- Awareness is the key component around which all navigation revolves
- Look all around and note interesting and/or unique features on the landscape (do not walk around with your eyes on the ground, or focused on someone else, all the time)
- Note location of orientation sources (i.e. Sun, Wind, Large landmarks etc.) use these landmarks to note direction of travel
- Any time you go into the woods try to start with a big picture view of the landscape (Map reading is valuable but you don't necessarily need a map to understand the big picture)
    - Use available orientation tools to establish a major feature big picture (i.e. ridge running East/West to my North, river to the South)
    - Note, whether you know it or not you most likely already have a big picture in your head already it is just a matter of how much detail you have in the picture
- Note the prominent wind direction (high wind currents not ground currents) use the clouds or birds to determine wind direction.
- In more rugged terrain, south facing slopes are going to get sun North face slopes no sun (more snow on North Slopes, less snow on South Slopes)
- Have a failsafe direction planned out beforehand just in case AND a tool to find that failsafe direction (i.e. compass)

Aidless Land Navigation Tools:

- Song lining (simply a way of creating mental landmarks and expanding awareness – works great)
- Sight lining
- Trailblazing - creating markers, flagging
- Backtracking
- Using the Sun – Sun rises generally East, sets generally West, and is South at mid-day
- Using the Stars and Moon

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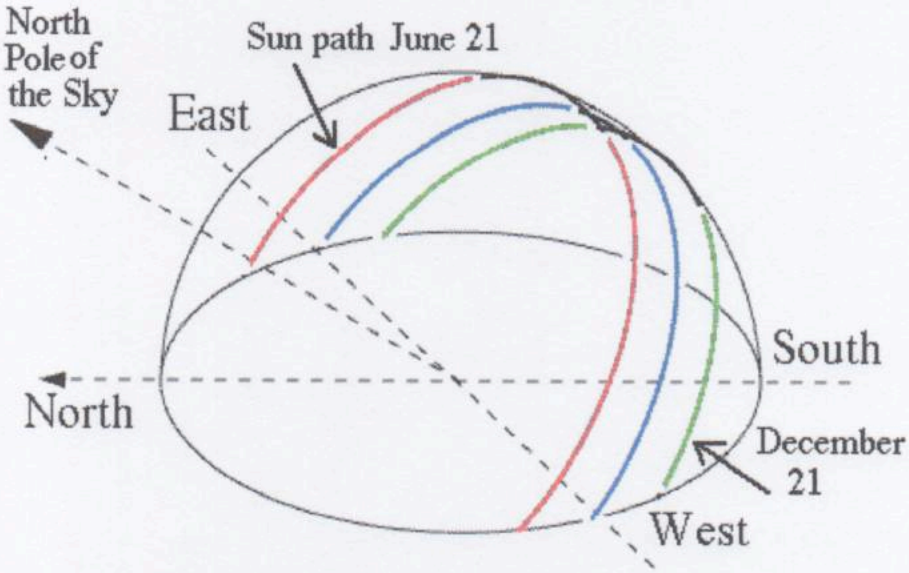

June 21, 2012 (Rise extreme North of East and set extreme North of West)

Sunrise 6:30am

Mid-day 1:30pm

Sunset 8:34pm

Dec 21, 2012 (Rise extreme South of East set extreme South of West)

Sunrise 7:23am

Mid-day 12:30pm
(Change due to DL Savings)

Sunset 5:32am

Equinox (Rise and Set due East and due West)

March 21, 2012 Sunrise 7:34am

Mid-day 1:30pm

Sunset 7:43pm

Sept 22, 2012 Sunrise 7:19am

Mid-day 1:30pm

Sunset 7:28pm

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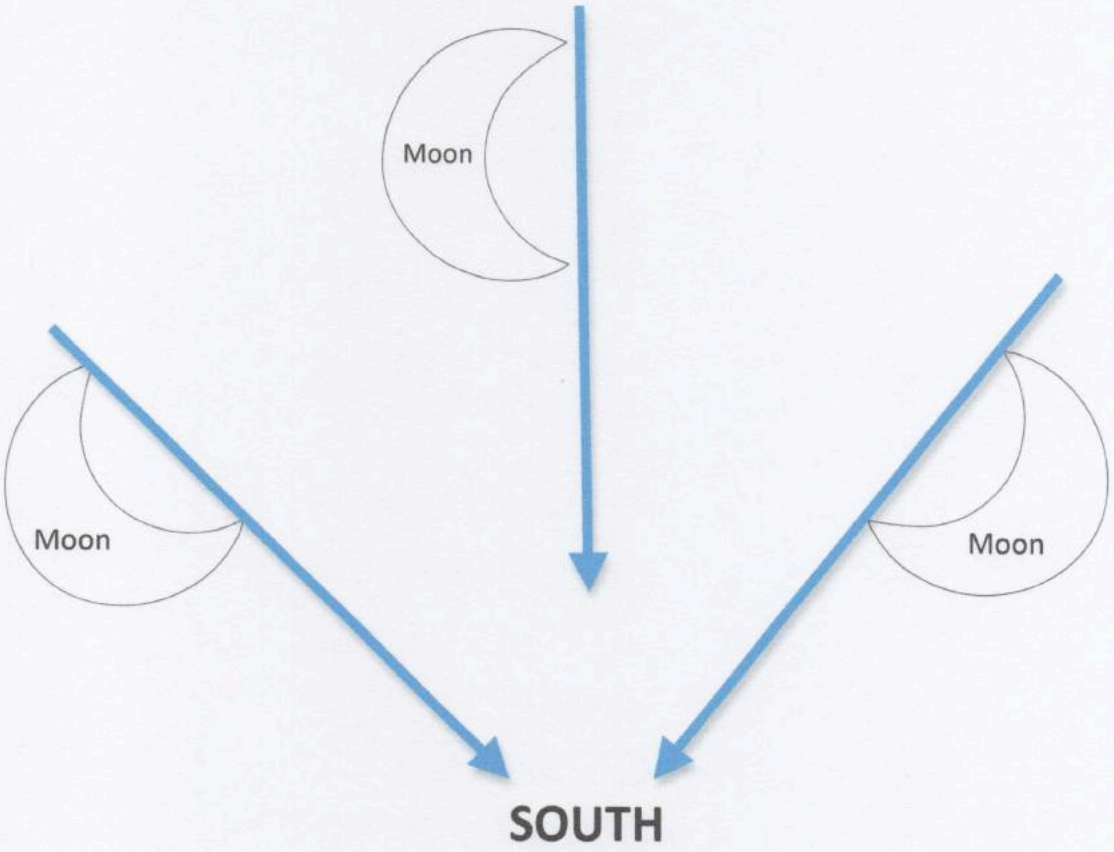

Note: The moon follows the same general path across the sky as the sun rising in the East(ish), in the South at its highest point, and setting in the West(ish). Getting a southerly direction from the moon is relatively simple. Draw a line across the points of the moon down to the horizon and you will find South. A full moon rotates opposite the sun so the full moon will be in the Southern sky at the mid-point between sunrise and sunset. Also note that the moon will inform you where the sun is and if you know where the sun is you can use that to orient yourself to direction/time of night etc.

Star Navigation with **L.U.R.D.-**

Pick a star in the sky and position a Y stick so you are able to track its movement across the sky.

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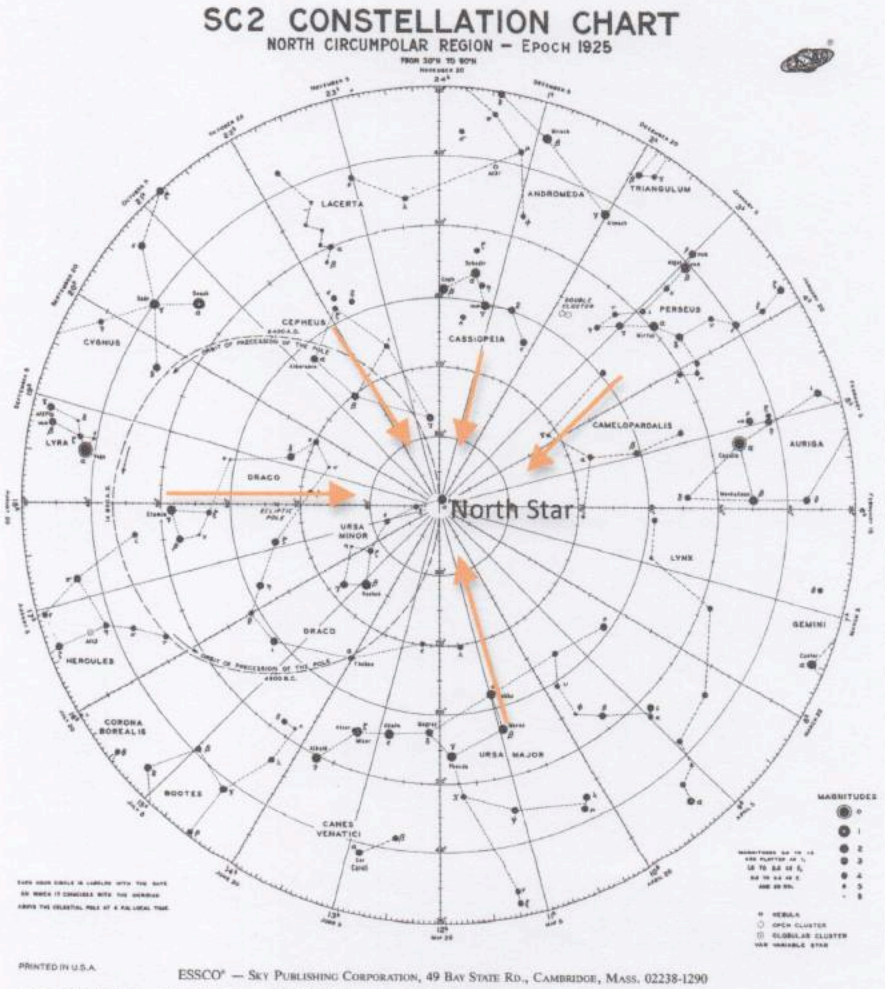
Example =
Star moves UP and RIGHT
you are looking South East

Left → **N**orth

Up → **E**ast

Right → **S**outh

Down → **W**est



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Body Temperature/Shelter Handout

Remember – Building a shelter is *a* solution, but not necessarily *the* solution. Think outside the box!

Body temperature should be your # 1 concern. One of the most dangerous things about unhealthy body temperature levels is that your level of consciousness starts to decrease and you can quickly become unable to think clearly and unable to help yourself.

Temperature transfer –

4 Major ways that heat is transferred from your body

- Conduction – Direct contact (i.e. touching something that is colder or warmer than you are)
- Convection – Air currents moving heat away from your body (i.e. wind)
- Radiation – The idea that heat rises and radiates out from your body
- Evaporation – Cooling is a product of the evaporative process

A good strategy for controlling our body temperature starts by either minimizing, or in the case of hot weather maximizing the transfer of heat from our body. In cold weather environments we want to do everything we can to maintain, or build our warmth. In a hot environment we want to do everything we can to expel our warmth.

Hot weather body temperature regulation strategies:

- Increase conduction by putting your body up against objects that are cooler than you are, i.e. cool sand or soil below the surface of the ground, or a large rock in the shade.
- Increase convection by getting yourself into the breeze, or fanning
- Increase radiation by expelling layers of insulative clothing and getting into cooler areas (shade) where your body heat will radiate more easily

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- Increase evaporation by wetting yourself and cotton clothing (which cools when wet). DRINK WATER! Your body has a natural "wetter" called sweat, but you need to be hydrated!

Remember, the human body is incredible at shedding heat! You are an incredible heat shedding machine. Stay hydrated, in the shade, and out of hot cars and you should be fine.

Cold weather body temperature regulation strategies:

- Conduction- Separate yourself from objects that are colder than you are, i.e. don't lay directly on the ground.
- Convection – Use non-permeable objects or geography to block air currents, i.e. get yourself out of the wind or create wind-blocks.
- Radiation – Find insulation and use it. Any material that is high volume - low mass is a great insulator. Some examples include leaves and forest debris, snow, crumpled paper, moss, etc. Think outside the box!
- Evaporation – Stay dry! Stay out of the rain and monitor your body temperature when doing high-energy activities (like building a shelter). Shed extra layers as needed to reduce the amount that you sweat and to keep clothing dry. Use a fire to dry wet clothing.

Tip – in a pinch you can "scarecrow" yourself to increase insulation. Simply stuff your clothing full of good insulation. This works very well! And is a very good strategy when you do not have time to build an adequate shelter

Shelter building 101 –

A good shelter should address and reduce/solve all of the heat loss issues. It should-

- Separate you from the ground
- Provide adequate insulation above *and below* your body
- Be out of, or block, wind currents
- Shed water well enough to stay dry inside

It is critical that you have ample materials for your envisioned shelter in the immediate vicinity of your chosen shelter location. If adequate materials are not nearby change locations.

Remember – Don't make your situation worse. ALWAYS look for hazards when choosing a shelter location. Hazards can include – flooding, falling trees or branches, signs of dangerous animals in the area etc.

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Take into consideration how the sun moves across the sky in relation to your shelter location and how that is going to affect, ambient temperature, moisture in the air and soil, and dry materials for a fire.

Other things to consider:

- Never build a shelter that requires a fire unless you have a fire or are 100% sure you can get a fire and obtain enough wood to keep it going ALL night
- Consider heating rocks and/or creating coal beds to help supplement body heat (note this is tricky and can be dangerous – **use caution**)
- Be creative!
- Test out shelter designs and become familiar with how challenging it is to build a shelter when you are *NOT* in a survival situation.
- Remember, consider scare-crowing.
- FORGET ABOUT SPIDERS! You have to expand your comfort zone. You are not going to be killed by a spider in the United States. Don't die of hypothermia because you are freaked out about spiders and bugs!
- Short notice survival shelter strategies – Scarecrow, exercise, stay awake, if something isn't working FIX IT, pile up leaves and climb inside, remember miserable is ALIVE.
- Don't be afraid to change your situation or adjust your shelter in the middle of the night if needed.
- NEVER GIVE UP!

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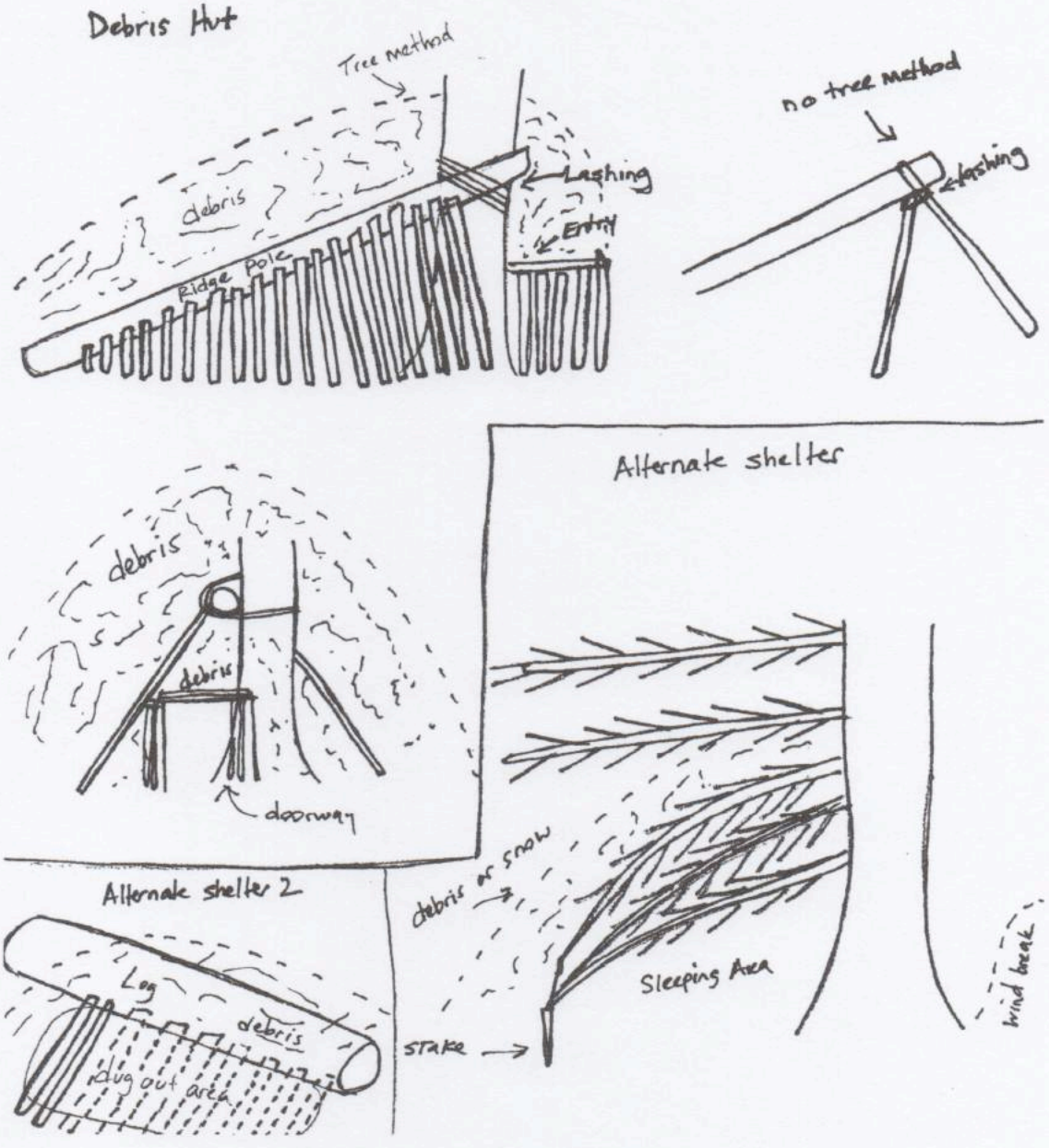
Some potential shelter designs:



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Water – Handout

Where to find water-

- You should always be curious about water, where it flows, and where it hangs out, wherever you are (around your home and away from home)
- Follow drainages to creeks/rivers/ponds/lakes – (Can be a good strategy to find your way out of the wilderness if you are lost – if all else fails)
- Cliff faces can reveal seep springs (common in hill country) – Look for mosses and algae that need water to consistently to differentiate between runoff and seepage. Note: Seep springs often create rock overhangs over thousands of years as freezing water breaks the rock apart
- Look for seep springs in creeks (to find safe(er) water to drink. Identify them by feeling the water temperature (in this area will be much colder than the surface water in the summer – may be warmer in the winter) – Note: try to find places where water is flowing from the ground on a higher plane than the creek water, or where there is buildup of pressure (use example from Cedar Creek).
- Search for places where water table is close to the ground – may look like dry mud holes with aquatic vegetation, dead or alive looking, (often identifiable by indicator species plants like cattail, tule reed, willow trees, river cane, cottonwood trees etc.
- Slot canyons in the desert often hold water for a long time
- Tree hollows can be a good place to find emergency water
- Look for large mammal tracks – if there are large mammals (i.e. deer, pigs, etc.) there will be water relatively nearby. If possible follow tracks/trails to Water

Rainwater Collection –

- If there is ANY chance of rain you need to prepare to collect it
- Plastic is ideal if you have it – tip, dig a hole and line it with a large piece of plastic or trash bag (or two if you are concerned about leakage), then use another sheet of plastic to funnel water into the catchment. Once the bag has filled you can seal off the top of the bag to prevent evaporation. If you make several and want to preserve them longer term you can cover the sealed water bag with dirt until needed
- You can also create small water catchments using larger leaves

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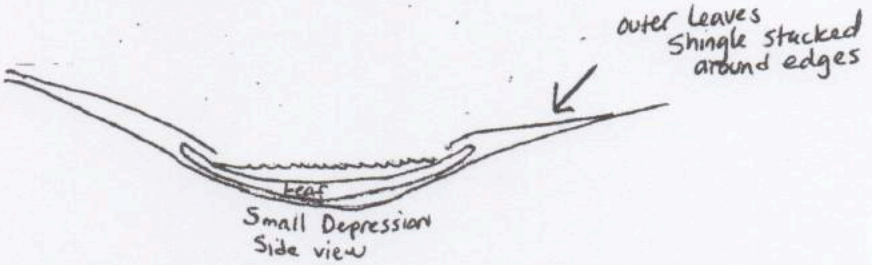
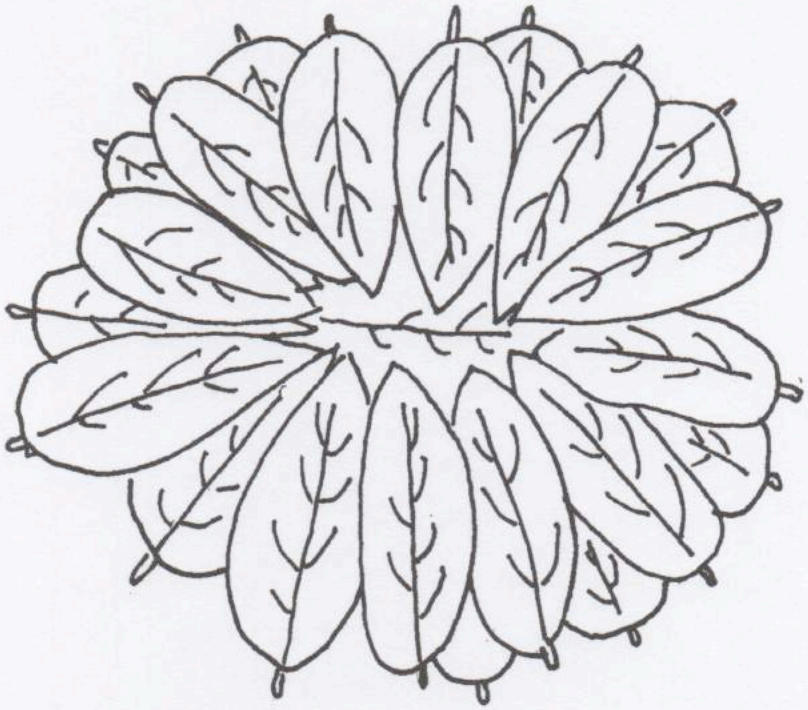
- It is best to use the largest leaves you can find. The smaller the leaves the less water you can catch. The largest leaf (or alternate catchment container) should be placed at the bottom of the depression. Other leaves should be shingled around the outside.
- In heavy or sustained rains with smaller leaves you do not need to shingle the outsides (as it will just overflow), just dig lots of small depressions and line them with a leaf to catch the rain rater
- If the soil is heavy clay you can even just dig a hole and funnel water in. The water will be murky but will most likely be clear of contaminants





using large leaves (diagram below)

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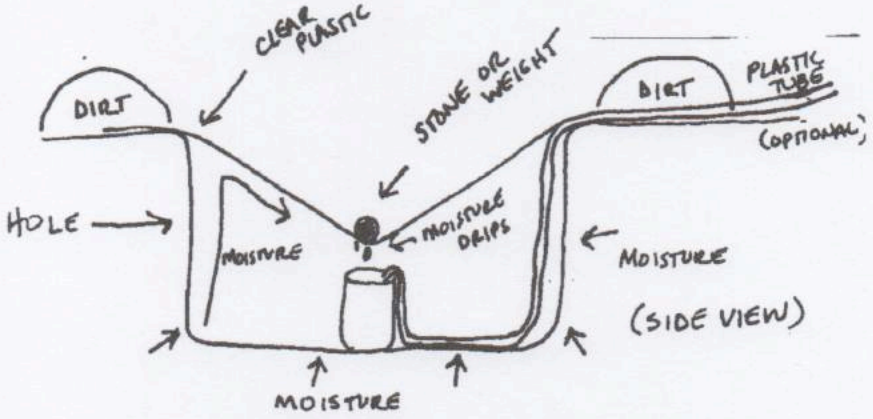
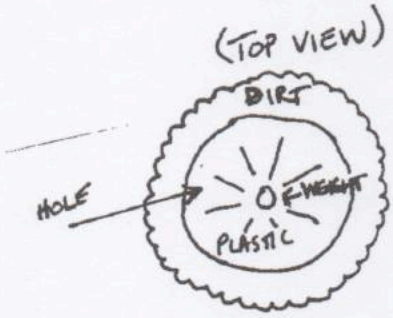
Solar still –

- Solar still can be used to obtain water from the ground through ground moisture evaporation.
- Only way to primitively desalinate water
- Can use this still to purify water through evaporation if you have water

Caution, DO NOT count on this until you have tried it and found success with it in the region and soil type you have experience with. This still is truly HIT or MISS by region/soil type and it can require a lot of energy to create it (and water loss due to sweat).





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Water Filtration vs Purification –

- Water purification is the process of killing any bacteria or viruses in the water. This can be done either through heat (boiling) or through chemical treatment with bleach or iodine or other chemical water treatment.

Tip: Household bleach is an amazing water purification tool. Simply put 8 drops per gallon of water and let it sit for 20 minutes. After sitting the water should have a light chlorine smell. If it does not, re-treat with 8 more drops

- Water filtration is the process of removing contaminates using very fine filters (usually ceramic).

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Cordage

Material Selection-

The part of a plant that is utilized to make cordage is the stringy portion of the plant that is used to transport water and nutrients between the roots and leaves. Though all plants have a mechanism for transportation of water and nutrients only some of these plants have the properties that make good cordage.

In order to make strong cordage, the fibers of a plant have to be lengthy (minimum of 8" is best) and relatively strong. The easiest way to test the strength of plant fibers is to quickly reverse wrap a short section of the fibers and then break the cordage noting how much force was needed.

Note: Many deciduous plants and tree cordage fibers will weaken if they are allowed to decay. However, yucca, agave, sotol, flax, and similar plants have fibers that are very rot resistant. Knowing this to be true, many native tribes actually intentionally allowed plant leaves to rot (a process also called retting) in order to get mass amounts of cordage fiber with little work. The meat of the plant rots much more quickly leaving the clean fibers behind.

Processing Cordage Fibers:

Most plant fibers need to be removed from the leaves or stem in order to be made into cordage. The meaty part of the plant becomes abrasive when it dries and if not removed will cut into the fibers and cause the fibers to break.

Preparation of Yucca, Agave, Flax, cattail and similar plants for cordage:

- Step 1 – Harvest leaves green
  Note: Harvest the leaves on the outside of the plant as these are the ones that will soon die back minimizing damage to the plant
- Step 2 – Scrape off the outer "skin" of the leaf with the back of a knife blade, a sharp stone, or a shell
- Step 3 – Pounding - Use light to moderate force to separate fibers from meat
  Note: Use wood on wood to pound leaves - NOT stone or steel
- Step 4 – Rinse the leaf in water and work it with your hands to remove the "meaty" part of the plant
- Step 5– Separate out the individual fibers and set them aside for drying

Preparation of woody stalked plants like nettle, dogbane, milkweed, wild hemp, bulrushes and similar:

- Step 1 – Harvest green plant at stalk maturity
- Step 2 – Dry the stalks in an area devoid of moisture to prevent rot
- Step 3 – Crack the stalks down the center with a knife

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Cordage

- Step 4 – Flatten the stalks out and carefully remove the "woody" interior of the plant by lightly cracking it and rocking small pieces back and forth until they come off
- Step 5 – Rough up the exterior "skin" of the plant lightly between your hands to remove any extra chaff

Preparation of inner bark:

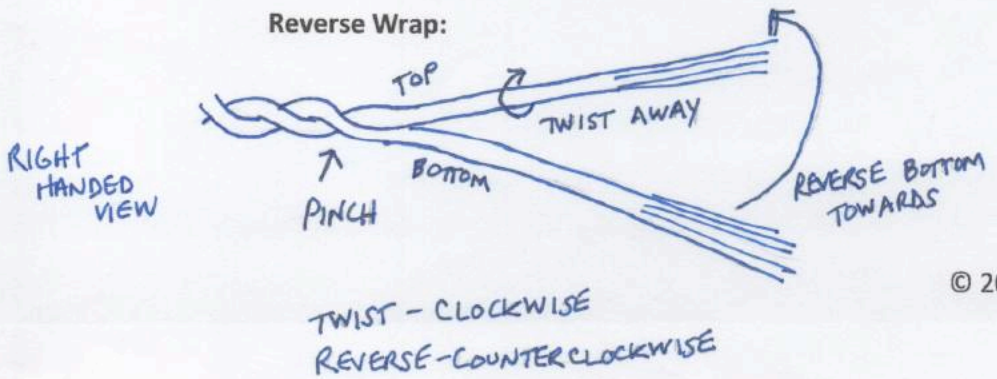
- Step 1 – Harvest inner bark when it is green
  Note: It is much easier to harvest the bark of a tree in the spring when the sap is flowing
- Step 2 – Soak the bark until it softens
- Step 3 – Separate the inner and outer bark and pull the inner bark into strips about 1-2 inches wide
- Step 4 – Pound the inner bark strips until the fibers begin to separate and the strips become soft
- Step 5 – Split the large soft bark strips down further into individual strands and allow them to dry

Other types of cordage:

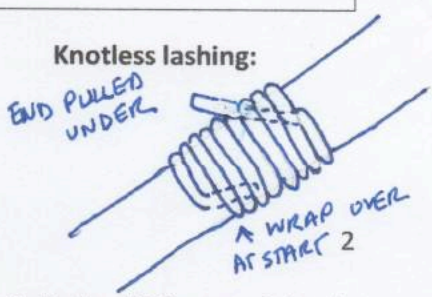
- Hides and Tendons - Good cordage can be made from animal skins and tendons. For hides simply cut the raw skin into strips and allow them to dry. For tendon (sinew) there is a specific process of pounding and stripping that is labor intensive. The final result is incredibly strong but also very susceptible to moisture.
- Roots and Vines – Some roots and vines can create really strong quick lashings. Experiment with the vines in your area. Use them as lashings (without tying knots) to see what holds up and what doesn't. You can use the "over wrap" lashing shown below to tie without knots

Note: Strong cordage can only be made from dry fibers. It is possible to make quick cordage from green live plants; however, when the plant dries the cordage will shrink and become brittle. With that being said, you don't always need quality cordage to get the job done. Weigh strength and longevity of your cordage needs with preparation and time. Example, if you just need a quick shelter lashing it would probably be better to use a vine or something similar rather than spending hours rolling the most beautiful cordage.

Reverse Wrap:



Knotless lashing:



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