

- You can survive for 3 Minutes without air (oxygen) or in icy water
- You can survive for 3 Hours without shelter in a harsh environment (unless in icy water)

- You can survive for 3 Days without water (if sheltered from a harsh environment)
- You can survive for 3 Weeks without food (if you have water and shelter)

Edible & Poisonous Wild Plants

Here are some guidelines for eating wild plant life. In most situations, if you don't know what a plant is, don't eat it. You can live 3 weeks or more without food. You can live a lot less long with poison in your system. Only eat wild plants if you have devoted a good deal of time to studying them.

- Do not eat mushrooms or fungi unless you know for certain that it is edible. Most are poisonous, and there is no way of determining which ones are edible without properly identifying the species.
- Plants with umbrella-shaped flowers should not be eaten.
- Avoid legumes (beans and peas).
- Bulbs should generally be avoided. Wild garlic and onions smell distinctively like garlic and onions.
- Lichen
- Avoid white and yellow berries, as most of them are poisonous. Blue and black berries are usually safe to eat.
- The "berry rule" is that 10% of white and yellow berries are edible; 50% of red berries are edible; 90% of blue, black, or purple berries are edible, and 99% of aggregated berries are edible. This is only a guideline, and unknown berries shouldn't be eaten.
- Aggregated fruits and berries are almost always edible (blackberry, raspberry, salmon berry, and thimble berry).
- Single fruits on a stem are usually considered safe to eat
- Plants with shiny leaves or a milky sap are considered to be poisonous.
- The two that don't follow this rule are Dandelion and Fig. (Both have milky sap.)
- It is a myth that if an animal eats something, then it is safe. For instance, deer will eat poison ivy.
- Wild nuts that taste or smell like almonds are EXTREMELY dangerous. They contain hydrogen cyanide.

Wild fruits and berries can be checked for edibility in the following way:

- Put a small amount of juice on your forearm and wait until it dries. If there is no burning, swelling or redness go to the next step.
- Put a small amount of juice on the corner of your mouth and wait until it dries. If there is no burning or stinging go to the next step.
- Put a small amount of juice on your tongue. If there is no burning or stinging go to the next step.
- Eat a very small amount. (If you immediately feel sick or vomit, stop eating!) If no symptoms occur in 24 hours, the item **MOST LIKELY** is not poisonous.
- Eat sparingly at first, and if symptoms still do not occur, proceed to eat as much as you like.

NOTE: This technique can be very dangerous. Many plants (Agave, to name one example) contain compounds that won't burn or tingle, but can be powerful emetics and/or laxatives. Others may be safe in small quantities, but can be dangerous when large amounts are eaten. Your best bet is to familiarize yourself with a few common plants for your area that can be eaten, and not rely on potentially dangerous methods such as the one listed above. **Source:** https://en.wikipedia.org/wiki/Outdoor_Survival_Food

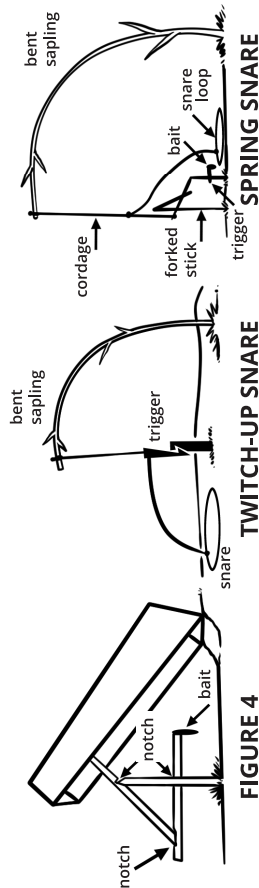


FIGURE 4

WATER

Finding Other Water Sources in an Emergency
DO NOT DRINK water that has an unusual odor or color, or that you suspect might be contaminated with fuel or toxic chemicals. This water cannot be made safe, so you must find a different source of water for your needs.

NOTE: DO NOT USE water that has been contaminated by fuel or toxic chemicals.

The following are possible sources of water:

- Inside the Home:**
 - Water from your home's water heater tank
 - Melted ice cubes made with water that was not contaminated
 - Water from your home's toilet tank (not from the bowl; has not been chemically treated)
 - Liquid from canned fruit and vegetables
 - Water from swimming pools and spas can be used for personal hygiene, cleaning, and related uses, but not for drinking.

Outside the Home:

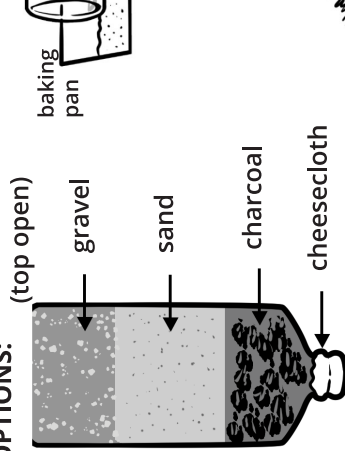
- Flood waters can contaminate well water and rivers, streams, and lakes with livestock waste, human sewage, chemicals, and other contaminants which can lead to illness when used for drinking, bathing, and other hygiene activities.

Water from sources outside the home must be treated because it could be contaminated with livestock waste or human sewage. If you suspect or know the water is contaminated with toxic chemicals or fuels, it cannot be made safe and you should not drink or bathe in this water.

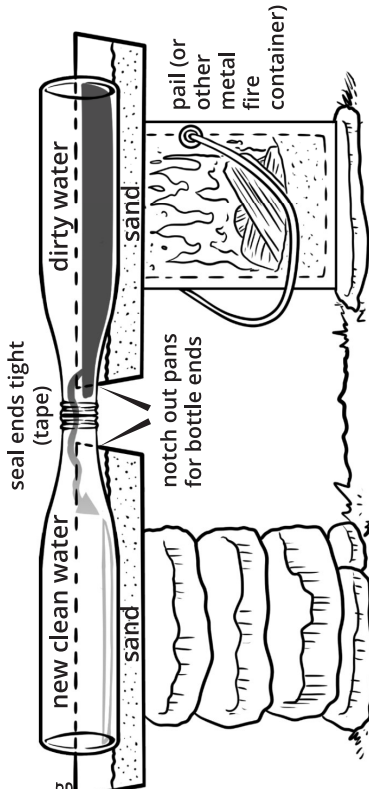
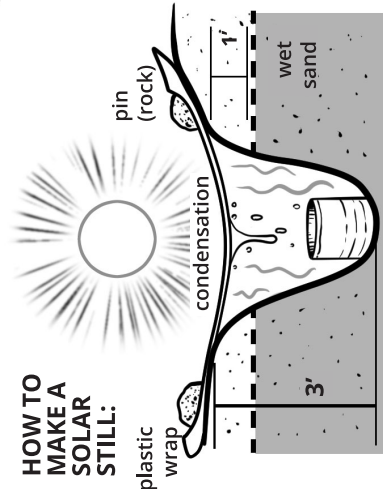
How to Make Homemade Chlorine Bleach out of Calcium Hypochlorite (aka "Pool Shock"): Mix 2 level Tablespoons of Calcium Hypochlorite to 3 cups of water. Follow instructions for 6% bleach in section "How to disinfect water using household bleach" **Source:** CDC Centers for Disease Control and Prevention

How to access Industrial Building Water faucets: Use a 4-way Silcock Key to access the handle-less water faucet outside of commercial buildings.

FILTER OPTIONS:



HOW TO MAKE A SOLAR STILL:



Disinfect water using household bleach

Volume of Water	Amount of 6% Bleach to Add	Amount of 8.25% Bleach to Add
1 quart/liter	2 drops	2 drops
1 gallon	8 drops	6 drops
2 gallons	16 drops (1/4 tsp)	12 drops (1/8 tsp)
4 gallons	1/3 tsp (32 drops)	1/4 tsp (24 drops)
8 gallons	2/3 tsp (64 drops)	1/2 tsp (48 drops)
10 gallons	1.25 tsp (80 drops)	0.6 tsp (60 drops)
55 gallons	6.9 tsp (440 drops)	3.4 tsp (330 drops)

NOTE: Let sit for 30 minutes. If water still cloudy, repeat process.

Source: US EPA "Emergency Disinfection of Drinking Water"

CPR Instructions Before Giving CPR

1. Check the scene and the person. Make sure the scene is safe, then tap the person on the shoulder and shout "Are you OK?" to ensure that the person needs help.
2. Call 911 for assistance (NOTE: if phone lines are still available in emergency). If it's evident that the person needs help, call (or ask a bystander to call) 911, then send someone to get an AED. (If an AED is unavailable, or a there is no bystander to access it, stay with the victim, call 911 and begin administering assistance.)
3. Open the airway. With the person lying on his or her back, tilt the head back slightly to lift the chin.
4. Check for breathing. Listen carefully, for no more than 10 seconds, for sounds of breathing. (Occasional gasping sounds do not equate to breathing.) If there is no breathing begin CPR.

CPR Steps

1. Push hard, push fast. Place your hands, one on top of the other, in the middle of the chest. Use your body weight to help you administer compressions that are at least 2 inches deep and delivered at a rate of at least 100 compressions per minute.
2. Deliver rescue breaths. With the person's head tilted back slightly and the chin lifted, pinch the nose shut and place your mouth over the person's mouth to make a complete seal. Blow into the person's mouth to make the chest rise. Deliver two rescue breaths, then continue compressions.

Note: If the chest does not rise with the initial rescue breath, re-tilt the head before delivering the second breath. If the chest doesn't rise with the second breath, the person may be choking. After each subsequent set of 30 chest compressions, and before attempting breaths, look for an object and, if seen, remove it.

3. Continue CPR steps. Keep performing cycles of chest compressions and breathing until the person exhibits signs of life, such as breathing, an AED becomes available, or EMS or a trained medical responder arrives on scene.

Note: If you are alone ONLY compressions. Deliver breaths only if 2 rescuers are available.

Source: <https://www.redcross.org/take-a-class/cpr/performing-cpr/cpr-steps>

Basic First Aid Procedures

Bleeding:

Cover the wound with a gauze or a cloth and apply direct pressure to stop the blood flow. Don't remove the cloth. Add more layers if needed. The cloth will help clots form to stop the flow.

Apply a tourniquet as quickly as possible if life-threatening bleeding is present.

Burns:

Flush the burned area with cool running water for several minutes. Do not use ice. Apply a light gauze bandage. Do not apply ointments, butter, or oily remedies to the burn. The Natural Medicines Comprehensive Database lists Manuka Honey as being "possibly effective" to treat burns and wounds.

Take ibuprofen or acetaminophen for pain relief if necessary. Do not break any blisters that may have formed.

Fractures:

Don't try to straighten it. Stabilize the limb using a splint and padding to keep it immobile. Put a cold pack on the injury, avoiding placing ice directly on the skin. Elevate the extremity. Give anti-inflammatory drugs like ibuprofen or naproxen.

Sprains:

The symptoms of a sprain are almost exactly the same as that of a broken bone. When in doubt, first aid for sprains should be the same as broken bones. Immobilize the limb, apply a cold pack, elevate it, and take anti-inflammatory drugs.

Frostbite:

Treating frostbite is a delicate procedure of gradual warming. First, get out of the cold. Small areas of minor frostbite may be rewarmed by skin-to-skin contact, but avoid using any heat sources or hot packs.

If you can't make it to a medical facility, use immersion of the affected area in warm water (98 to 105 F) for 20 to 30 minutes to rewarm it. Do not rub the affected area or use heat sources.

Source: <https://www.verywellhealth.com/basic-first-aid-procedures-1298578>

Blisters:

Whether or not a blister needs any treatment is debatable. If the blister is small, unbroken and not very painful, it is probably best to leave it alone. Cover it to prevent continued rubbing and pressure on it that can cause it to swell more and possibly burst on its own. If the blister is large or painful – especially if the activity isn't finished (such as you are in the middle of a hike) – follow steps to drain and dress a blister. Use a sterilized needle and make small punctures at the edge of the blister and express the fluid. Then apply antibiotic ointment and cover it to protect it from further rubbing and pressure.

Top 5 Antibiotics for SHTF:

- Zithromax**- UTIs, URIs, Sepsis (used in an IV). STDs, and ear infections. infections, STDs, Sepsis and ear infections.
- Ampicillin**- This is a more broad spectrum antibiotic that treats skin sparingly. Can be used for UTIs, infectious diarrhea, bone and joint infections.
- Amoxicillin**- This is a very popular antibiotic used in upper respiratory, ear, nose and throat infections, and teeth abscesses.
- Doxycycline**- An effective antibiotic used for malaria, and Rocky Mountain Spotted Fever.

30 Medicinal Plants For Survival:

- Althea**- Skin irritations, ulcers and sore throats.
- American Ginseng**- Treat respiratory disorders and reduce fevers (tea).
- Barberry**- Treat skin conditions and diarrhea.
- Belladonna**- Sleep aid but be extremely careful; too much will kill.
- Billberry**- Ease diabetes pain, and to treat kidney disease and eye conditions. Eat the berries.
- Borage**- Helps with arthritis, joint pain and skin conditions such as eczema.
- Catnip**- Treats cold symptoms, swelling and fever. It also helps stop bleeding when applied topically and soothes gas, migraines and stomach aches when infused.
- Cayenne**- Pepper Can help prevent heart attacks and heal ulcers and hemorrhoids.
- Cranesbill**- Helps stop bleeding and diarrhea and is also good for canker sores.
- Echinacea**- Treats colds and the flu.
- Fo-Ti**- Treats high cholesterol, erectile dysfunction, constipation and fatigue.
- Ginger**- Migraines, nausea, motion sickness and circulation, including blood clots. Eat it or make it into a tea.
- Goldenseal**- Treat bladder and fungal infections as well as sinus congestion. Use it in teas.
- Lady Fern**- Eases the pain of minor cuts, burns and stings.
- Licorice Root**- Treats sore throats, ulcers and respiratory issues such as bronchitis.
- Marijuana**- Treats glaucoma, depression, anxiety, high blood pressure and nausea.



ALTHEA



BORAGE



CATNIP



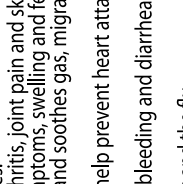
CAYENNE



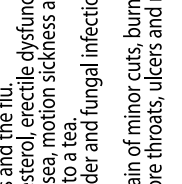
CRANESBILL



ECHINACEA



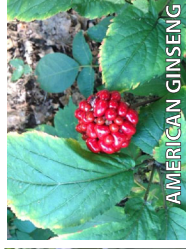
FO-TI



GINGER



GOLDENSEAL



AMERICAN GINSENG



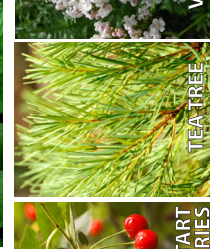
BARBERRY



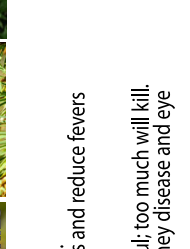
BELLADONNA



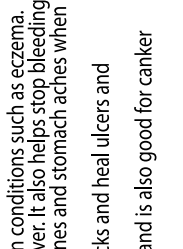
BILLBERRY



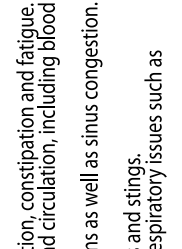
BORAGE



CATNIP



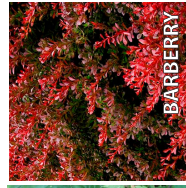
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CRANESBILL



ECHINACEA



FO-TI



GINGER



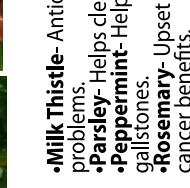
GOLDENSEAL



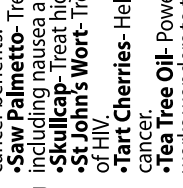
LICORICE ROOT



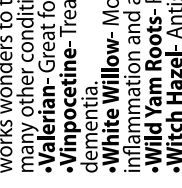
LADY FERN



MARIJUANA



MILK THISTLE



ST. JOHN'S WORT



SKULLCAP



SAW PALMETTO



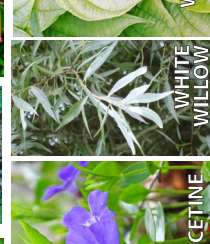
ROSEMARY



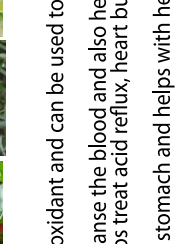
TART CHERRIES



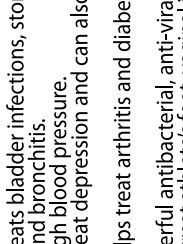
TEA TREE



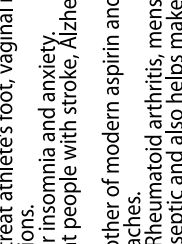
VALERIAN



VINPOCETINE



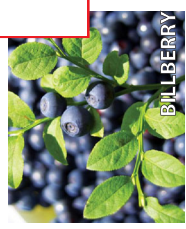
WHITE WILLOW



WITCH HAZEL



WILD YAM



BELLADONNA



CRANESBILL



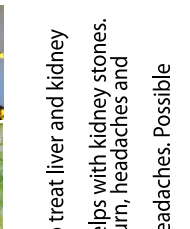
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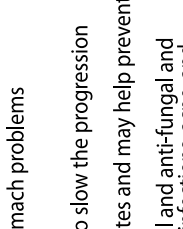
FO-TI



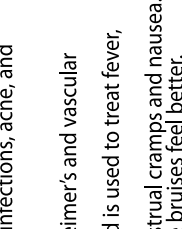
GINGER



GOLDENSEAL



LICORICE ROOT

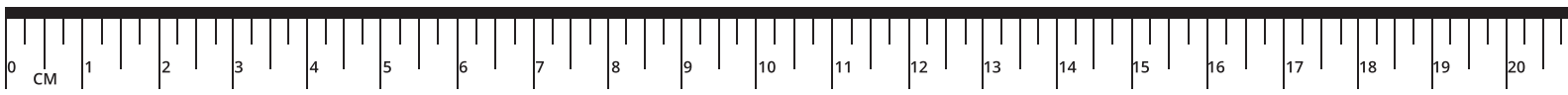


LADY FERN



MARIJUANA

- Milk Thistle**- Antioxidant and can be used to treat liver and kidney problems.
- Parsley**- Helps cleanse the blood and also helps with kidney stones.
- Peppermint**- Helps treat acid reflux, heart burn, headaches and gallstones.
- Rosemary**- Upset stomach and helps with headaches. Possible cancer benefits.
- Saw Palmetto**- Treats bladder infections, stomach problems including nausea and bronchitis.
- Skullcap**- Treat high blood pressure.
- St John's Wort**- Treat depression and can also slow the progression of HIV.
- Tart Cherries**- Helps treat arthritis and diabetes and may help prevent cancer.
- Tea Tree Oil**- Powerful antibacterial, anti-viral and anti-fungal and works wonders to treat athlete's foot, vaginal infections, acne, and many other conditions.
- Valerian**- Great for insomnia and anxiety.
- Vincetoxicum**- Treat people with stroke, Alzheimer's and vascular dementia.
- White Willow**- Mother of modern aspirin and is used to treat fever, inflammation and aches.
- Wild Yam Roots**- Rheumatoid arthritis, menstrual cramps and nausea.
- Witch Hazel**- Antiseptic and also helps make bruises feel better. Also used to treat IBS and other bowel issues.



Hand Drill

Two-Man Friction Drill

Fire Plough

Pump Fire Drill

push down with hand; let up to spin back; repeat

Bow Drill

FIRE

How to Pick a Lock:

The first thing we have to do is locate the binding pin. Insert your tension wrench and give it the necessary pressure to bind the first binding pin. You will need to keep tension on the plug during the entire process of picking the lock. Next, insert your pick into the top of the lock and, starting from either the front or back, begin to cautiously probe each pin by lifting it up slightly. As you push each pin up, gauge how difficult it is to move. Most of the pins will be relatively easy to lift with the exception of the binding pin. This pin will feel stiff and if you were to release the tension on the plug it would once again feel like the rest of the pins. Once we have found the first binding pin we need to raise it above the shear line. While continuing to apply light pressure on the plug it would once again feel like the rest of the pins. Once we have found the first binding pin we need to raise it above the shear line. When the pin reaches the shear line there will be a very slight give in the turning of the plug. You may also feel a slight click/vibrate through your tension wrench. These both are very good indicators that you have successfully "picked" the pin, or what lock pickers refer to as "setting a pin." If you were to at this point release tension on the plug, you would hear the pin fall back into place. Note here that you have only lifted the driver pin out of the plug and not the key pin so don't be alarmed when you still feel it wobbling around inside the plug. As a result of setting the first binding pin from interfering with the plug, we have removed the first binding pin from the center-line. This becomes our new binding pin and our next target. Just like with the first pin, you will need to probe the remaining pins to find the new binding pin. Once found, slowly lift it up past the shear line until you again feel the click and give of the plug and it turns ever so slightly. As we continue to apply pressure on the tension wrench, repeat the same steps of locating the new binding pin and setting it. Once all the pins are set, the plug will give and allow us to fully rotate it as if we had a key.

Source: <https://art-of-lockpicking.com/how-to-pick-a-lock-guide/>

BOWLINE

Mnemonic: "The rabbit comes out of the hole, around the tree and back down the hole."

TAUTLINE

SHEEPSHANK

ROLLING HITCH

WATER KNOT

SQUARE KNOT

TRUCKER'S HITCH (tie down loads)

CLOVE HITCH

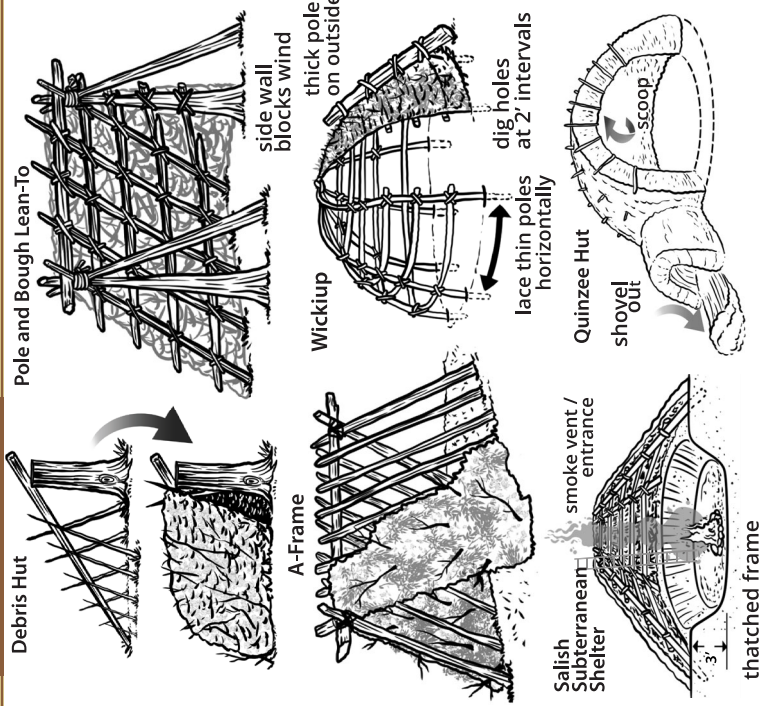
PRUSIK KNOT

(adds a loop to a secure line)

Rope can be no more than 1/2 the diameter of the main line.

DOUBLE SHEETBEND

TOOLS & TACTICAL



Inspirational Quotes

"Life has two rules: #1 Never quit #2 Always remember rule #1" - Unknown

"It's not whether you get knocked down, it's whether you get up." - Vince Lombardi

"If you're going through hell, keep going." - Winston Churchill

"Do not let what you cannot do interfere with what you can do." - John Wooden

"The journey of a thousand miles begins with one step." - Lao Tzu

"It does not matter how slowly you go so long as you do not stop." - Confucius

"Tough times never last, but tough people do." - Robert H Schuller

"What lies behind you and what lies in front of you, pales in comparison to what lies inside of you." - Ralph Waldo Emerson

"The difference between stumbling blocks and stepping stones is how you use them." - Unknown

"I ask not for a lighter burden, but for broader shoulders." - Jewish Proverb

"The bravest sight in the world is to see a great man struggling against adversity." - Seneca

"Fall seven times, stand up eight." - Japanese proverb

"Problems are not stop signs, they are guidelines." - Robert Schuller

"We must embrace pain and burn it as fuel for our journey." - Kenji Miyazawa

"Adversity is a fact of life. It can't be controlled. What we can control is how we react to it." - Unknown

"The true test of a person character is how they stand during test of adversity" - Unknown

"The gem cannot be polished without friction, nor man perfected without trials." - Chinese proverb

Using the Stars: Equator

The Orion Constellation is visible from both hemispheres depending on the time of the year. It is a permanent feature on the equator. Look for Orion's Belt. Orion has several prominent stars. The 'belt' (3 stars in a row) runs from East to West. Look for that, it has a 'sword' attached to it. Project a line from the sword through the middle star of the Belt. That is the general direction of North. Orion lays across the Equator: the Belt rises & sets at East & West.

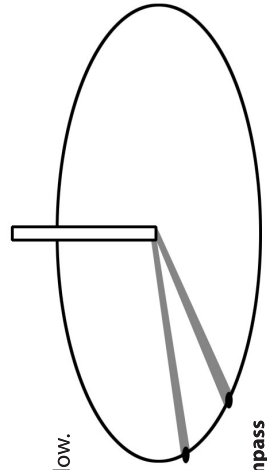


How to Find True North Without a Compass

How to make a The Shadow-Tip Sundial:

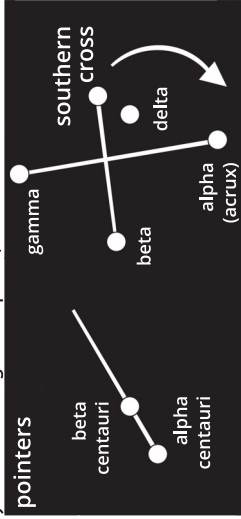
- Place a stick upright in the ground so that you can see its shadow.
- Mark the tip of the shadow with a small object, such as a pebble, or a distinct scratch in the ground.
- Wait 10-15 minutes.
- Mark the new position of the shadow's tip with another small object or scratch.
- Draw a straight line in the ground between the two marks.
- Stand with the first mark (west) on your left, and the other (east) on your right.

Source: <https://www.wikihow.com/Find-True-North-Without-a-Compass>



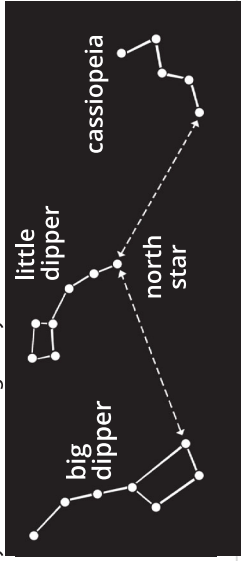
Using the Stars: Southern Hemisphere

Find the Southern Cross constellation. In the southern hemisphere, the North Star is not visible, and no single star always indicates north or south, but you can use the Southern Cross and the pointer stars as your guide. The Southern Cross constellation is formed by five stars, and the four brightest stars form a cross that is angled to one side. Identify the two stars that make up the long axis of the cross. These stars form a line which "points" to an imaginary point in the sky which is above the South Pole. Follow the imaginary line down from the two stars five times the distance between them. Draw an imaginary line from this point to the ground, and try to identify a corresponding landmark to steer by. Since this is true south, true north is directly opposite it (behind you as you are looking at the point).



Using the Stars: Northern Hemisphere

Locate the North Star (Polaris) in the night sky. The North Star is the last star in the handle of the Little Dipper constellation. If you have trouble finding it, find the Big Dipper. The two lowest stars in the Big Dipper (the outermost stars of the cup of the dipper) form a straight line that "points" to the North Star. You may also find the constellation Cassiopeia, which is always opposite the Big Dipper. The North Star is located about midway between the central star of Cassiopeia and the Big Dipper (see figure). Draw an imaginary line straight down from the North Star to the ground. This direction is true north, and if you can find a landmark in the distance at this point, you can use it to guide yourself.



Weight Conversion Table

	gram (g, gm)	kilogram (kg)	pound (lb)	ounce (oz)	carat	short ton (US)	long ton (UK)	tonne (metric ton)	grain (gr)
1 gram (g, gm)	1	0.001	0.0022	0.035	5	0.000001	0.000001	0.000001	15
1 Kilogram (kg)	1000	1	2.2	35	5000	0.001	0.001	0.001	15432
1 pound (lb)	454	0.46	1	16	2268	0.000500	0.0005	0.0005	7000
1 ounce (oz)	28	0.03	0.063	1	142	0.000031	0.00003	0.00003	438
1 carat	0.2	0.0002	0.0004	0.007	1	0	0	0	3
1 short ton (US)	907185	907	2000	32000	4535924	1	0.9	0.9	14000000
1 long ton (UK)	1016047	1016	2240	35840	5080235	1.12	1	1	15680000
1 tonne (metric ton)	1000000	1000	2205	35274	5000000	1.1	1	1	15432358
1 grain (gr)	0.065	0.000065	0.0001	0.0023	0.324	0	0	0	1

Ground-Air Visual Guide

	I	need food and water	F
need doctor	II	need map and compass	A
need medical supplies	III	need signal lamp w/ battery & radio	I
need evacuation	X	indicate direction to proceed	K
unable to proceed	N	am proceeding in this direction	I
no	Y	probably safe to land here	Δ
yes	L	require fuel and oil	L
not understood	SOS	all well	LL
if in doubt use			

NATO phonetic alphabet

CHARACTER	MORSECODE	TELEPHONY	PHONIC(PRONUNCIATION)	CHARACTER	MORSECODE	TELEPHONY	PHONIC(PRONUNCIATION)
A	.-	Alfa	(AL-FAH)	S	...-	Sierra	(SEE-AIR-RAH)
B	-...-	Bravo	(BRAH-VOH)	T	-	Tango	(TANG-GO)
C	-.-.-	Charlie	(CHAR-LEE)	U	...-	Uniform	(YOU-NEE-FORM)
D	-..	Delta	(DELL-TAH)	V	...-	Victor	(VIK-TAH)
E	.-	Echo	(ECK-OH)	W	...-	Whiskey	(WISS-KEY)
F	..--	Foxtrot	(FOKS-TROT)	X	...-	Xray	(ECKS-RAY)
G	...-	Golf	(GOLF)	Y	...-	Yankee	(YANG-KEY)
H		Hotel	(HOH-TEL)	Z	...-	Zulu	(ZOO-LOO)
I	..	India	(IN-DEE-AH)	1	...--	One	(WUN)
J	..---	Juliett	(JEW-LEE-TT)	2	...--	Two	(TWO)
K	-.-	Kilo	(KEY-LOH)	3	...--	Three	(TREE)
L	.-.-	Lima	(LEE-MAH)	4	...--	Four	(FOW-ER)
M	---	Mike	(MIKE)	5		Five	(FIFE)
N	--	November	(NO-VEH-BER)	6		Six	(SIX)
O	---	Oscar	(OSS-CAH)	7	...--	Seven	(SEV-EN)
P	...-	Papa	(PAH-PAH)	8	...--	Eight	(AIT)
Q	...-	Quebec	(KEH-BECK)	9	...--	Nine	(NIN-ER)
R	...-	Romeo	(ROW-ME-OH)	0	...--	Zero	(ZEE-RO)

Morse Code Abbreviations

ABB	MEANING	ABB	MEANING	ABB	MEANING	ABB	MEANING
AA	All after (used after question mark to request a repetition)	BURO	PLS QSL VIA BURO	CW	Continuous wave (i.e., radiotelegraph)	GE	Good evening
AB	All before (similarly)	B4	Before	CX	Conditions	GG	Going
ARRL	American Radio Relay League	C	Yes; correct	DE	From ("this is")	GL	Good luck
ABT	About	CBA	Callbook address	DN	Down	GM	Good morning
ADR	Address	CFM	Confirm	DR	Dear	GN	Good night
AGN	Again	CK	Check	DSW	Goodbye (Russian-Dasvidanya)	GND	Ground (ground potential)
AMR	Another	CL	Clear (I am closing my station)	DX	Distance (long distance contact), foreign countries	GUD	Good
ANT	Antenna	CLG	Calling	EMRG	Emergency	GX	Ground
ARND	Around	CONDX	Conditions	ENUF	Enough	HEE	laughter, repeated twice i.e. HEE HEE
AS	Wait	COS	Because	ERE	Here (more commonly; HR)	HI	Humor intended or laughter
BCI	Broadcast interference	CQ	Calling (all stations, any station)	ES	And	HR	Here, hear
BCNU	Be seeing you	COD	All Stations Distress (Before SOS)	FB	Fine business (Analogous to "good")	HV	Have
BK	Break (to pause transmission of a message, say)	CS	Callign	FER	For	HW	How (Also: "Here waiting" at end of transmission)
BN	All between	CTL	Control	FM	From	II	I say again
BTR	Better	CUD	Could	FREQ	Frequency	IMP	Impedance
BTU	Back to you	CUL	See you later	FWD	Forward	K	Over
BUG	Semiautomatic mechanical key	CUZ	Because	GA	Good afternoon or Go ahead	KN	Over; only the station named should respond

Military 10 Codes

CODE	MEANING	CODE	MEANING	CODE	MEANING	CODE	MEANING
10-0	Caution	10-33	Emergency	10-66	Message cancellation	10-7	Out of service
10-1	Unable to copy -- change location	10-34	Riot	10-67	Clear for net message	10-8	In service
10-2	Signal good	10-35	Major crime alert	10-68	Dispatch information	10-9	Repeat
10-3	Stop transmitting	10-36	Correct time	10-69	Message received	10-10	Fight in progress
10-4	Acknowledgement (OK)	10-37	Suspicious vehicle	10-70	Fire	10-11	Dog case
10-5	Relay -- Busy -- stand by unless urgent	10-38	Stopping suspicious vehicle	10-71	Advise nature of fire	10-12	Stand by (stop) -- road report
10-6	Urgent	10-39	Urgent -- use light, siren	10-72	Report progress on fire	10-13	Weather report

ABB	MEANING	ABB	MEANING	ABB	MEANING	ABB	MEANING
OTC	Old timers club (amateurs first licensed 20+ yrs)	SASE	Self-addressed, stamped envelope	TEMP	Temperature	VY	Very
DOTC	Old old timers club (two-way radio users 40+ yrs; not OTC and ARRL)	SED	Said	TFC	Traffic	W	Watts
PLS	Please	SEZ	Says	TKS	Thanks	WA	Word after
PSE	Please	SFR	So far (proword)	TMW	Tomorrow	WB	Word before
PWR	Power	SIG	Signal or signature	TNX	Thanks	WC	Wilco
PX	Prefix	SIGS	Signals	TRE	There	WDS	Words
QW	Quarter Cent. Wireless Assoc. (radio amateurs of 25+ yrs)	SK	Out (prosign), end of contact	TT	That	WID	With
R	Receivd ("Roger") or decimal pt	SK	Silent key (a deceased radio amateur)	TU	Thank you	WKD	Worked
RCVR	Receiver	SKED	Schedule	TVI	Television interference	WKG	Working
RFI	Radio-frequency interference	SN	Soon	TX	Transmitter	WL	Will
RIG	Radio apparatus	SN	ahem (throat clearing before transmission)	TXRX	Transceiver, transmitter + receiver	WUD	Would
RPT	Repeat or report (depending on context)	SN	"understood" (German - "verstanden")	TXT	Text	WTC	What's the craic? (Irish: [Conas ata tu?])
RPRT	Report	SNR	Signal-to-noise ratio	U	You	WX	Weather
RST	Signal report (Readability-Signal Strength-Tone)	SRI	Sorry	UFB	Ultra Fine business ("very good")	XCVR	Transceiver
RTTY	Radioteletype	SSB	Single sideband	UR	Your or You're (depending on context) Alt: YR	KMTR	Transmitter
RX	Receiver, radio	STN	Station	URS	Yours	XYL	Wife (ex-YL) (Extra Young lady, i.e. wife)
SAE	Self-addressed envelope	T	Zero (usually an elongated dah)	VX	Voice; phone + French "Vieux"	VF	Wife

CODE	MEANING	CODE	MEANING	CODE	MEANING	CODE	MEANING
10-7	Out of service	10-40	Silent run -- no light, siren	10-73	Smoke report	10-15	Civil disturbance
10-8	In service	10-41	Beginning tour of duty	10-74	Negative	10-16	Domestic disturbance
10-9	Repeat	10-42	Ending tour of duty	10-75	In contact with ...	10-17	Meet complainant
10-10	Fight in progress	10-43	Information	10-76	En route ...	10-18	Quickly
10-11	Dog case	10-44	Permitted to leave ...	10-77	ETA (estimated time of arrival)	10-19	Return to ...
10-12	Stand by (stop) -- road report	10-45	Animal carcass at ...	10-78	Need assistance	10-20	Location
10-13	Weather report	10-46	Assist motorist	10-79	Notify coroner	10-21	Call ... by telephone
10-14	Prowler report	10-47	Emergency repairs at ...	10-80	Chase in progress	10-22	Disregard

CODE	MEANING	CODE	MEANING	CODE	MEANING	CODE	MEANING
10-23	Arrived at scene	10-56	Hit and run (fatal, personal injury, property damage)	10-89	Bomb threat	10-24	Assignmend complete
10-25	Report in person (meet) ...	10-58	Direct traffic	10-91	Pick up prisoner/subject	10-26	Expeditely subject, convoy
10-27	Drivers license information	10-60	Squad in vicinity	10-93	Blockade	10-28	Isolate self for message
10-29	Check for wanted	10-62	Reply to message	10-95	Prisoner/subject in custody	10-30	Unnecessary use of radio
10-31	Crime in progress	10-64	Message for local delivery	10-97	Check (test) signal	10-32	Man with gun
10-33	Net message assignme nt	10-98	Prison/jail break	10-99	Wanted/ stolen indicated		

Length Conversions Table (Common Length Units)

	millimeter (mm)	centimeter (cm)	meter (m)	kilometer (km)	inch (in)	foot / feet (ft)	yard (yd)	mile (mi)	nautical mile (nmi)
1 millimeter (mm)	1	0.1	0.001	0.000001	0.04	0.003	0.001	0.000001	0.000001
1 centimeter (cm)	10	1	0.01	0.000010	0.4	0.03	0.01	0.000006	0.000005
1 meter (m)	1000	100	1	0.001	39	3.3	1	0.0006	0.0005
1 kilometer (km)	1000000	100000	1000	1	39370	3281	1094	0.6	0.5
1 inch (in)	25	2.5	0.03	0.00003	1	0.1	0.03	0.00002	0.00001
1 foot / feet (ft)	305	30.5	0.3	0.0003	12	1	0.3	0.0002	0.0002
1 yard (yd)	914	91	1	0.0009	36	3	1	0.0006	0.0005
1 mile (mi)	1609344	160934	1609	1.6	63360	5280	1760	1	0.9
1 nautical mile (nmi)	1852000	185200	1852	1.9	72913	6076	2025	1.2	1

NOAA Frequencies

Official Name	Frequency	Marine Channel	Alert Channel
WX1	162.550 MHz	39B	7
WX2	162.400 MHz	36B	1
WX3	162.475 MHz	97B	4
WX4	162.425 MHz	96B	2
WX5	162.450 MHz	37B	3
WX6	162.500 MHz	38B	5
WX7	162.525 MHz	98B	6
WX8	161.650 MHz	21B	
WX9	161.775 MHz	83B	
WX10	163.275 MHz	113B	

Common Ham Radio Q Signals

Q Signal	Meaning	Q Signal	Meaning	Q Signal	Meaning	Q Signal	Meaning	Q Signal	Meaning	Q Signal	Meaning
QRL	Is the frequency busy? The frequency is busy. Please do not interfere.	QRN	Abbreviation for interference from natural or human-made static.	QRP	Shall I decrease power? Decrease power.	QRS	Shall I send more slowly? Send more slowly (<u> </u> wpm).	QRU	Have you anything more for me? I have nothing more for you.	QRZ	Who is calling me?
QRM	Abbreviation for interference from other signals.	QRO	Shall I increase power? Increase power.	QRQ	Shall I send faster? Send faster (<u> </u> words per minute [wpm]).	QRT	Shall I stop sending or transmitting? Stop sending or transmitting.	QRV	Are you ready? I am ready.	QSL	Did you receive and understand? Received and understood.
QRX	Stand by.	QSB	Abbreviation for signal fading.	QSO	Abbreviation for a contact.	QST	What is your location? My location is <u> </u> .	QTH		QSY	Change to transmission on another frequency (or to <u> </u> kHz).
QTX	Transmitting.	QTB	Time between transmissions.	QTC	Approximate time of next transmission.	QTD	Time delay before retransmission.	QTE	Direction of travel.	QTZ	General call preceding a message addressed to all amateurs.
Search and Rescue X-Codes											
XXX	Task Force Exited	YYY	Date & Time	ZZZ		AAA		BBB		CCC	

Volume Conversion Table (Common Volume Units)

	milliliter (mL)	liter (L)	cubic meter (m³)	cubic inch (in³)	cubic foot (ft³)	pint (pt) [US liquid]	quart (qt) [US liquid]	gallon (gal) [US liquid]	barrel (bbl) [US liquid]
1 milliliter (mL)	1	0.001	0.000001	0.06	0.000004	0.002	0.001	0.0003	0.000008
1 liter (L)	1000	1		61	0.04	2	1.1	0.3	
1 cubic meter (m³)	1000000	1000	1	61024	35	2113	1057	264	8.4
1 cubic inch (in³)	16	0.02	0.00002	1.0	0.00006	0.04	0.02	0.004	0.0001
1 cubic foot/feet (ft³)	28317	28	0.03	1728	1	60	30	7.5	0.24
1 pint (pt) [US liquid]	473	0.5	0.0005	29	0.017	1	0.5	0.13	0.004
1 quart (qt) [US liquid]	946	0.9	0.0009	58	0.03	2	1	0.25	0.008
1 gallon (gal) [US liquid]	3785	3.8	0.004	231	0.13	8	4	1	0.03
1 barrel (bbl) [US liquid]	119240	119	0.12	7277	4.2	252	126	31.5	1

Common Ham Radio Repeater Channel Spacings And Offsets

Common Parameters Repeated: Channel Spacing and Channels	Band	Output Freq. of Each Group (In MHz)	Offset from Output to Input Freq
	6 meters	51.62 – 51.98, 52.5 – 52.98, 53.5 – 53.98	500 kHz
	20 meters (a mix of 20 kHz and 15 kHz channel spacing)	145.2 – 145.5, 146.61 – 146.97, 147.00 – 147.39	– 600 kHz – 600 kHz + 600 kHz
	222 MHz or 1-1/4 meters	223.85 – 224.98	– 1.6 MHz
	440 MHz or 70 cm (local options determine whether inputs are above or below outputs)	442 – 445 (NOTE: California repeaters start at 440 MHz) 447 – 450	+ 5 MHz
	1296 MHz or 23 cm	1282 – 1288, 1290 – 1294	– 5 MHz – 12 MHz

Step Distance to Miles

Step Length (in)	Steps = Mile	Step Length (in)	Steps = Mile
18	3520	30	2112
21	3017	33	1920
24	2640	36	1760
27	2347	39	1625

Step Distance to Kilometers

Step Length (cm)	Steps =km	Step Length (cm)	Steps =km	Step Length (cm)	Steps =km
46	2187	69	1458	91	1094
53	1875	76	1312	99	1009
61	1640	84	1193		

Search and Rescue X-Codes

Date & Time

Task Force Exited

8 SEPT 03

0030 HR

Task Force Identifier

Personal Hazards

AZ-1

BIOHAZ

2 LIVE

of live & dead victims still inside

Crossing slash made as Task Force exits