COMPANION TO THE 90-DAY BLACKOUT HANDBOOK

THE OUTAGE SUPPLY PLANNER HANDBOOKS · BOOK 2

Tools & Skills *for the dark.*

The tools a household needs when nothing plugs in, and the skills that keep a family fed, warm, patched up and safe for 90 days without the grid.

120+	21	12	0
tools, in buying order	core skills, 13 in pictures	practice weekends	plugs needed

PRINT · PUNCH · KEEP IN THE TOOLBOX

FAMILY NAME: _____

START HERE

Tools you can use, *skills you've practiced.*

A shed full of gear doesn't help if no one in the house knows how to use it in the dark, tired and cold. This book pairs every tool with the skill that makes it useful, and ends with a 12-weekend plan to learn them as a family.

How to use it

1. **Walk the house with Part 1** and tick what you already own in the tool inventory (p. 51). Most families already own more of it than they think.
2. **Buy in tiers.** Tier 1 first (the first month's needs), then Tier 2, then Tier 3.
3. **Learn one skill a weekend** with the practice plan (p. 36). Log who can do what on the skills tracker (p. 53).
4. **Keep tools in one place**, labeled, with a headlamp on top of the toolbox.
5. Pair it with Book 1, *The 90-Day Blackout Handbook*, for water, food, babies and safety.

The three rules of tools

- **Manual beats powered.** A hand saw always works. A cordless saw works until the batteries die.
- **Two is one, one is none.** Keep a spare of anything you can't live without: can opener, lighter, headlamp, water filter element.
- **Good enough, well kept.** A mid-priced tool that is sharp, oiled and where it belongs beats an expensive one you can't find.

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Safety first, always. Power tools, axes, fuel, fire and first aid can hurt people. Learn in person from someone qualified where you can (a first aid class, a hardware store workshop, a scout leader), wear eye protection, and keep children well back. Read the safety notice on page 55.

BUYING IN TIERS

What to buy first, *and what can wait.*

Tools are bought once and last decades, so buy in order of need. Rough US prices for decent mid-range tools, not quotes. Watch yard sales, estate sales and pawn shops: old hand tools are often better than new ones.

TIER 1 · FIRST MONTH

Keep the house running

- Everyday carry for each adult (p. 4)
- Basic hand tool kit (p. 5)
- Duct tape, zip ties, cord, tarp
- Gas & water shutoff wrenches
- Manual can openers ×2
- Headlamps, lanterns, batteries
- Lighters, matches, fire extinguishers
- Drum pump, bung wrench, siphon
- Plunger, buckets, toilet kit
- First aid kit, trauma shears

Roughly $400–$700

TIER 2 · 30 DAYS

Fix, cook and clean

- Bow saw, hatchet, pruning saw
- Shovel, rake, wheelbarrow or wagon
- Cordless drill + manual hand drill
- Multimeter, extension cords
- Camp stove, cast-iron pot, pressure cooker
- Plywood + screws for windows
- Laundry plunger, wringer, line
- Jump starter, tire plug kit, 12 V pump
- Two-way radios, paper maps, compass
- Sharpening stone & file

Roughly $700–$1,200

TIER 3 · 90 DAYS

Go the distance

- Felling axe, maul, wedges
- Garden tools, seeds, hose
- Rocket stove, Dutch oven
- Rain catchment kit
- Pipe repair kit, pipe wrench
- Bike + repair kit + kid trailer
- Sewing kit, awl, leather needles
- Pulse oximeter, BP cuff
- Solar dehydrator / drying screens
- Spare parts for everything

Roughly $600–$1,500

Borrow before you buy. Big, rarely used tools (chainsaw, post-hole digger, ladder, wheelbarrow) can be shared across three or four neighbors. Agree who owns what on the neighbor roster in Book 1.

What you already own counts. Kitchen knives, garden tools, the car's jack and lug wrench, camping gear: list it in the inventory before shopping.

On you, *every day of the outage.*

In a dark house the tool you need is never in the toolbox. Each adult carries a small kit in a pocket, belt pouch or small bag, from the moment the lights go out.

ITEM	WHY
Headlamp + spare batteries	Both hands free for a baby, a stove or a ladder.
Small flashlight	Backup light; checks under cars and into corners.
Multitool with pliers	Pliers, knife, screwdrivers, can opener, wire cutter.
Folding knife or fixed blade	Cord, tape, packaging, food, kindling.
Two lighters	Stove, lantern, fire. One fails, use the other.
Whistle	Three blasts = help. Carries further than a voice.
Bandana or buff	Dust mask, sling, pot holder, water pre-filter.
Small notebook + pencil	Logs, messages, numbers. Pencil writes when wet.
Phone + power bank	Camera, flashlight, texts when the network works.
Work gloves	Debris, wood, hot pots, broken glass.
Paracord, 10–20 ft	Tie, hang, lash, replace a lace.
Keys + cash in small bills	Card readers need power.

For older kids (8+)

- [ ] A small flashlight they're allowed to keep
- [ ] A whistle on a lanyard, and they know "3 blasts"
- [ ] A child card with name, address and parents' phone (Book 1, p. 39)
- [ ] A small water bottle

No knives or lighters for children unless you've taught them and you supervise.

The car kit

- [ ] Jump starter pack
- [ ] Tire plug kit + 12 V pump
- [ ] Tow strap
- [ ] Folding shovel
- [ ] Ice scraper / snow brush
- [ ] Blanket, warm hats
- [ ] Water, snacks
- [ ] Paper map, phone cable
- [ ] First aid kit
- [ ] Reflective triangle / vest

Same place, every time. Put the kit in the same pocket each morning and hang the headlamp on the same hook each night. In the dark, habit is faster than searching.

Knife laws vary by state and city, especially for carrying outside the home. Check yours. Around the house and yard, a simple folding knife and a multitool do almost every job.

The core kit *that fixes almost anything.*

This kit handles boarding a window, fixing a door, tightening a pipe fitting, building a rain barrel stand or assembling a crib. Keep it in one toolbox with a headlamp on top.

TOOL	WHAT IT'S FOR	BUYING TIP	TIER
Claw hammer (16 oz)	Nails, prying, demolition	Steel or fiberglass handle	1
Screwdriver set	Phillips #1, #2 and flat in 3 sizes; Torx bits	Magnetic tips help in the dark	1
Pliers: slip-joint, needle-nose, locking	Grip, bend, hold, cut wire	Locking pliers double as a clamp	1
Adjustable wrench (8" + 12")	Nuts, fittings, the gas valve in a pinch	Two so you can hold and turn	1
Utility knife + blades	Tarp, plastic sheeting, carpet, cardboard	Snap-off or replaceable blades	1
Tape measure (25 ft)	Cutting plywood, sizing windows	A pencil lives with it	1
Pry bar + flat bar	Stuck doors, debris, nails	18–24" wrecking bar	1
Hand saw (crosscut)	Lumber and plywood without power	"Hardpoint" saws stay sharp	1
Socket set (SAE + metric)	Car, generator, bike, furniture	⅜" drive covers most jobs	2
Allen / hex keys	Furniture, bikes, cribs, stoves	Both SAE and metric	2
Cordless drill/driver + 2 batteries	Screws into plywood, holes	Charges from a solar station	2
Manual hand drill (eggbeater)	Holes when batteries are flat	Old ones from yard sales are fine	2
Clamps (2 bar clamps, 4 spring)	Hold, glue, hang a tarp	Spring clamps hold tarps fast	2
Level + square + pencil	Shelves, drum stands, straight cuts	A speed square is enough	2
Staple gun + staples	Plastic over windows, tarps, insulation	Heavy-duty, ½" staples	2
Files: flat bastard file + rasp	Sharpen axes and shovels, smooth edges	Keep dry; a handle on each	2
Hacksaw + spare blades	Metal, pipe, bolts, plastic	24 TPI blades for thin metal	2
Caulk gun	Seal drafts and leaks	With silicone + acrylic caulk	3

Safety kit lives in the toolbox: safety glasses, work gloves, ear protection, dust masks (N95), a headlamp and a small first aid kit.

Label the handles with a stripe of bright tape. It makes tools easy to spot in the grass and easy to get back when you lend them.

Saws before axes, *sharp before strong.*

Storms bring branches down across driveways and roofs, and if you have a wood stove or an outdoor fire, wood becomes fuel. A sharp saw is safer and less tiring than an axe for most jobs.

TOOL	BEST FOR	TIER
Folding pruning saw (8–10")	Branches up to 4"; fits in a pack	1
Bow saw (21–24")	Logs up to 8–10"; fast and safe	2
Loppers (bypass)	Brush and branches up to 1.5"	2
Hatchet	Splitting kindling, small limbs	2
Splitting maul + 2 wedges	Splitting rounds into firewood	3
Felling axe (3–3.5 lb, 28–31")	Limbing, chopping larger wood	3
Chainsaw (optional)	Storm cleanup. Only with training and protective gear	3
Sawbuck (build one)	Holds logs at waist height for sawing	3

Keep it sharp

- ☐ Whetstone (coarse/fine) for knives
- ☐ Flat file for axes, hatchets, shovels, hoes
- ☐ Puck stone for axes in the field
- ☐ Spare bow saw blades (2)
- ☐ Light oil and a rag against rust
- ☐ Blade covers or sheaths for everything

Axe and saw safety

- Clear a circle an axe-length plus an arm all around you. No kids, pets or onlookers inside it.
- Split on a chopping block, never on the ground or against rock. Feet apart, knees bent.
- Wear eye protection, gloves and sturdy boots.
- Don't work when tired, cold or in the dark. Most injuries happen at the end of the day.
- **Never cut wood under tension** (bent trees, storm-felled trunks pinned by others). It can spring back violently. Leave it to professionals.
- Stay well away from downed power lines. Assume every line is live.

Chainsaws

Chainsaws cause many injuries after every major storm. If you own one: take a safety course, wear chaps, a helmet with face shield, ear protection and gloves, never cut above shoulder height, and never work alone. Store fuel mix in a labeled can.

Firewood basics

- Freshly cut ("green") wood smokes and barely burns. Seasoned wood is dried 6–12 months.
- Split wood dries faster. Stack it off the ground, covered on top, open on the sides.
- Dead standing branches and fallen hardwood that snaps cleanly are usually dry enough.
- Never burn treated, painted or pressure-treated lumber: the smoke is toxic.

Shovels, wagons *and something to carry water.*

Without fuel to spare, everything heavy moves by hand: water jugs, firewood, sandbags, a sick person. Wheels save your back; good shovels save your day.

TOOL	USE	TIER
Round-point shovel	Digging holes, trenches, burying waste	2
Square shovel / snow shovel	Moving gravel, debris, snow	2
Garden spade + digging fork	Garden beds, potatoes, compost	3
Mattock or pick	Hard clay, roots, rocky ground	3
Steel rake + leaf rake	Beds, debris, leaves for mulch	2
Hoe	Weeding, furrows for seeds	3
Wheelbarrow or garden cart	Water, wood, soil, sandbags	2
Folding wagon	Water runs, groceries, a tired toddler	2
Hand truck (dolly)	Water drums, generator, propane	3
Extension ladder + step ladder	Gutters, roof tarps, high shelves	2
Garden hose (drinking-water safe)	Filling drums, siphoning	2
Sandbags (empty) + sand	Flood barriers, weights for tarps	3
Pump sprayer (garden)	Shower, rinsing, cleaning	3

Moving heavy things safely

- **Water weighs about 8.3 lb a gallon.** A 7-gal jug is ~58 lb, a full 55-gal drum ~460 lb. Put drums where they'll stay *before* filling them.
- Lift with your legs: feet apart, back straight, load close to your body. Turn with your feet, not your waist.
- Two people for anything over about 50 lb.
- A back injury in an outage, with no doctor and a baby to carry, is a serious problem. Use wheels.

Ladder rules

- One foot out at the bottom for every four feet up (the 4-to-1 rule).
- Extend 3 feet above the roof edge. Someone holds the base.
- Three points of contact. Never on a wet, icy or windy roof.
- Stay at least 10 feet from overhead power lines.

> **Call before you dig.** Even in an outage, buried gas lines and cables are there. Dial 811 before you dig deep holes, or dig only in places you're sure are clear (old garden beds).

Yard prep checklist

- [ ] Gutters clear so rain catchment works
- [ ] Dead branches over the house removed
- [ ] A level, firm spot for water drums
- [ ] A covered, ventilated spot for the outdoor kitchen
- [ ] A spot 20 ft from the house for the generator

Tape, ties, tarps *and a box of screws.*

Tools do nothing without materials. Hardware stores may be closed for weeks, so keep a "fix-it" bin of consumables. This list repairs a roof leak, a broken window, a torn tent, a burst hose and a loose cabinet.

The fix-it bin

- [ ] **Duct tape**, 4+ rolls (cloth-backed, heavy duty) — 4
- [ ] **Zip ties**, assorted lengths — 200
- [ ] **Paracord** (550) — 100 ft
- [ ] **Rope**, ½" polyester or nylon — 100 ft
- [ ] **Tarps**, heavy-duty, 10×12 and 12×16 — 4
- [ ] **Plastic sheeting**, 6 mil — 1 roll
- [ ] **Plywood**, ½" or ⅝", cut to window sizes — as needed
- [ ] **Screws**: deck screws 1¼", 2", 3" — 1 lb each
- [ ] **Nails** assortment, roofing nails — 1 lb each
- [ ] **Bolts, nuts, washers** assortment — 1 kit
- [ ] **Baling or tie wire** — 1 roll
- [ ] **Hose clamps**, assorted — 10
- [ ] **Epoxy** (2-part) + super glue + wood glue — set
- [ ] **Silicone caulk** + roof sealant — 2 + 1
- [ ] **Plumber's (PTFE) tape** — 3
- [ ] **Electrical tape** — 3
- [ ] **Bungee cords** + ratchet straps — 6 + 4
- [ ] **Weatherstripping** + foam strips — set
- [ ] **WD-40** or penetrating oil — 1
- [ ] **Sandpaper** and steel wool — set

Sewing & fabric repair

- [ ] Sewing kit: needles, heavy thread, buttons, safety pins
- [ ] Heavy-duty needles + upholstery thread
- [ ] Sewing awl (for leather, canvas, boots)
- [ ] Iron-on or adhesive patches (no iron? use tape)
- [ ] Tent and tarp repair tape
- [ ] Seam grip / tent sealant
- [ ] Spare shoelaces (or paracord)

What duct tape fixes

Torn tarps, cracked hoses (short term), split jugs (not drinking water), broken window panes (an X of tape holds glass while you board it), worn boots, drafts around windows, labels for everything. It does **not** fix gas leaks, electrical wiring, or anything carrying fuel.

Store it right

- One clear lidded bin, labeled "FIX-IT", next to the toolbox.
- Small parts in a divided organizer box.
- Plywood flat, labeled with which window it fits ("Kitchen, left").
- Tape and glue somewhere cool; heat ruins adhesives.

> **Pre-cut and label window boards now.** Drill the screw holes, number each board and the window it fits. Boarding a broken window then takes minutes, not an afternoon.

Moving water *without a pump that plugs in.*

Storing 360 gallons is only half the job. You also need to get it out of the drums, carry it, filter it and catch more. These tools are cheap and easy to forget until the first day you need them.

TOOL	USE	TIER
Drum hand pump or siphon pump	Gets water out of 55-gal drums	1
Bung wrench	Opens drum caps (they're stiff)	1
Jiggle siphon (self-priming)	Fast drum-to-jug transfer, no mouth	1
Gravity filter + spare elements	Treats several gallons an hour	1
Filter bottles or straws	One per person for go-bags	2
Collapsible jugs (5 gal)	Water runs to distribution points	2
Funnel (large, clean)	Filling jugs and bottles	1
Eyedropper + measuring spoons	Bleach dosing (Book 1, p. 8)	1
Chlorine test strips	Check treated water	3
Downspout diverter + rain barrel	Catches roof water for washing	3
Drinking-water hose (white/blue)	Filling drums without plastic taste	2
Water heater drain hose	Taps 30–80 gal stored in the heater	1
Kettle + big stockpot	Boiling a batch outdoors	1
Clear 2-liter PET bottles	Solar disinfection (p. 20)	3

Rain catchment math

Each inch of rain on **1,000 square feet** of roof gives about **600 gallons**. Even one downspout from a small section of roof fills a 55-gal barrel in a modest rain.

- Use roof water for washing, flushing, laundry and the garden.
- For drinking: let the first flush run off, then filter **and** boil or disinfect it. Roofs collect bird droppings, dust and chemicals.
- Cover barrels with screen against mosquitoes and keep lids on near toddlers.

Tapping the water heater

1. Turn off the power (breaker) or set the gas to "pilot" or off first.
2. Close the cold water inlet valve on top.
3. Open a hot tap in the house to let air in.
4. Drain from the bottom valve with a short hose into a clean container. The first water may have sediment: let it settle.
5. Don't turn the heater back on until it's full again, or the element can burn out.

Never start a siphon by mouth on anything that might have held fuel or chemicals. Use a self-priming siphon or a pump, and keep water hoses separate from fuel hoses (label them).

Three ways to light it, *three ways to cook.*

Keep three ways to make fire and three ways to cook, so no single failure leaves you with cold food. All cooking with flames happens **outdoors**, at least 10 feet from the house.

Making fire

- [ ] Disposable lighters — 10+
- [ ] Long-reach utility lighters — 2
- [ ] Stormproof / waterproof matches — 2 boxes
- [ ] Strike-anywhere or kitchen matches — 4 boxes
- [ ] Ferro rod + striker (works wet) — 1–2
- [ ] Fire starters (cubes, cotton + petroleum jelly) — 50
- [ ] Waterproof container for all of it — 1

Cooking

TOOL	FUEL	NOTES
2-burner camp stove	Propane	Main cooker. Adapter hose runs it off a 20-lb tank
Rocket stove	Twigs	Cooks on sticks; free fuel (build one, p. 22)
Charcoal or gas grill	Charcoal / propane	Outdoors only, far from doors
Pressure cooker	Any	Beans in ~30 min; saves fuel
Cast-iron Dutch oven	Coals	Bakes bread, stews, roasts
Cast-iron skillet	Any	Pancakes, flatbread, eggs
Percolator / kettle	Any	Coffee, tea, water for washing
Insulated cooler	None	Retained-heat cooking (p. 22)

Kitchen hand tools

- [ ] Manual can openers ×2
- [ ] Hand grain mill (for whole grain)
- [ ] Hand whisk, egg beater
- [ ] Long tongs, heat gloves
- [ ] Lid lifter for Dutch oven
- [ ] Food thermometer
- [ ] Fridge/freezer thermometers
- [ ] Measuring cups & spoons
- [ ] Wash basins ×3 (p. 32)
- [ ] Cutting boards, knife sharpener
- [ ] Mesh strainer, cheesecloth
- [ ] Sprouting jar + lid

Fuel tools

- [ ] Propane tank gauge — 1
- [ ] Adapter hose (1-lb appliance to 20-lb tank) — 1
- [ ] Leak-check: soapy water in a spray bottle — 1
- [ ] Approved gas cans + fuel stabilizer — as planned
- [ ] Charcoal chimney starter — 1

Indoors: no stoves, grills or charcoal, ever. Carbon monoxide kills whole families in outages, often at night. Battery CO alarms on every floor. See Book 1, p. 16.

Leak check: brush soapy water on propane connections. Bubbles mean a leak: shut the tank valve and re-seat the fitting. Never check with a flame.

Charge, test, *and never backfeed.*

You don't need to be an electrician to keep small power working. You need the right cords, a way to test batteries, and the discipline to leave house wiring alone.

TOOL	WHY	TIER
Solar power station + panels	Silent daily power (Book 1, p. 14)	2
Multimeter (basic digital)	Tests batteries, fuses, cords, panel output	2
Battery tester	Sorts good AA/AAA/9 V from dead	1
Rechargeable batteries + charger	AA/AAA from USB or solar	1
Outdoor extension cords (12 gauge)	Generator to appliances, safely	2
Surge-protected power strip	Sorting loads on the station	2
USB cables (every type) ×2	The cable always goes missing	1
12 V car inverter (150–300 W)	Charging from the car, outdoors	2
Jump starter pack	Car battery, and a USB power bank	2
Spare fuses (car + station)	Cheap fix for "it just died"	2
Non-contact voltage tester	Checks if a wire or outlet is live	2
Wire strippers + connectors	Low-voltage DC projects (solar, 12 V)	3
Generator kit: oil, spark plug, plug wrench, funnel	Keeps the backup running	3

Using a multimeter (basic)

- **Battery:** set to DC volts. A fresh AA reads about 1.5 V (rechargeable 1.2–1.4 V); under ~1.2 V an alkaline AA is mostly spent.
- **Solar panel:** DC volts across the leads in full sun should be close to the panel's rated "open circuit voltage".
- **Fuse or cord:** continuity mode; a beep means it's intact.

Electrical rules

- **Never backfeed**: never plug a generator into a wall outlet or use a "double male" cord. It can kill you, your neighbors or line workers. Use cords, or a transfer switch installed by a licensed electrician.
- Don't open the breaker panel or work on house wiring. Leave 120/240 V to licensed electricians.
- Keep cords dry, uncoiled while in use, and out of walkways. Damaged cord = replace it.
- Stay 35 feet or more from downed lines and anything touching them (fences, puddles, cars). Report them.
- Unplug sensitive electronics until power is stable again.

Charging station routine

1. Panels out at 8 am, angled to face the sun (south in the US), moved twice a day.
2. Charge in priority order: medical devices, radios, headlamps, phones, then everything else.
3. Keep the station above about 20% overnight for emergencies.
4. Bring panels in at night and in storms.

Know your watts

Watts = volts × amps. A device label that says "5 V, 2 A" uses about 10 W. Daily Wh = watts × hours. Book 1's power budget (p. 36 there) adds it up.

Label every charger and cable with tape and the device it belongs to. Mixed-up chargers can damage batteries.

Shut it off, *patch it, keep it dry.*

Burst pipes in a frozen house, a tree branch through the roof, a smell of gas. Knowing where the shutoffs are and having the right wrench hanging next to them prevents a small problem becoming a disaster.

Shutoff tools (hang them at the shutoff)

TOOL	WHERE IT LIVES
Gas shutoff wrench	Tied to the gas meter
Water meter key (curb key)	By the main water shutoff
Headlamp	By the breaker box

Gas: only turn off the gas if you **smell gas, hear hissing**, or officials tell you to. Turn the valve a quarter turn so it's crosswise to the pipe. Then leave the house, don't use switches or phones inside, and call the gas company from outside. Once off, **only the utility should turn it back on.**

Plumbing kit

- [ ] Plunger (flange type)
- [ ] Toilet auger
- [ ] Pipe wrench (14")
- [ ] Slip-joint pliers (large)
- [ ] Pipe repair clamps (½", ¾")
- [ ] Push-fit fittings + caps
- [ ] Self-fusing silicone tape
- [ ] PTFE tape, plumber's putty
- [ ] Pipe insulation foam
- [ ] Bucket + old towels

Freezing weather

- If the house will freeze: shut off the main, open all taps, drain the pipes from the lowest tap.
- Pour a little RV antifreeze (non-toxic) into sink and toilet traps; don't use car antifreeze.
- Wrap exposed pipes with foam or towels.

Roof & window emergency kit

- [ ] Heavy tarps (12×16 or bigger) — 2
- [ ] 1×3 or 2×4 furring strips to batten tarps — 8
- [ ] Roofing nails / cap nails or screws — 1 lb
- [ ] Pre-cut plywood for each window — as needed
- [ ] Plastic sheeting + staple gun — 1 roll
- [ ] Shop broom, dustpan, heavy contractor bags — set
- [ ] Wet/dry shop vac (runs on generator) — 1
- [ ] Mops, squeegee, buckets — set
- [ ] Sump hand pump (if you have a basement) — 1
- [ ] Sandbags — 20
- [ ] Moisture meter or fans to dry walls — optional

Mold

Wet drywall, carpet and insulation start to grow mold within 24–48 hours. Dry everything fast; remove what can't dry. Wear an N95 mask and gloves when cleaning mold, and keep babies out of the area.

Photograph damage first for insurance, then make temporary repairs to prevent more damage. Keep receipts for everything you buy.

See, be seen, *find your way.*

Light

LIGHT	HOW MANY	NOTES
Headlamps	1 each + 2 spare	Red-light mode for night feeds keeps eyes adjusted
LED lanterns	3	Rechargeable + AA backup
Flashlights	1 per room	Same battery size everywhere
Solar garden lights	6–10	Charge by day, night lights in jars indoors
Glow sticks	20	Kids' night lights, marking hazards, safe for toddlers to hold
Motion lights (solar)	4	Doors, driveway, generator spot
Glow tape	1 roll	Breaker box, shutoffs, stairs, kit closet

Signal

- [ ] Whistle for each person
- [ ] Air horn
- [ ] Signal mirror
- [ ] Bright orange cloth / vest
- [ ] Chalk or spray paint
- [ ] Reflective tape

Three of anything—blasts, flashes, fires—means "help". (Signaling, p. 31.)

Navigation

- [ ] **Paper road map** of your state and county — 2
- [ ] **Local street map**, marked with routes, water points, shelters, hospitals — 2
- [ ] **Baseplate compass** — 2
- [ ] **Offline maps** downloaded on phones — every phone
- [ ] Clear zip bag for the map + grease pencil — 1

Communication tools

- [ ] Hand-crank / solar NOAA radio — 1
- [ ] Small AM/FM radio, AA batteries — 1
- [ ] FRS/GMRS two-way radios + chargers — 4
- [ ] Notebook, pencils, permanent markers — set
- [ ] Whiteboard for the family message board — 1
- [ ] Envelopes, paper, stamps (mail may run) — set

One battery size. Choose lights and radios that all take AA (or all USB-rechargeable). One stock of batteries then fits everything.

Message board. A whiteboard by the door: who went where, when back, radio channel. Everyone writes before they leave the house.

The kit *beyond band-aids.*

Book 1 lists the medicines. This is the hardware that lets someone trained help a cut, burn, sprain or fever while help is far away. Tools only help with the skill to use them: take a first aid class (p. 23).

Assessment

- ☐ Digital thermometers (one for baby) — 2
- ☐ Pulse oximeter (fingertip) — 1
- ☐ Blood pressure cuff (automatic) — 1
- ☐ Penlight, magnifying glass — 1 each
- ☐ Notebook for symptoms and doses (time each one) — 1

Wound & trauma

- ☐ Tourniquet (commercial, e.g. windlass type) — 2
- ☐ Pressure bandages + hemostatic or plain gauze for packing — 4
- ☐ Trauma shears — 2
- ☐ Fine tweezers, tick remover — 2
- ☐ Wound closure strips — 20
- ☐ Irrigation syringe (for cleaning wounds) — 2
- ☐ Gauze pads, rolls, medical tape, non-stick pads — plenty
- ☐ SAM-type moldable splint + elastic wraps — 2
- ☐ Triangular bandages (slings) — 3
- ☐ Nitrile gloves — 1 box
- ☐ Burn dressings / hydrogel — 4
- ☐ Emergency (foil) blankets — 4

Everyday care

- ☐ Nasal aspirator
- ☐ Saline drops & spray
- ☐ Oral syringes (dosing)
- ☐ Pill cutter, pill organizer
- ☐ Ice packs (instant)
- ☐ Hot water bottle (adults)
- ☐ Eye wash cup
- ☐ Dental kit: temporary filling, wax
- ☐ Nail clippers, scissors
- ☐ Reading glasses spare

Hygiene for care

- ☐ Hand sanitizer
- ☐ Alcohol pads
- ☐ N95 masks
- ☐ Disposable gowns / aprons
- ☐ Bleach for surfaces
- ☐ Trash bags for dressings

Tourniquets save lives only when used correctly. Learn in a "Stop the Bleed" class (often free): where to place it, how tight, and to note the time. Improvised tourniquets often fail.

Write it down. When someone is sick, log temperature, fluids, wet diapers, medicine and time on paper. If you reach a doctor or a radio nurse line, that log is gold.

Keep a reference book with the kit: a current first aid manual, and a remote-area medical guide for long periods without help.

Clean hands, clean clothes, *clean dishes.*

Toilet & waste

- [ ] 5-gal buckets + snap-on toilet seats — 2
- [ ] Heavy-duty bucket liners — 100+
- [ ] Cover material scoop + bin — 1
- [ ] Lidded outdoor bins for waste & diapers — 2
- [ ] Long-handled scrub brush + toilet brush — 2
- [ ] Rubber gloves (heavy, reusable) — 4 pairs
- [ ] Shovel for burying (when allowed) — 1

Handwashing station

- [ ] Water jug with spigot (5 gal) — 2
- [ ] Wash basin + gray-water bucket — 1 each
- [ ] Pump soap dispenser, paper towels — set
- [ ] Foot-pump or "tippy tap" (no hands) — optional

Dishes (3-basin method, p. 32)

- [ ] 3 basins or dishpans — 3
- [ ] Dish soap, scrubbers, brush — set
- [ ] Drying rack, clean towels — 1
- [ ] Unscented bleach + measuring spoon — 1

Laundry without a machine

- [ ] Two 5-gal buckets with lids — 2
- [ ] New, clean plunger (laundry only) or a hand washer — 1
- [ ] Washboard — 1
- [ ] Mop-bucket wringer or hand wringer — 1
- [ ] Clothesline (100 ft) + pegs — 1
- [ ] Folding drying rack (indoors in winter) — 1
- [ ] Laundry detergent (low-suds) — 3

How to do a bucket load

1. Bucket ⅔ full of warm water + a little detergent. Add a few items—don't overfill.
2. Plunge up and down 2–3 minutes; soak heavily soiled items first.
3. Wring, then rinse in a second bucket of clean water. Wring again hard.
4. Hang in sun and wind; shake out first. Sun helps kill germs.
5. Wash baby things and cloth diapers separately, rinse twice.

Personal hygiene tools

- [ ] Pump garden sprayer (shower)
- [ ] Solar shower bag
- [ ] Wash basin per person
- [ ] Microfiber towels
- [ ] Hair clippers (manual)
- [ ] Mirror

Wheels, *when fuel runs short.*

Gas stations need power to pump fuel. Your car may be your charger, your heater on a trip to a shelter, or your way out. A bike may be your transport for weeks.

Car tools

TOOL	WHY
Jump starter pack	Starts a dead battery without a second car
Tire plug kit + 12 V compressor	Fixes most nail punctures
Tire gauge	Low tires waste fuel
Jack + lug wrench (check they're there)	Spare tire changes
Tow strap (not a chain)	Pulling a car out of a ditch
Folding shovel, traction mats	Snow, mud
Spare fluids: oil, coolant, washer fluid	Long drives, old cars
Fuses, bulbs, wiper blades	Small failures
Approved fuel cans + stabilizer	Fuel stored safely outside the house
Siphon pump (fuel only, labeled)	Moving fuel between cans, generator

Running the car for heat or charging: only outdoors, never in a garage, and clear the exhaust pipe of snow. A blocked tailpipe fills the cabin with carbon monoxide in minutes.

Bike tools

- ☐ Floor pump + mini pump
- ☐ Spare inner tubes ×2
- ☐ Patch kit, tire levers
- ☐ Bike multitool
- ☐ Chain lube, rag
- ☐ Spare chain link
- ☐ Lock (heavy)
- ☐ Lights, front + back
- ☐ Rear rack + panniers
- ☐ Child seat or trailer

Fixing a flat (bike)

1. Remove the wheel. Lever one side of the tire off the rim, pull out the tube.
2. Pump a little air in; find the hole by sound or by dunking in water.
3. **Run your fingers carefully inside the tire** to find and remove the thorn or glass.
4. Patch (rough up, glue, wait until tacky, press patch) or use a spare tube.
5. Tuck the tube in, seat the tire by hand, pump to the pressure printed on the tire.

Fuel facts

- Keep the car at half a tank or more, always.
- Untreated gasoline can go stale in a few months; with stabilizer, often a year or more. Rotate it into the car.
- Store fuel in a detached shed, never in the house or attached garage, and within local limits.

Sharp, oiled, *and where it belongs.*

After every use

- **Clean** off dirt and sap. Dirt holds moisture and causes rust.
- **Dry** completely, then wipe metal with a lightly oiled rag.
- **Sheath** blades and put the tool back in its place.
- Note anything broken on the toolbox list and fix or replace it.

Sharpening

TOOL	HOW
Knife	Whetstone at a steady angle (about 20°), equal strokes each side, coarse then fine; strop on leather or cardboard
Axe / hatchet	File toward the edge, following the original bevel; finish with a puck stone
Shovel / hoe	Flat file on the top side of the edge; it doesn't need to be razor sharp
Pruners / loppers	Sharpen only the beveled side; clean sap with alcohol
Saws	Replace blades; sharpening saws is a specialist job

Sharpen away from your body and keep fingers behind the edge. A dull tool slips and is more dangerous than a sharp one.

Every 6 months (with Book 1's rotation day)

- [ ] Test every flashlight, lantern and radio
- [ ] Check battery dates; remove batteries from stored devices
- [ ] Charge the solar station, power banks, jump starter
- [ ] Run the generator under load for 20 minutes; check oil
- [ ] Check fire extinguisher gauges
- [ ] Inspect tarps, ropes and cords for rot and cracks
- [ ] Oil hinges, tool heads, padlocks
- [ ] Rotate gasoline into the car; refill with stabilizer
- [ ] Check propane tanks for rust and their date stamp
- [ ] Update the tool inventory (p. 51)

Wooden handles

Sand lightly and rub in boiled linseed oil once a year. Replace any handle that is cracked or loose: a flying axe head is a serious injury.

Batteries

- Store lithium batteries and power stations around 50–80% charge, in a cool place.
- Never store loose batteries where their ends can touch metal (keys, coins).
- Swollen, hot or leaking battery: if you can do it safely, move it outdoors onto concrete, away from anything that burns. If it smokes or catches fire, get everyone out and call 911.

Shadow board. Outline each tool on pegboard with a marker. A missing tool shows instantly, even by headlamp.

PART 2

Skills *you can't buy.*

When the stores are closed, what you know is worth more than what you own. These are the skills that matter most for a family at home through a long outage. Learn them now, while mistakes are cheap and help is a phone call away.

19 The skill plan

20 Make water safe

21 Build and control a fire

22 Cook with almost no fuel

23 First aid that matters

25 Knots worth knowing

26 Stay warm, stay dry

27 Fix the house

28 Grow and keep food

30 Find your way, call for help

32 Clean & aware

33 The calm head

34 Teach the kids

36 The 12-weekend plan

Twenty-one skills, *ranked by what keeps you alive.*

Not every skill matters equally. Start at the top. Most take one weekend to learn and a few repeats to keep. Every adult should know the first eight; split the rest across the household.

#	SKILL	WHY IT MATTERS	HOW TO LEARN	TIME
1	**CO & fire safety**	The #1 outage killer is preventable	Book 1 p. 16; test alarms; extinguisher drill	1 hr
2	**First aid, CPR, choking**	Help may be hours away	Red Cross / AHA class incl. infant CPR	1 day
3	**Bleeding control**	Severe bleeding kills in minutes	"Stop the Bleed" class	2 hrs
4	**Water treatment**	Dirty water is the top illness risk	p. 20; practice boil, bleach, filter	2 hrs
5	**Sanitation**	Waste spreads disease fast	p. 32; set up the bucket toilet once	1 hr
6	**Staying warm / cool**	Babies lose heat fast	p. 26; one-room drill on a cold night	1 night
7	**Shutting off utilities**	Prevents floods, fires, gas leaks	p. 12; find and label every shutoff	1 hr
8	**The calm head**	Panic causes most bad decisions	p. 33; family meeting, drills	ongoing
9	**Fire building**	Outdoor cooking, boiling water	p. 21; practice in a fire pit	2 hrs
10	**Fuel-saving cooking**	Fuel is limited; food isn't much use raw	p. 22; a cook-out weekend	1 day
11	**Home repair**	Keep weather and water out	p. 27; board one window, tarp a shed	1 day
12	**Knots & lashing**	Tarps, loads, lines, repairs	p. 25; 6 knots with a cord	2 hrs
13	**Radio & signaling**	Information and help when phones fail	p. 31; GMRS license, weekly check-ins	2 hrs
14	**Navigation**	Getting out without GPS	p. 30; drive your routes with a paper map	½ day
15	**Growing & preserving food**	Fresh food for months 2 and 3	p. 28–29; a container garden now	season
16	**Make & mend**	Clothes, bread and repairs from scratch	p. 35; sew a patch, bake bread	1 day
17	**Laundry by hand** NEW	Clean clothes, healthy skin and feet	p. 41; wash one load in a bucket	1 hr
18	**Generator safety** NEW	Generator CO is a leading cause of death after storms	p. 43; set it up 20 ft out, run a load	1 hr
19	**Keeping food cold** NEW	Saves days of food at the start	p. 44; thermometers in, freeze jugs	30 min
20	**Tarp shelter** NEW	Rain roof, dry woodpile, broken roof	p. 47; pitch an A-frame in the yard	1 hr
21	**Car rescue** NEW	Dead battery, flat tire, no tow truck	p. 49–50; jump and swap a wheel at home	2 hrs

Learn it twice. Do each skill once by day, then once more in the dark or the cold. Real outages happen at night, in storms, when you're tired. Part 3 (p. 37) shows skills 3, 4, 5, 7, 9, 14 and 17–21 in pictures.

Four ways to treat water, *practiced once each.*

Book 1 has the full tables. Here is the hands-on version: do each method once with tap water so you know how long it takes and how much fuel or bleach it uses.

1 · Boil

1. Clear cloudy water first: settle it, then pour through a cloth.
2. Bring to a **rolling boil for 1 minute** (3 minutes above 6,500 ft).
3. Cool covered. Aerate by pouring between two clean containers.

Practice: time how long a full pot takes on your camp stove and how much propane it used (weigh the tank).

2 · Bleach

1. Plain unscented bleach, less than a year old. Check the % on the label.
2. Per gallon of clear water: **8 drops of 6%** or **6 drops of 8.25%**. Double for cloudy water.
3. Stir, wait **30 minutes**. A faint chlorine smell means it worked; if not, dose again and wait 15 minutes.

3 · Filter

1. Pre-filter through cloth so the filter doesn't clog.
2. Prime and run the gravity filter per its manual; note the flow rate.
3. Scrub or backflush elements when flow slows. Never let ceramic elements freeze.
4. Most filters don't stop viruses: add bleach or boil when water may be contaminated by sewage.

4 · Sunlight (SODIS)

A backup when you have no fuel, filter or bleach. Fill **clear PET plastic bottles** (2 liters or smaller, labels off) with **clear** water, cap them, and lay them on their side in **full sun for 6 hours**—or **2 full days** if it's more than half cloudy. It doesn't work in continuous rain or with cloudy water. (WHO / CDC.)

A sheet of metal roofing or foil under the bottles helps. Drink straight from the bottle.

Find hidden and wild water

- **Home:** water heater, pipes, toilet tanks, ice (Book 1, p. 7).
- **Rain:** tarp corners into buckets work in a pinch.
- **Streams, lakes:** choose moving, clear water upstream of roads and farms. Always treat.
- **Never:** floodwater, pools, water near fuel spills or industry. Filters don't remove chemicals.

Practice drill (1 hour)

- [ ] Treat 1 gallon by each method
- [ ] Find and label the water heater drain valve
- [ ] Pump water from a drum to a jug
- [ ] Everyone over 10 doses bleach correctly once

Tinder, kindling, fuel, *and a bucket of water.*

You'll need outdoor fire to boil water and cook if the propane runs out. A good fire is small, hot and controlled. Check local burn bans: in a drought, open fires may be illegal and dangerous.

The three materials

STAGE	SIZE	EXAMPLES
Tinder	Hair-thin	Dry grass, birch bark, cotton balls with petroleum jelly, dryer lint, wood shavings
Kindling	Pencil-thin to thumb-thick	Dead twigs that snap, split sticks
Fuel	Wrist-thick and up	Split, seasoned wood

Gather **twice as much** tinder and kindling as you think you need, before you strike anything.

Lay and light it

1. Clear a 10–ft circle down to bare soil, or use a fire pit or ring. Bucket of water and shovel at hand.
2. Fist-sized bundle of tinder in the center.
3. **Teepee:** lean kindling around it, gaps on the wind side. Or **log cabin:** stack kindling in a square around it.
4. Light the tinder from the windward side, low down.
5. Blow gently at the base. Add bigger kindling only when the smaller is burning well.
6. Add fuel one piece at a time. Fire needs air: don't smother it.

Ferro rod (works when wet)

1. Hold the striker still, close to the tinder; pull the **rod** back hard so sparks fall into the tinder (this avoids knocking the bundle over).
2. Cotton balls with petroleum jelly catch a spark every time. Fluff them open.

Wet weather

- Dead branches still on trees are drier than wood on the ground.
- Split wood: the inside is dry. Shave thin "feather sticks" from it.
- Keep a bag of dry tinder and kindling indoors at all times.

Fire safety

- Never leave a fire unattended, not even for a minute.
- Children stay outside a marked circle (a rope or chalk line) 6 feet from the fire.
- No gasoline or fuel to start or revive a fire. It explodes.
- Keep fires small, away from the house, fences, overhanging trees and dry grass.
- Smoke inside the house = put it out and ventilate.

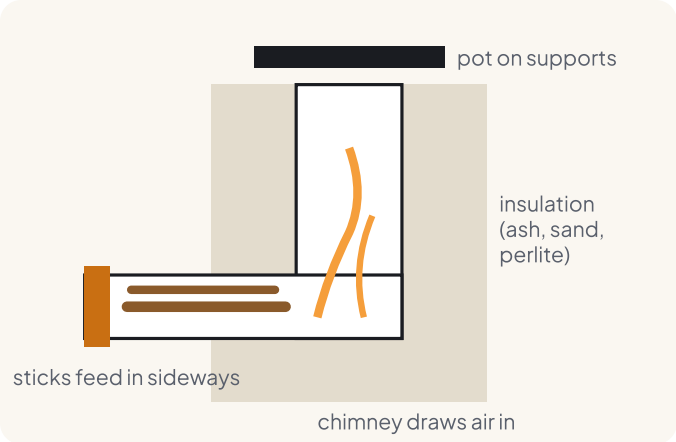
Putting it out: drown, stir, feel

Drown with water, stir the ashes with a shovel, drown again, then feel for heat with the back of your hand held above the ashes. If it's too hot to touch, it's too hot to leave.

A rocket stove *and a box of towels.*

Build a rocket stove

A rocket stove burns small sticks very efficiently in an insulated L-shaped chimney: a few handfuls of twigs boil a pot of water.



1. **Bricks:** stack 16–20 bricks in a square tower with an opening at the bottom front. Or use a large can (#10) with a smaller can as chimney and an elbow, packed with sand or wood ash.
2. Put a small rack (grill grate or 3 bricks) on top so air flows under the pot.
3. Feed thumb-thick sticks into the side opening; push them in as they burn.
4. Outdoors only, on bare ground or pavers, away from walls.

Retained-heat ("hay box") cooking

1. Bring rice, beans (soaked), oats or stew to a full boil for 5–10 minutes (beans: 10).
2. Put the lid on and wrap the pot in towels or blankets, or set it in an insulated cooler packed with towels.
3. Leave it: rice 1 hour, oats overnight, beans 2–3 hours.
4. Reheat to a boil before serving if it has cooled below hot (food safety).

This cuts fuel use by half or more.

Other fuel savers

- **Soak** beans and grains overnight.
- **Pressure cooker:** dried beans in about 30 minutes instead of 2 hours.
- **Lid on** every pot. Smallest pot that fits. Flame no wider than the pot.
- **Cook once, eat twice:** cook a double batch in the evening, eat cold or rewarmed at lunch (within safe time limits).
- **Sprouted lentils** and soaked oats need no cooking.

Dutch oven with coals

Bake bread or stew with charcoal: for a 12" oven at about 350°F, a common rule is roughly 8 coals underneath and 16 on the lid. Turn the oven a quarter turn and the lid the other way every 15 minutes to avoid hot spots.

> **Outdoors only.** Coals and stoves make carbon monoxide.

Stop the bleeding, *clear the airway.*

This page is a reminder, not a course. Book a hands-on class (Red Cross, American Heart Association, "Stop the Bleed") for every adult. Practicing on a manikin once makes a huge difference.

First: check the scene, then call

Make sure you won't get hurt too (fire, wires, traffic, CO). Call or send someone to call 911. Put on gloves if you have them.

Severe bleeding

1. **Press hard** directly on the wound with a cloth or gauze, with both hands, and keep pressing.
2. **Pack** deep wounds (thigh, armpit, groin): stuff gauze or clean cloth into the wound, then press hard for several minutes.
3. **Tourniquet** for an arm or leg if pressure doesn't stop life-threatening bleeding: 2–3 inches above the wound (not on a joint), tighten until bleeding stops, **write the time** on it. Don't loosen it.
4. Keep the person warm and lying down. Get help.

Burns

- Cool with **cool running water for 10–20 minutes**. No ice, butter or creams.
- Remove rings and tight clothing near the burn before swelling.
- Cover loosely with a clean non-stick dressing or plastic wrap.
- Get help for burns on a child, on the face, hands, feet, genitals or joints, larger than the person's palm, or deep (white, leathery).

Choking

WHO	WHAT TO DO
Adult or child over 1	If they can't cough, speak or breathe: **5 back blows** between the shoulder blades, then **5 abdominal thrusts** (Heimlich), repeat.
Infant under 1	Face down along your forearm, head lower: **5 back blows**. Turn face up: **5 chest thrusts** with 2 fingers on the breastbone. Repeat. **No** abdominal thrusts.
If they go unresponsive	Start CPR. Look in the mouth before breaths; remove only what you can see.

CPR (unresponsive, not breathing normally)

- Call 911 (or have someone call) and get an AED if there is one.
- Push **hard and fast in the center of the chest**: 100–120 per minute. Adult about 2 inches deep; child about 2 inches; infant about 1½ inches with 2 fingers or two thumbs.
- If trained: 30 compressions, 2 breaths. If not trained or unwilling: hands-only CPR for adults is better than nothing.
- For children and infants, breaths matter more: learn them in a class.
- Don't stop until help arrives, they breathe, or you can't continue.

> **Recovery position:** breathing but unresponsive? Roll them on their side, top knee bent, head tilted back slightly so vomit drains out.

Clean it, splint it, *watch it.*

Cuts and wounds

1. Wash your hands, then gloves.
2. Stop the bleeding with pressure.
3. **Irrigate** with lots of clean (treated) water from a syringe or squeeze bottle. This is the most important step to prevent infection.
4. Remove dirt and splinters with clean tweezers.
5. Thin layer of antibiotic ointment; close small straight cuts with closure strips; cover with a clean dressing.
6. Change the dressing daily, or when wet or dirty.

> **Get help for:** deep or gaping wounds, wounds that won't stop bleeding, animal or human bites, punctures from rusty or dirty objects (ask about tetanus), and any wound with spreading redness, red streaks, pus, swelling, fever or worsening pain.

Sprains and possible fractures

- **Rest, ice (wrapped, 20 min at a time), compression, elevation.**
- Splint in the position you find it: pad it, and include the joint above and below. Check fingers/toes stay warm and pink.
- Possible broken bone, neck or back injury, or bone through skin: don't move the person unless they're in danger. Get help.

Know the emergencies

SIGN	COULD BE
Face drooping, arm weak, speech slurred	**Stroke**: note the time, call 911
Chest pressure, pain to arm/jaw, sweating, short of breath	**Heart attack**: call 911
Swelling of lips/tongue, wheezing, hives after a food or sting	**Anaphylaxis**: epinephrine if prescribed, 911
Headache, dizziness, nausea in several people	**Carbon monoxide**: everyone out
Confusion, hot skin, very high temperature	**Heat stroke**: cool now, 911
Shivering stops, confused, slurred speech	**Severe hypothermia**: warm gently, 911
Baby under 3 months, temp 100.4°F+	Needs a doctor **now**

Without a doctor nearby

- Keep a written log of symptoms, temperature, fluids in and out, medicines and times.
- Fluids: keep sick people drinking small sips often; oral rehydration solution for diarrhea and vomiting (Book 1, p. 13).
- Isolate sick people in one room if you can; one carer; extra handwashing.
- Use the radio to find working clinics, medical stations or nurse lines.

> **Book the classes now.** Write the dates on the skills tracker (p. 53). Infant CPR classes are often run by hospitals and fire departments.

Six knots *tie down almost everything.*

Grab 6 feet of cord and tie each of these ten times, then once with your eyes closed. Words help you remember; a short video helps you learn. Look up each by name now, while the internet works.

1 · Bowline FIXED LOOP

A loop that won't slip or jam, and unties after heavy loads. For tying a rope around a post, tree or person (rescue).

1. Make a small overhand loop in the standing part (the "rabbit hole").
2. The end comes up through the hole,
3. goes around behind the standing part ("around the tree"),
4. and back down the hole. Pull tight.

2 · Taut-line hitch ADJUSTABLE

A loop that slides to tighten but holds under load. For tarp guy lines and clotheslines.

1. Pass the end around the stake or post.
2. Wrap it twice around the standing part, inside the loop, working toward the stake.
3. Make one more wrap outside the loop, then tuck it through. Slide to tension.

3 · Clove hitch QUICK ATTACH

Fast way to tie a rope to a pole or rail; start of lashings.

1. Wrap the end around the pole.
2. Cross over the first wrap and go around again.
3. Tuck the end under the second wrap. Add a half hitch to make it secure.

4 · Trucker's hitch CINCH A LOAD

Pulls a line very tight: loads on a car roof, ridgelines, tarps on a roof.

1. Tie a fixed loop in the standing part (a slipped overhand or figure-eight loop).
2. Pass the end around the anchor and back through the loop.
3. Pull down hard (it works like a pulley), then lock with two half hitches.

5 · Sheet bend JOIN TWO ROPES

Joins two ropes, even of different thickness. Much safer than a square knot.

1. Make a U-bend (bight) in the thicker rope.
2. The thin rope comes up through the bight, wraps around both legs of it,
3. and tucks under itself. Pull tight.

6 · Two half hitches TIE OFF

Simple, strong tie-off to a ring, post or the end of another knot.

1. Pass the end around the post.
2. Wrap it around the standing part and through (one half hitch).
3. Repeat in the same direction. Snug down.

Bonus: square knot (right over left, left over right) for bandages and bundles only. It can slip under load—never for joining ropes that hold weight.

Never trust a knot with a life unless you've practiced it and it's the right knot. Climbing and rescue need training and proper rope.

Trap heat, *stop wind, stay dry.*

You lose heat through cold air, cold surfaces, wind and wet clothes. Every warmth skill blocks one of those. Practice the one-room setup on a cold night before you need it.

Winterize one room (2 hours)

1. Choose the room (Book 1, p. 15). Measure the windows.
2. Seal window frames with removable weatherstripping or painter's tape and plastic film.
3. Hang a heavy blanket over the window and the doorway; tack or tension-rod it at the top.
4. Rugs, foam mats or cardboard on the floor; nobody sleeps directly on a cold floor.
5. Roll towels against door gaps.
6. On sunny days, open the window coverings on the sunny side; close at sunset.
7. Put a thermometer in the room and one outside.

An indoor tent (adults & older kids)

A camping tent set up in the warm room traps body heat in a smaller space. It's for adults and older children only: babies sleep in their own crib with a sleep sack, never in a tent with soft bedding.

Layering: the rule of three

- **Base:** wool or synthetic against the skin. **Cotton kills** warmth when damp.
- **Insulation:** fleece, wool sweater, down vest.
- **Shell:** windproof and waterproof jacket outdoors.
- Hat, scarf, dry socks. Take off a layer *before* you sweat when working.

Sleeping warm

- Insulation **under** you matters as much as on top: a foam pad under the sleeping bag.
- Change into dry clothes and socks before bed. Wear a hat.
- Eat a snack and drink something warm before sleep.
- Pee before bed, so you don't have to get up in the cold.
- A bottle of hot water wrapped in a sock warms an adult's bag (never for babies or in a crib).

Stay dry

- Wet clothes lose most of their insulation. Change out of them right away.
- Dry clothes on a rack in the warm room, or in sun and wind outdoors.
- Use a tarp as a covered work area outside so chores don't soak you.

Stranded in the car

- Run the engine about 10 minutes an hour for heat, with a window cracked and the tailpipe clear of snow.
- Blankets, hats and body heat. Everyone in the back together.
- Tie bright cloth to the antenna if stranded.

Summer: stay cool

- Lowest, shadiest room. Close blinds on sunny sides by day; open windows at night.
- Wet towels over a fan; cool, damp cloths on neck and wrists.
- Work early and late; rest in the heat of the day.

Keep the weather *and the water out.*

Know your shutoffs (1 hour, do it now)

- [ ] **Water main:** find it, turn it off and on once, tag it
- [ ] **Gas meter valve:** find it, hang the wrench there (only turn off if you smell gas)
- [ ] **Breaker box:** label every breaker; know the main
- [ ] **Water heater:** gas or power switch, cold inlet valve, drain valve
- [ ] **Each toilet and sink:** small shutoff valves underneath
- [ ] Show every adult and teen. Mark them with glow tape

Board a broken window

1. Gloves and eye protection. Tape an X over cracked glass to hold it.
2. Remove loose shards carefully, from the top down, into a box.
3. Cut plywood 2–4 inches larger than the opening on each side.
4. Screw (don't nail) into the frame every 12 inches, so you can remove it later.
5. Seal edges with tape or caulk against wind and rain.

Stop a leaking pipe

1. Shut off the water (local valve or main), open a tap to drain pressure.
2. Dry the pipe. Wrap self-fusing silicone tape tightly, stretched, well past the leak; or fit a pipe repair clamp over a rubber patch.
3. Turn water back on slowly and check. It's a temporary fix until a plumber can repair it.

Tarp a damaged roof

> **Only if it's safe:** dry, calm weather, a sound roof deck, a helper holding the ladder, no power lines nearby. Many people are badly hurt falling off roofs after storms. If in doubt, tarp from inside the attic, or wait for a professional.

1. Use a tarp big enough to cover the damage and go **over the ridge** by at least 4 feet, so water runs off on top of it.
2. Wrap the tarp edges around 2×4 or 1×3 boards ("battens") and screw the boards through to the roof deck.
3. Batten all edges so wind can't get under it. Weight with sandbags if you can't screw down.
4. Inside: put buckets under drips, move valuables, and poke a small hole in a bulging wet ceiling to drain it into a bucket (it's safer than a collapse).

Fix a stuck or broken door

- Sagging door: tighten hinge screws; replace short top-hinge screws with 3-inch screws into the stud.
- Lock won't latch: loosen the strike plate, shift it, retighten.
- Door swollen shut by damp: plane or sand the edge once it dries a little.

Seal drafts

Hold a lit incense stick (or a damp hand) near window and door edges on a windy day: smoke that moves or cold air marks a draft. Fill with caulk, foam strips or rope caulk.

> **Practice day:** board one window, tarp the shed roof, shut the water off and back on, and find every shutoff by headlamp.

Fresh food by *month two.*

A 90-day pantry is mostly dry and canned. A few pots of fast crops add vitamins, fresh flavor and something for kids to care for. Start a small garden now: gardening takes a season to learn.

Fast crops (days from seed to first harvest)

CROP	DAYS	NOTES
Sprouts (lentil, mung, alfalfa)	3–5	A jar on the counter, no soil, no sun
Microgreens (radish, pea shoots)	7–14	A tray on a windowsill
Radishes	25–30	Cool weather; great for kids
Leaf lettuce, baby greens	30–45	Cut and it grows back
Spinach	35–45	Cool weather
Bush beans	50–60	Warm weather, protein
Zucchini / summer squash	45–55	One plant feeds a family
Kale, Swiss chard	50–65	Hardy, harvest for months
Peas	60–70	Cool weather
Potatoes	70–120	Grow in buckets or bags
Herbs (basil, parsley, chives)	30–60	Flavor for plain food

Days vary by variety and climate. Check your local planting dates with your county extension office.

Sprouting (the 5-day vegetable)

1. 2 tablespoons of lentils or mung beans in a clean jar; cover with treated water; soak 8–12 hours.
2. Drain, rinse, drain well. Tilt the jar upside-down with a mesh lid.
3. Rinse and drain 2–3 times a day with treated water.
4. Eat in 3–5 days when tails are ½ inch. Raw sprouts can carry germs: cook them for young children, pregnant people and anyone sick.

Container garden basics

- Containers with drainage holes: 5-gal buckets, grow bags, storage tubs.
- Potting mix, not garden soil (it compacts in pots).
- 6+ hours of sun for most vegetables; leafy greens tolerate partial shade.
- Water at the base, in the morning. Gray water from rinsing (no bleach, little soap) works for non-root crops.
- Feed with compost or a slow-release fertilizer.

Seed stock

- ☐ Seeds you know grow in your climate (open-pollinated keep true for saving)
- ☐ Stored cool, dry and dark in a sealed jar; most keep 2–4 years
- ☐ Potting mix, pots, a watering can, labels

> **Kids' job:** a toddler can water a radish pot and pick lettuce. Growing things is great for morale in a long outage.

Dry it, store it, *waste nothing.*

Drying

Drying is the simplest preservation without power.

- **Sun drying** works in hot (85°F+), dry, sunny weather: fruit like apples, tomatoes, herbs. Thin slices on screens, covered with cheesecloth against insects, brought in at night.
- **Solar dehydrator:** a dark box with a clear top and vents; faster and cleaner than open air. Build one from a window and plywood.
- Herbs: hang small bunches upside down in a dry, airy place.
- Meat jerky needs careful, tested methods and high heat to be safe—not a beginner project in an outage.
- Store dried food in airtight jars. Any mold = throw it out.

Cool storage (no power)

- Potatoes, onions, carrots, apples and winter squash keep for weeks to months somewhere cool, dark and dry (an unheated room, a basement, a crawlspace).
- Keep potatoes and onions apart; don't wash root vegetables before storing.
- In winter, a cooler in an unheated garage holds food cold—check with a thermometer and watch for freezing.

Home canning

Canning needs heat, time and tested recipes. If you can: follow USDA / National Center for Home Food Preservation recipes exactly. Low-acid food (vegetables, beans, meat) must be **pressure canned**; a water bath isn't safe for them because of botulism. Learn it now, not during the outage.

Baking from scratch

Skillet flatbread (no oven, no yeast)

2 cups flour, 1 tsp baking powder, ½ tsp salt, 2 tbsp oil, about ¾ cup water. Knead 2 minutes, rest 10 minutes, divide into 6 balls, roll thin. Cook in a dry hot skillet 1–2 minutes per side until puffed and spotty.

Stretch the pantry

- Plan meals weekly from the inventory; eat the most perishable first.
- Rice + beans together make a complete protein.
- Save cooking water from pasta or vegetables for soup (if water is short).
- Spices, bouillon and hot sauce make the same food bearable for 90 days.

Foraging, fishing, hunting

Never eat a wild plant or mushroom unless you are 100% certain of its identity from an expert or reliable field guide. Deadly look-alikes are common. Fishing and hunting rules, licenses and seasons still apply, and wild game must be handled and cooked carefully.

Learn locally: county extension offices teach canning, gardening and food safety classes, often free.

Paper map, compass *and the sun.*

GPS, traffic apps and phone signals may all fail. If you need to reach a water point, hospital or relative's house, you'll navigate the old way. Practice it on a normal day.

Read a paper map

- **Orient it:** turn the map so north on the map points north in the real world. Then roads on the map line up with roads in front of you.
- **Scale:** check the scale bar. Measure distance with a string or the edge of paper.
- **Landmarks:** rivers, rail lines, highways, water towers, big buildings.
- **Mark it up now:** home, meeting places, hospitals, fire stations, shelters, water points, 2 routes out (Book 1, p. 32).

Use a compass

1. Hold it flat, at chest height, away from metal and cars.
2. The red end of the needle points to magnetic north.
3. **To follow a direction:** turn the dial so the bearing you want is at the index line, then turn your body until the red needle sits inside the orienting arrow ("red in the shed"). Walk where the direction-of-travel arrow points.
4. Pick a landmark on that line, walk to it, repeat.
5. Magnetic north differs from map north by a few degrees in most of the US ("declination"; it's printed on topo maps). For town navigation it rarely matters.

Find direction without a compass

Shadow stick: push a stick upright in sunny, level ground. Mark the tip of its shadow with a pebble. Wait 15–20 minutes and mark the new tip. A line from the first pebble to the second points roughly **west → east**. Stand with the first on your left and the second on your right: you're facing about north.

- The sun rises roughly in the east and sets roughly in the west.
- In the US, at midday the sun is to the south.
- At night, the North Star sits almost due north: follow the two outer "pointer" stars of the Big Dipper's cup.

On the move

- Tell someone (whiteboard + radio) where you're going, by which route, and when you'll be back.
- Travel in daylight and in pairs.
- Avoid flooded roads: 6 inches of moving water can knock you down, 12 inches can carry away a car. Turn around.
- Note landmarks on the way out; turn around and look back often—routes look different in reverse.

Practice: drive or walk both evacuation routes once with the paper map and no phone. Have older kids navigate.

Be heard, *be found.*

Signals everyone should know

SIGNAL	MEANS
3 whistle blasts (or flashes, shots of a horn)	Help / distress
2 blasts (answer)	"I hear you, coming" (common convention)
SOS: · · · — — — · · ·	Distress, in light or sound
Large X on the ground	Need medical help (ground-to-air)
V on the ground	Need assistance
Bright cloth on door or antenna	Agree a code with neighbors (e.g. orange = need help)

Signal mirror

Hold the mirror near your eye, stretch your other arm toward the target with two fingers in a V, and tilt the mirror until the bright spot of reflected sunlight lands on your fingers, then lift them away. Flash in threes. Visible for miles in sun.

Radio basics

- **Listen before you talk.** Press the button, wait a second, then speak.
- Say who you're calling, then who you are: "Garcia house, this is Miller house."
- Short and clear. Say "over" when you finish, "out" when done.
- Plan check-ins: same channel, same time (e.g. 8:00 and 18:00).
- Don't share supplies, plans or who's home alone on the radio—anyone can listen.

Get a license, go further

RADIO	LICENSE	RANGE
FRS	None	Street / neighborhood
GMRS	FCC license, no test, family-wide	Several miles; more with repeaters
Amateur (ham)	Technician exam (multiple choice)	Town to region; emergency nets

Many areas have amateur radio emergency groups (ARES, RACES) that run nets during disasters. A local club will help you study and pass the Technician exam, often in a weekend course.

When phones half-work

- Text instead of calling; keep messages short.
- Try at off-peak times (early morning, late night).
- Update one person (the out-of-area contact) who passes it on.
- Emergency alerts may still reach phones even when calls fail.

Write a message that works

WHO you are · **WHERE** (address, cross streets) · **WHAT** happened · **HOW MANY** people and their condition · **WHAT YOU NEED** · **WHEN** (time). Read it back once.

Practice: a weekly radio check with the neighbors, even before any outage. It keeps batteries charged and everyone fluent.

Clean habits, *open eyes.*

The 3-basin dishwash

1. **Scrape** food scraps into a sealed bin.
2. **Wash** in basin 1: hot soapy water.
3. **Rinse** in basin 2: clean water.
4. **Sanitize** in basin 3: **1 tablespoon unscented bleach per gallon** of water, soak at least 1 minute.
5. **Air dry** on a rack. Don't towel dry.

Baby bottles: boil 5 minutes when you can, or use single-use liners.

Handwashing, properly

Wet, soap, scrub 20 seconds (backs of hands, between fingers, under nails), rinse, dry. Teach kids to sing "Happy Birthday" twice. Every time: after the toilet, after diapers, before food, after trash and animals.

Body care

- Daily sponge bath for armpits, groin, feet—rashes and infections start there.
- Brush and floss daily; dental pain without a dentist is miserable.
- Dry feet and change socks daily, especially in wet or cold weather.
- Cut nails short to keep germs out.

Situational awareness

Awareness isn't fear. It's simply noticing what's normal, so you spot what isn't, early enough to avoid trouble.

- **Know the baseline:** who usually walks by, which cars belong, how loud the street is.
- **Notice changes:** new cars cruising slowly, people looking into yards, sudden quiet or crowds.
- **Head up, phone down** when you're out. Pause at doors and corners to look.
- **Have an exit:** in any crowd, line or building, know how you'd leave.
- **Trust the uneasy feeling.** Leave early; you don't need a reason.
- **Go out in daylight, in pairs,** with a radio, and tell someone your plan.

Avoid, then de-escalate

The best fight is the one you never have. Avoid tense places (fuel lines, crowds at distribution points late in the day). If confronted: distance, calm voice, a barrier, and a way out. Give up things before you risk people (Book 1, p. 24).

Kids' safety skills

- ☐ Knows full name, parents' names, address, a phone number
- ☐ Knows the family code word and never goes with someone who doesn't know it
- ☐ Knows "3 whistle blasts" and where the meeting places are
- ☐ Never answers the door; tells an adult
- ☐ Knows not to touch wires, fuel, lighters, medicine or strange objects

Stop. Think. *Then act.*

In emergencies, people rarely fail because they lack gear. They fail because fear makes them rush, freeze or argue. Calm is a skill, and like any skill it improves with practice.

S.T.O.P.

S	**Stop.** Don't move or decide for a moment. Breathe slowly: in for 4, hold 4, out for 4, hold 4.
T	**Think.** What's the danger right now? What do I already have? What are the options?
O	**Observe.** Look around: people, weather, time of day, resources, exits.
P	**Plan.** Choose one next step, do it, then reassess.

The rule of threes (rough guide)

YOU CAN SURVIVE ABOUT	WITHOUT
3 minutes	Air (or in toxic air: CO, smoke)
3 hours	Shelter in harsh cold or heat
3 days	Water
3 weeks	Food

It's not exact—babies and the sick have far less margin—but it sets priorities: **air, then shelter and warmth, then water, then food.** Supplies never come before those.

Leading a household through it

- **One decision-maker** per situation, agreed in advance (e.g. one parent for medical, one for the house). Argue later.
- **Daily 10-minute meeting:** what happened, what's low, tomorrow's jobs, any worries.
- **Write it down:** lists and logs take load off tired brains.
- **Decide early.** Waiting for perfect information is a decision too—usually the worst one. Use the leave triggers (Book 1, p. 25).
- **Rest is a supply.** Exhausted people make dangerous mistakes. Take turns.

Managing fear and stress

- Routine: same wake, meal and sleep times.
- Movement: a daily walk, stretching, chores.
- Limit news to two radio checks a day.
- Talk about feelings—kids copy how adults cope.
- Faith, music, stories, games, small celebrations.
- Reach out: neighbors, support groups, the **988** crisis line when phones work.

> **Drills beat worry.** A family that has practiced a lights-off weekend, a CO alarm drill and a safe-room drill feels calmer when it's real, because they've done it before.

TEACH THE KIDS

Every age *can help.*

Children who have jobs feel safer and complain less. Teach skills as games, praise effort, and always supervise anything involving fire, tools, water or heights.

AGE	THEY CAN LEARN	JOBS IN AN OUTAGE
2–3	Their name; "stay with a grown-up"; where the flashlight lives; washing hands with help; "hot—don't touch"	Carry towels and diapers, "check" glow sticks, water a plant, put toys away, help feed the pet
4–6	Full name, parents' names, address; the code word; 3 whistle blasts; never answer the door; what a CO alarm sounds like; to go outside when it beeps	Fill a cup from the water jug, set out plates, sort socks, help in the garden, read with a sibling
7–10	A phone number by heart; using a radio; reading a map; basic first aid (pressure on a cut, cool water for a burn); sheet and square knots; laundry by hand	Water log, charging rota, laundry rinsing, gardening, helping cook with an adult, sprouts jar
11–14	Treating water with bleach; fire building with supervision; compass; taut-line and bowline; radio check-ins; using an extinguisher	Treat and log water, run the radio check, help with dishes and handwashing station, teach younger kids
15+	CPR and first aid class; shutting off utilities; generator safety; tool use; navigation; a GMRS radio	Adult jobs with oversight: hauling water, fire, cooking, watch shifts with an adult, repairs

Make it a game
"Lights-out hide and seek" with headlamps, a knot race, a map treasure hunt, "who can find the water shutoff?"

Practice the scary bits calmly
Press the CO alarm test button together. Walk to the meeting place. Practice the safe room as a "fort".

Give them a badge
A sticker on the skills tracker (p. 53) for every skill learned. Kids love proof.

Always supervise: fire, stoves, sharp tools, ladders, buckets of water near toddlers (drowning risk), batteries (button batteries are deadly if swallowed) and anything with fuel.

Needle, thread, flour, *patience.*

Ninety days wears out knees, socks, buttons and patience with plain food. Simple making and mending skills keep clothes wearable and meals interesting.

Three hand stitches

STITCH	FOR	HOW
Running	Quick seams, gathering	In and out in a straight line, small even stitches
Backstitch	Strong seams (pants, bags)	Each stitch goes back to meet the end of the last one
Whipstitch	Edges, hems, patches	Over the edge and through, looping around

Patch a hole

1. Cut a patch 1 inch bigger than the hole all round; round the corners.
2. Fold the patch edges under, pin it over (or behind) the hole.
3. Whipstitch around the edge with small stitches. Knot well on the inside.

Sew on a button

1. Double the thread, knot the end.
2. Come up through the fabric and a hole, down through the opposite hole; put a pin on top of the button as a spacer.
3. 6–8 passes, remove the pin, wrap thread under the button to make a "shank", knot inside.

Darn a sock

Stretch the hole over a darning egg or a lightbulb-shaped object. Weave rows of thread up and down across the hole, then weave across those rows, over and under, like a tiny basket.

Dutch oven bread

One loaf: 3 cups flour, 1½ tsp salt, ½ tsp instant yeast, 1½ cups warm water.

1. Mix to a shaggy dough. Cover and leave 12–18 hours at room temperature.
2. Shape into a ball on a floured surface; rest 1–2 hours.
3. Heat the Dutch oven over coals (p. 22) or on the camp stove outdoors.
4. Bake covered about 30 minutes, then uncovered 10–15 minutes, until it sounds hollow when tapped.

Pancakes from the pantry

1 cup flour, 1 tbsp sugar, 2 tsp baking powder, ¼ tsp salt, 3 tbsp powdered milk, 1 cup water, 1 tbsp oil. Stir until just mixed (lumps are fine). Cook on an oiled skillet until bubbles pop, flip.

Other skills worth a weekend

- [ ] Sharpening a knife on a stone (p. 17)
- [ ] Changing a car tire and plugging a puncture
- [ ] Fixing a bike flat (p. 16)
- [ ] Cutting hair with manual clippers
- [ ] Basic carpentry: a shelf, a sawbuck, a drum stand
- [ ] Cooking 5 meals only from your pantry list

> **Trade skills with neighbors.** If one person sews and another fixes bikes, swap. Skills are the best barter there is.

One skill a weekend, *ready in three months.*

Two to four hours per weekend. Tick it off, write the date, and add a sticker for the kids on the skills tracker.

#	WEEKEND	DO THIS	DONE
1	**Shutoffs & safety**	Find and label every shutoff; test CO and smoke alarms; extinguisher drill; glow tape	
2	**Water day**	Treat water 4 ways; pump a drum; drain a gallon from the water heater; fill and label jugs	
3	**First aid class**	Adults take a CPR/first aid class (incl. infant); restock the kit together	
4	**Fire & cook-out**	Build a fire 3 ways; cook dinner on the camp stove; try retained-heat rice	
5	**Toilet & laundry**	Set up the bucket toilet and handwash station; do one bucket load of laundry	
6	**Knots & tarps**	Learn the 6 knots; rig a tarp shelter in the yard; hang a clothesline	
7	**Fix-it day**	Pre-cut window boards; board one window; tarp a shed; patch a hose; reinforce a door	
8	**Power day**	Run the house on the solar station for a day; test the generator outdoors; multimeter basics	
9	**Map & radio**	Drive both routes with a paper map; GMRS license; radio check with neighbors	
10	**Garden & pantry**	Plant a container garden; start sprouts; cook 3 meals only from storage food	
11	**Make & mend**	Patch, sew a button, darn a sock; bake Dutch oven bread; sharpen the knives	
12	**Lights-off weekend**	Lights and outlets off at the breakers Friday 6 pm to Sunday 6 pm (fridge, freezer and medical circuits stay on). Live on the kit. Write what was missing	

After weekend 12, fix every gap you found, then repeat one practice day each season to keep skills fresh.

On the lights-off weekend: leave the fridge, freezer and any medical device on their circuits, keep the CO alarms tested, and keep a phone charged for emergencies. The point is practice, not risk.

PART 3

Step by step, *picture by picture.*

Words help you remember a skill. Pictures help you get it right the first time, in the dark, with cold hands. Each page is one job in six steps. Five are new skills (17–21); the rest add pictures to skills from Part 2.

38 Bleeding control

39 Siphon, pump, filter water

40 Tippy tap & bucket toilet

41 Laundry by hand NEW

42 Shut off gas, water, power

43 Run a generator safely NEW

44 Keep food cold NEW

45 Fire lays

46 Sharpen a blade

47 Tarp shelter NEW

48 Find north

49 Jump-start a car NEW

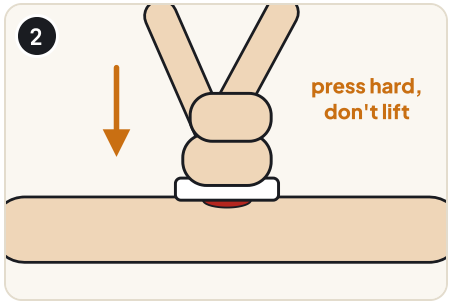
50 Fix a flat tire NEW

Press, pack, *tourniquet.*

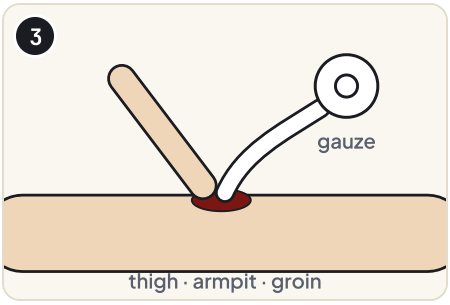
Severe bleeding can kill in five minutes, before help arrives. These are the basic steps taught in bleeding-control classes. They are easy to learn and hard to remember under stress, so look at the pictures again before your class.



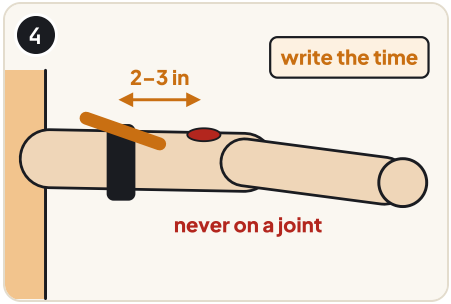
Safe, call, gloves. Check that you won't get hurt too. Call 911 or send someone to call. Put on gloves if you have them.



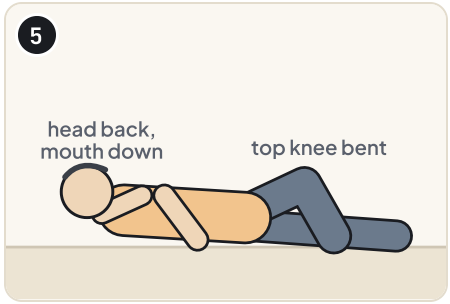
Press hard. Put a cloth on the wound and push straight down with both hands and your weight. Don't lift it to look.



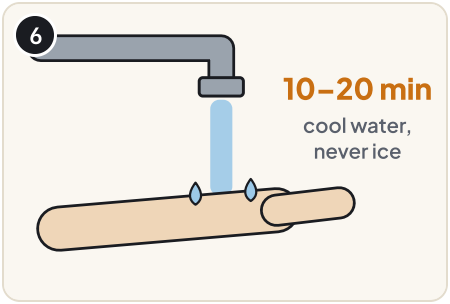
Deep wound? Pack it. Push gauze or clean cloth tightly into the wound with your fingers, then press hard for at least 3 minutes.



Arm or leg still bleeding? Tourniquet. Put it 2–3 inches above the wound, never on a joint. Twist until the bleeding stops, lock it, and write down the time.



Breathing but not waking? Recovery position. Roll them onto their side, top knee bent, head tilted back so vomit drains. Keep checking their breathing.



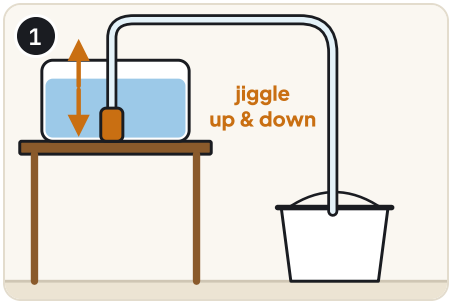
Burns: cool water. Run cool water over the burn for 10–20 minutes. No ice, butter or creams. Take off rings before it swells.

These pictures remind you, they don't train you. Take a 2-hour Stop the Bleed® class (stopthebleed.org) and practice on a real tourniquet. Belts and cords used as tourniquets usually don't work. Leave a tourniquet on until a medic takes it off.

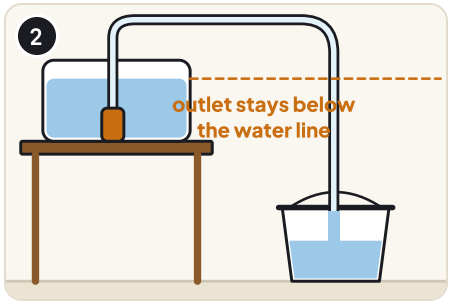
Watch for shock: pale, cold, clammy skin, fast breathing, confusion. Lay them flat, keep them warm with a blanket under and over them, give nothing to eat or drink, and get help fast.

Siphon it, pump it, *filter it.*

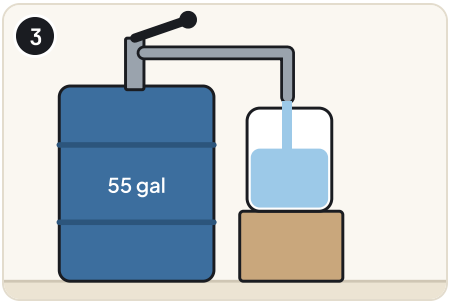
Stored water is heavy and dirty water makes people sick. A $10 jiggle siphon, a drum pump and two buckets move it and clean it without spilling, lifting or using your mouth.



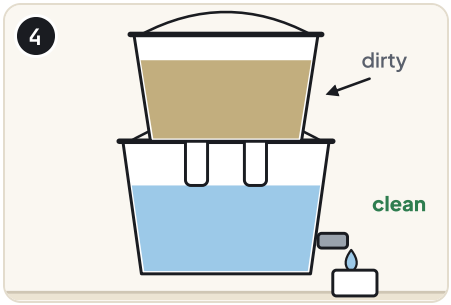
Start the siphon. Put the end with the valve in the full container, held higher than the empty one. Jiggle it up and down until water flows.



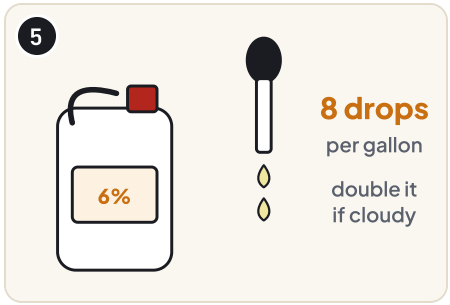
Gravity does the rest. Keep the hose end lower than the water level. To stop the flow, lift the hose end above the water line.



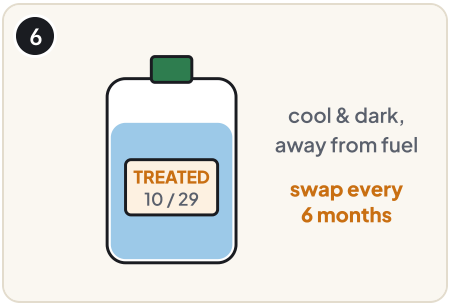
Drum pump. Screw a hand pump into the drum's bung and pump into jugs. Never tip a 55-gallon drum: full, it weighs about 460 lb.



Two-bucket filter. Filter elements in the bottom of the top bucket drip clean water into the lower one. Strain muddy water through a cloth first.



Dose the bleach. Plain, unscented 6% bleach: 8 drops per gallon of clear water (6 drops if it's 8.25%). Stir and wait 30 minutes. It should smell faintly of chlorine.



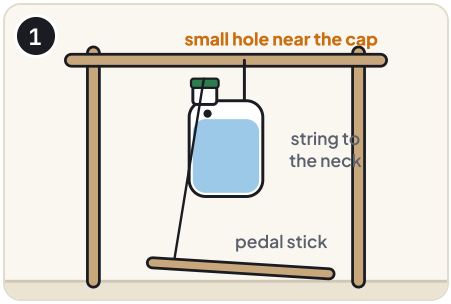
Label and store. Write "treated" and the date on the cap tape. Store it cool and dark, away from fuel and chemicals. Use it or replace it every 6 months.

Never start a siphon with your mouth, for fuel or dirty water. Gasoline in the lungs is a medical emergency. Keep one hose for water only (label it "WATER") and a separate one for fuel.

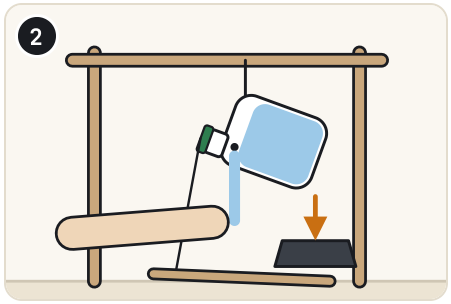
Practice with tap water: siphon a full jug into a bucket, pump 5 gallons from a drum and time the filter. Then you know how long a day's water takes: about 1 gallon per person per day for drinking and cooking.

Wash hands, *handle waste.*

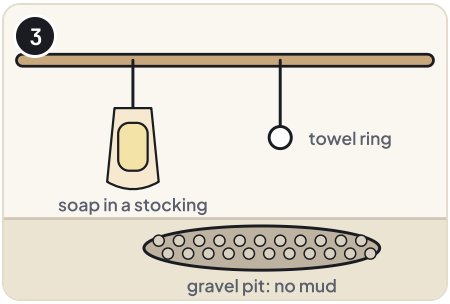
Without running water, dirty hands and human waste spread illness fast. A tippy tap washes hands with very little water. A bucket toilet with cover material doesn't smell and can be handled safely.



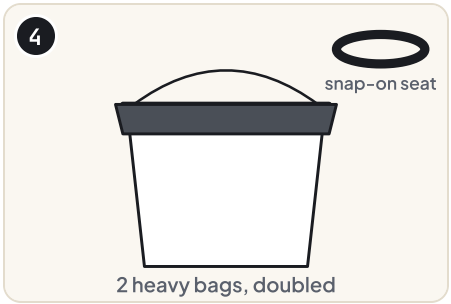
Build a tippy tap. Two forked sticks and a crossbar. Hang a jug by its handle and tie a string from the neck to a pedal stick. Poke a small hole near the cap.



Step and wash. Press the pedal: the jug tips and a thin stream pours out. Soap up, then rinse for 20 seconds. Both hands stay clean, and a gallon lasts about 40 washes.



Soap and a soak pit. Hang soap in an old stocking so it stays clean and doesn't get lost. Dig a shallow pit of gravel under the tap so it doesn't get muddy.



Line the bucket. A 5-gallon bucket lined with two heavy contractor bags. A snap-on toilet seat makes it comfortable. Keep the lid on between uses.



Cover every time. One scoop of sawdust, cat litter, peat or shredded paper after each use. This stops the smell and the flies.



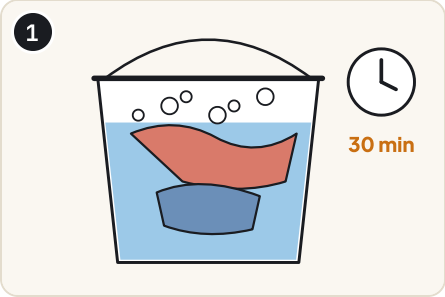
Separate and seal. Pee in its own bucket (it smells much less). When a bag is about a third full (it gets heavy fast), tie it and put it in a lidded bin outside, away from water.

If the sewer is out, don't use the house toilet: waste can back up into the house. Wash hands after every toilet visit and before food, and keep the toilet bucket away from food, water and wells.

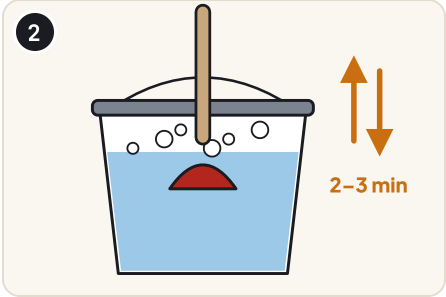
Sewer works but no water? Flush with a bucket: pour 1–2 gallons of used wash water into the bowl in one quick pour. That's enough to flush, and you don't waste clean water.

Bucket, plunger, *clothesline.*

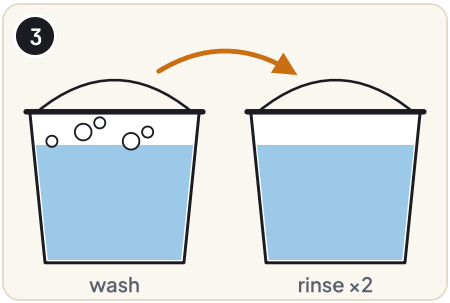
Ninety days without a washing machine means a lot of socks. A bucket with a lid and a clean plunger wash a load in about 10 minutes, using about 5 gallons of water.



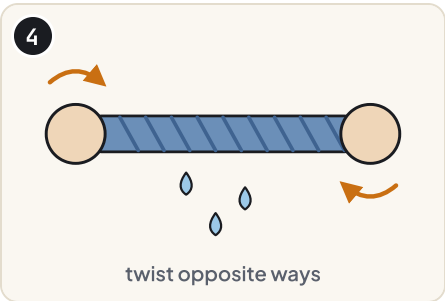
Soak. Fill the bucket halfway with water and add a spoonful of detergent. Add clothes, small loads only. Soak 30 minutes, or overnight for dirty work clothes.



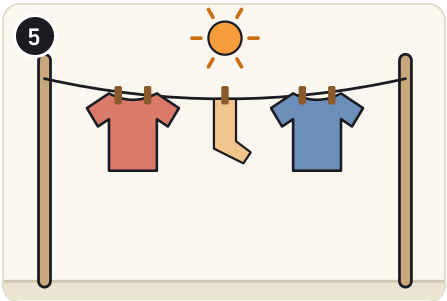
Plunge. Put the lid on with a hole cut for the handle. Pump the plunger up and down for 2–3 minutes. Use a new plunger kept only for laundry.



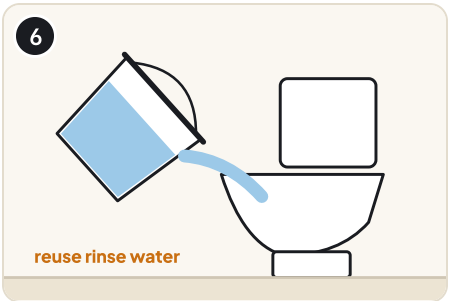
Rinse twice. Squeeze the clothes out, then plunge them in clean water. Repeat until there are no suds. Soap left in clothes makes skin itch.



Wring. Twist each piece in opposite directions with two people or around a post. A mop bucket wringer works even better and is easy on hands.



Hang to dry. In sun and wind, clothes dry in a few hours. Indoors in winter, hang them in the warm room, never close to a heater or stove.



Reuse the water. Last rinse water can be the next load's soak, or flush the toilet. Pour used wash water on bare ground, away from wells and garden vegetables.

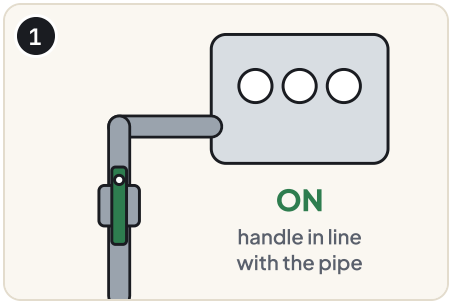
What to wash, and how often

- **Daily:** underwear and socks. Dry feet prevent foot problems.
- **Every 2–3 days:** base layers, kids' clothes, dish towels.
- **Weekly:** towels, bedding (or air it in the sun), work clothes.
- **Outer layers:** brush and air them; wash only when dirty.

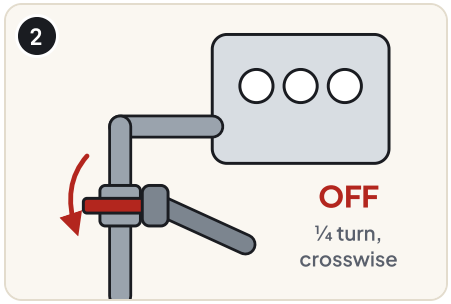
Diapers and anything soiled by illness go in a separate bucket: rinse, soak in detergent, wash, then rinse with 1 tablespoon of bleach per gallon. Wear gloves and wash your hands after.

Find it, turn it, *tag it.*

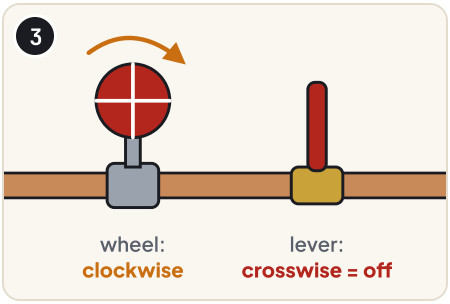
A burst pipe, a gas leak or a power surge when the grid comes back can do more damage than the storm. Find every shutoff today, in daylight, and mark it so anyone can find it in the dark.



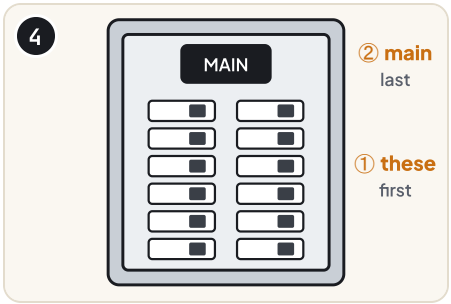
Gas: find the meter valve. On the pipe going into the meter. When the flat handle runs *in line* with the pipe, the gas is on.



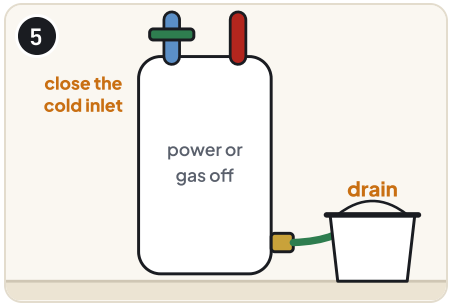
Off: a quarter turn. Use a gas wrench to turn the handle *across* the pipe. Only if you smell or hear gas, or officials say to. Only the gas company turns it back on.



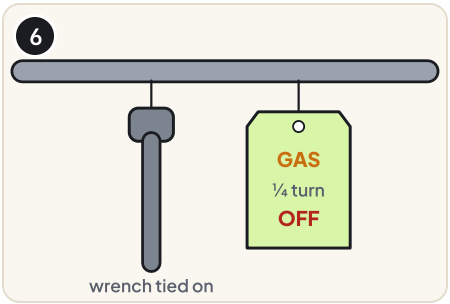
Water main. Usually where the pipe comes in (basement, garage, crawlspace) or in a curb box. A wheel turns clockwise to close; a lever is off when it's across the pipe.



Breaker panel. To shut off: small breakers first, then the main. To restore: main first, then one at a time, a minute apart, so the surge doesn't trip it again.



Water heater = 30–80 gallons of water. Turn off its power or gas, close the cold inlet, open a hot tap upstairs, then drain from the valve at the bottom.



Tag it. A glow-in-the-dark tag on every valve saying what it is and which way is off. Tie the gas wrench right next to the meter.

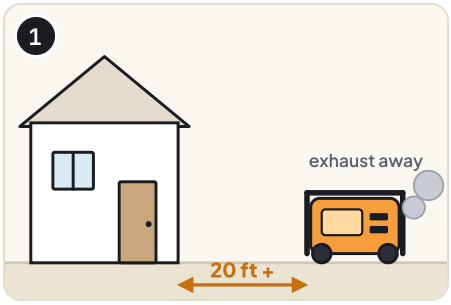
Smell gas (rotten eggs) or hear hissing? Don't touch light switches, phones or flames inside. Get everyone out, then call 911 and the gas company from outside, away from the house. Shut the meter only if it's safe to reach. Never turn the gas back on yourself.

When the power goes out: switch off big appliances (stove, AC, dryer, well pump) so the surge when it comes back doesn't damage them. Leave one lamp on so you know when power is back.

Practice: every adult and teen walks to each shutoff with a headlamp and shows how it works. Write down where each one is and keep the note with the flashlights.

20 feet out, *exhaust away.*

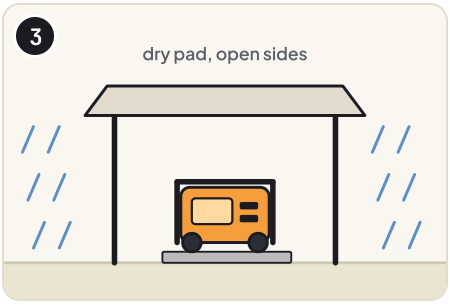
Carbon monoxide (CO) from generators is one of the leading causes of death after storms and blackouts. You can't see or smell CO. Where you put the generator matters more than anything else.



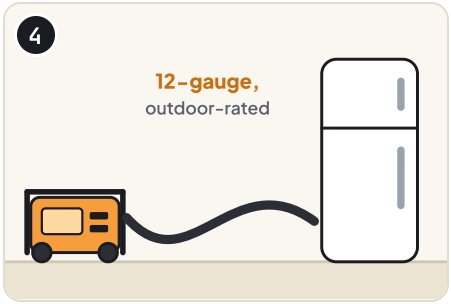
20 feet from the house. At least 20 feet from doors, windows and vents, with the exhaust pointing away. Your neighbors' windows count too.



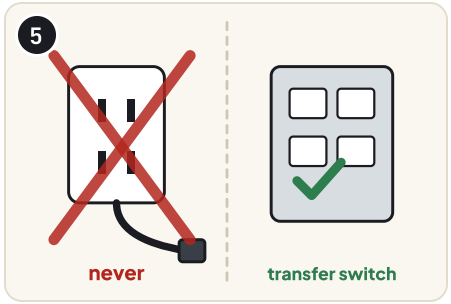
Never inside. Not in the garage, basement, shed, porch or under a carport, even with the doors open. CO builds up faster than fans can clear it.



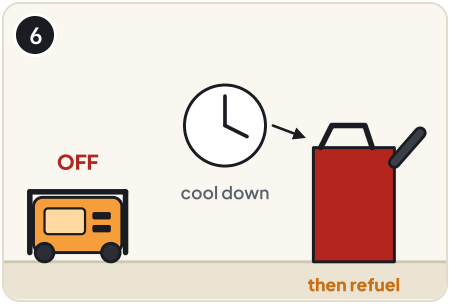
Keep it dry. Rain in the outlets can shock you. Run it on a dry, level surface under an open-sided cover. Never under a closed tent or tarp.



Heavy cords, one at a time. Use outdoor-rated, heavy (12-gauge) cords that aren't longer than you need. Start the generator, then plug in the biggest load first.



Never plug it into a wall outlet. "Backfeeding" can kill line workers and burn the house. Connect to house circuits only through a transfer switch an electrician installs.



Off, cool, then refuel. Fuel spilled on a hot engine can catch fire. Turn it off and let it cool first. Store fuel in approved cans, outside the house.

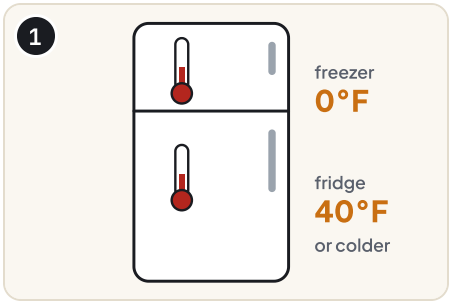
CO alarms on every floor and outside bedrooms, battery-powered or with battery backup. Headache, dizziness, nausea or sleepiness in more than one person: everyone outside into fresh air at once, then call 911.

Daily routine

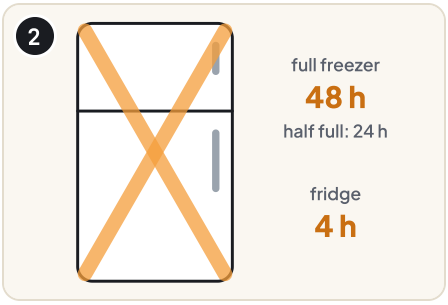
- Check the oil before each start (most need checking every 8 hours of running).
- Run the fridge and freezer in turns (about 1–2 hours each) instead of everything at once.
- Unplug the loads before you shut it down.
- Chain or lock it down: generators get stolen in outages.

Doors shut, *thermometer in.*

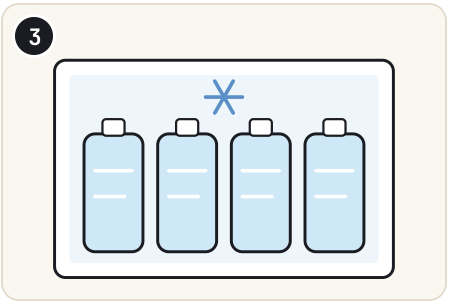
The first days of an outage are a race to eat or save what's in the fridge. Keep the doors closed and use a thermometer, not a guess, to decide what's still safe. (Times from USDA / FoodSafety.gov.)



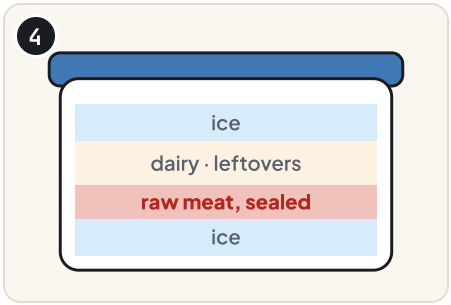
Thermometers in, now. Put a $5 appliance thermometer in the fridge and one in the freezer before any outage. Safe means 40°F or colder in the fridge, 0°F in the freezer.



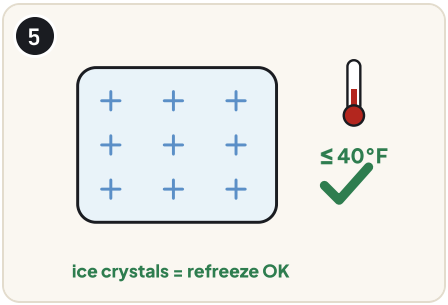
Keep the doors shut. A closed fridge stays safe about 4 hours. A full freezer stays frozen about 48 hours (24 if half full). Tape a note on the door: "Don't open!"



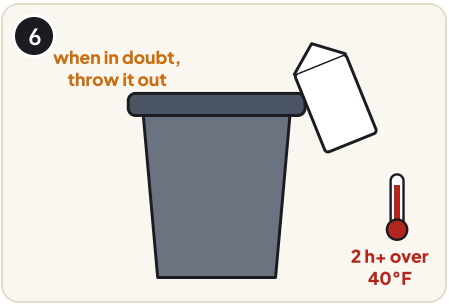
Before the storm: fill the gaps. Freeze jugs of water, three-quarters full, to fill empty freezer space. A full freezer stays cold longer, and the jugs become drinking water.



Pack a cooler. Ice on the bottom and top. Raw meat sealed in bags at the bottom so it can't drip on other food. Keep drinks in a separate cooler that gets opened often.



Check before you refreeze. Food that still has ice crystals, or reads 40°F or colder, can safely be refrozen. It may taste a little different, but it's safe.



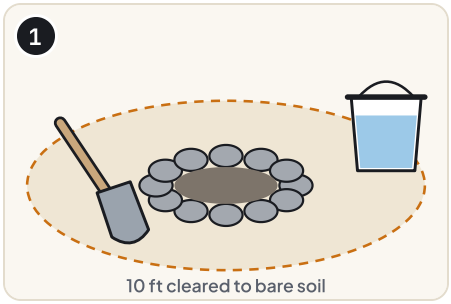
When in doubt, throw it out. Meat, milk, eggs, soft cheese and leftovers above 40°F for 2 hours or more go in the trash. Never taste food to test it.

USUALLY OK AFTER 2 H+ ABOVE 40°F	THROW OUT
Hard cheese (cheddar, parmesan)	Raw or cooked meat, poultry, fish
Butter, margarine	Milk, cream, yogurt, soft cheese
Whole fresh fruit and vegetables	Eggs and egg dishes
Bread, peanut butter, jam	Leftovers, cut fruit, cooked pasta
Ketchup, mustard, pickles	Opened baby formula

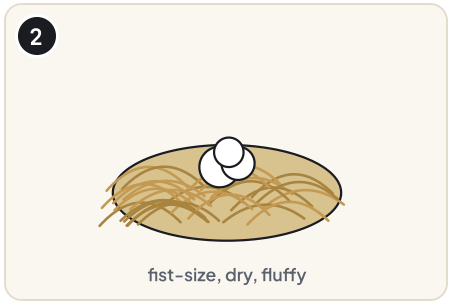
Eat in this order: fridge food on day 1 (cook the meat first), freezer food next while it's still frozen, pantry last. Block ice keeps longer than cubes, and dry ice works too (handle it with gloves, keep it away from people and don't seal it in airtight containers).

Teepee, log cabin, *feather stick.*

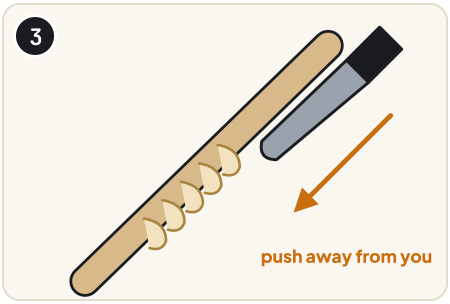
Page 21 has the full method. These are the shapes to practice in a fire pit or grill until you can light a fire with one match, then do it again with wet wood.



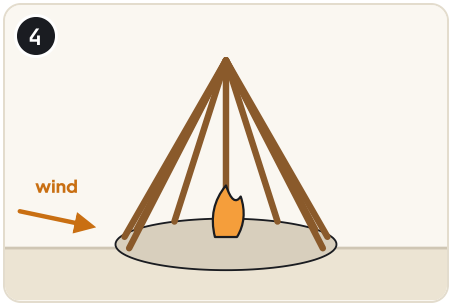
Clear and ring it. Clear a circle 10 feet across down to bare soil. Ring the fire with stones. Keep a bucket of water and a shovel right there before you strike a match.



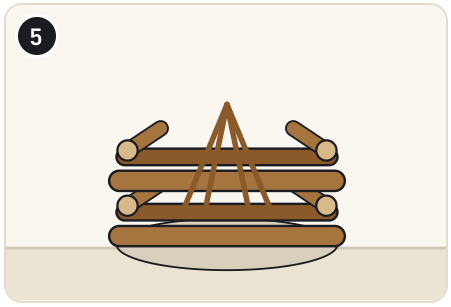
Tinder nest. A fist-size nest of dry grass, bark shreds or dryer lint. A cotton ball with petroleum jelly in the middle burns for minutes, even when it's damp.



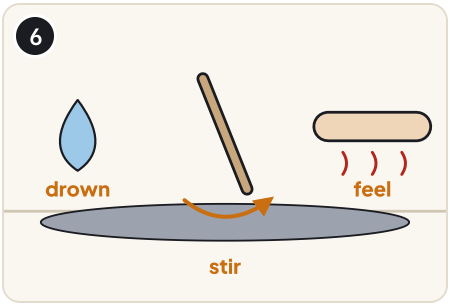
Feather stick. Wet day? Split a stick to the dry inside and shave long curls down it, leaving them attached. Always push the blade away from your body.



Teepee. Lean pencil-thin sticks around the tinder like a cone, with a gap on the side the wind comes from. Light it through the gap. Lights fast and burns hot.



Log cabin. Build a small teepee, then stack wrist-thick sticks around it in a square, crossing at the corners. Burns long and even, which makes good coals for cooking.



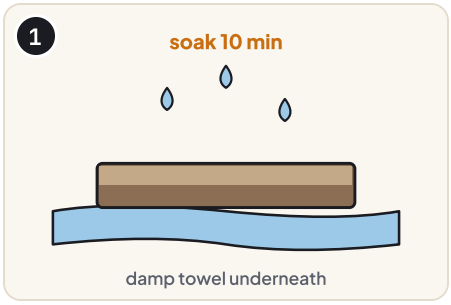
Out cold. Drown it with water, stir the ashes with a stick, drown it again. Hold the back of your hand above the ashes. If it's too hot to touch, it's too hot to leave.

Fires stay outside and small. Never use gasoline or lighter fluid to start or revive a fire. Kids stay outside a rope circle 6 feet from the fire. Check local burn bans in dry weather.

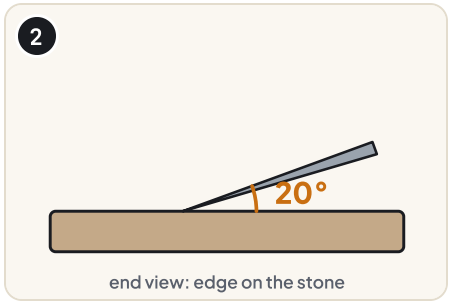
Practice drill: collect tinder, kindling and fuel *before* lighting, twice as much as you think you need. Then light it with one match, a ferro rod and a lighter on three different days.

Twenty degrees, *same every stroke.*

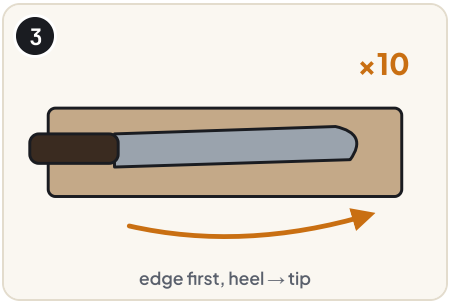
A dull knife slips and cuts the hand that holds it. Sharpening isn't about pressing hard. It's about keeping the same angle every stroke. Ten calm minutes on a whetstone brings back most kitchen and pocket knives.



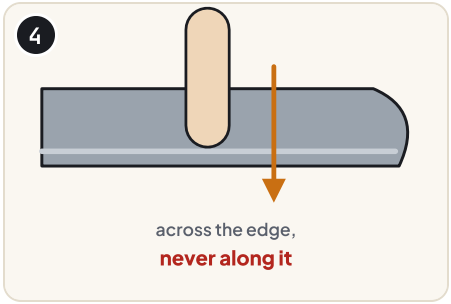
Set up the stone. Soak a water stone for 10 minutes (an oil stone gets a few drops of oil instead). Put it on a damp towel so it can't slide, coarse side up.



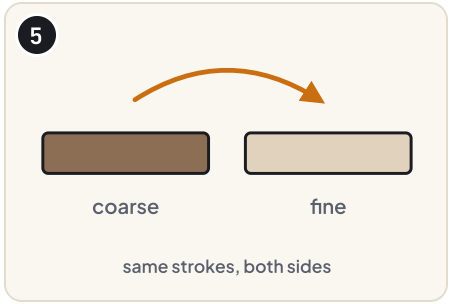
Find the angle. Lay the blade flat, then lift the spine until the edge bites the stone, about 20°. Lock your wrist there and keep that angle.



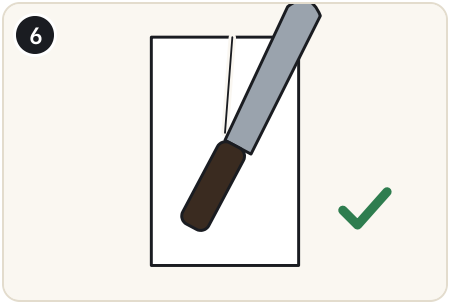
Sweep heel to tip. Push the blade edge-first across the stone as if slicing a thin layer off it, sweeping from the heel to the tip. Ten strokes, light pressure.



Feel for the burr. Gently drag your thumb from the spine off the edge (across it, never along it). A tiny rough lip on the far side means that side is done.



Flip it, then the fine side. Same number of strokes on the other side of the blade until the burr flips. Then repeat everything on the fine side of the stone, with lighter strokes.



Test on paper. A sharp blade slices a sheet of paper cleanly and quietly. If it snags or tears, find the dull spot and go back to the stone.

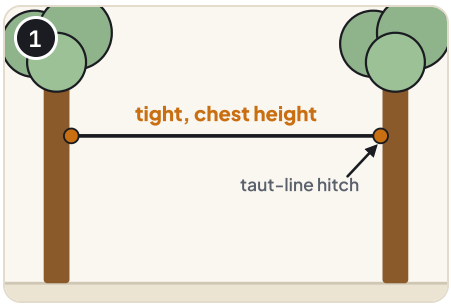
Axes, hatchets, shovels, hoes

Clamp the tool and push a flat file **toward** the edge, following the bevel that's already there. File only on the push stroke. Finish an axe with a round puck stone in small circles. Shovels and hoes only need a rough edge, so don't make them razor sharp.

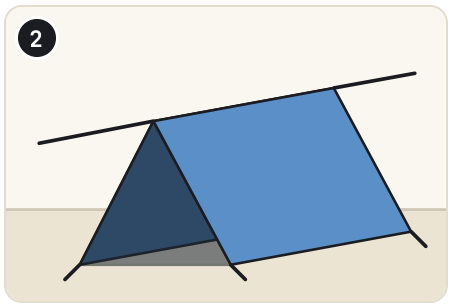
Cut-proof habits: sharpen sitting down with good light. Wipe the blade from the spine side. Never test the edge with a fingertip, and never try to catch a falling knife.

One line, one tarp, *six stakes.*

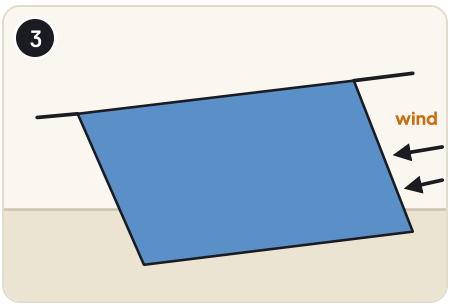
A 10×12 tarp and 50 feet of cord make a rain roof for an outdoor kitchen, a dry woodpile, cover for a broken roof or, if you have to leave, a shelter. Practice in the yard: pitching one in the rain is the real test.



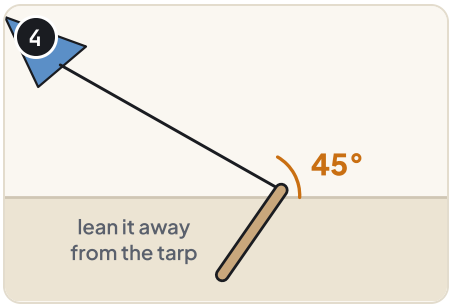
Ridgeline. Tie a cord between two trees at about chest height. Tie it with a bowline on one end and a taut-line hitch on the other (p. 25), and pull it tight.



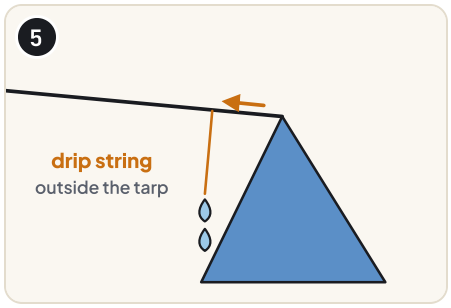
A-frame. Drape the tarp evenly over the line and stake both long edges out at the same angle. Best for steady rain: water runs off both sides.



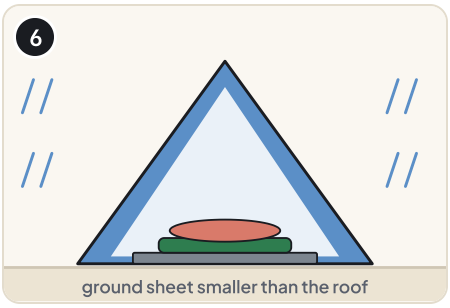
Lean-to. Tie one long edge along the ridgeline and stake the other to the ground, with the back facing the wind. Good shade, and it blocks wind from one side.



Stakes at 45°. Drive each stake leaning *away* from the tarp so the pull can't lift it out. In sand or snow, bury a stick or a bag of rocks instead.



Drip line. Tie a short string around the ridgeline just outside each end of the tarp. Rain running along the line drips off the string instead of running inside.



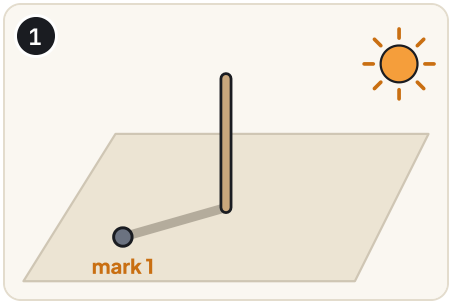
Dry floor. The ground sheet goes inside and must be smaller than the roof, with its edges folded under. If it sticks out, it catches rain and pours it underneath you.

Pick the spot first. Look up: no dead branches overhead ("widowmakers"). Look down: not in a dip, ditch or dry creek bed that floods. Never use a candle, stove or heater under a tarp.

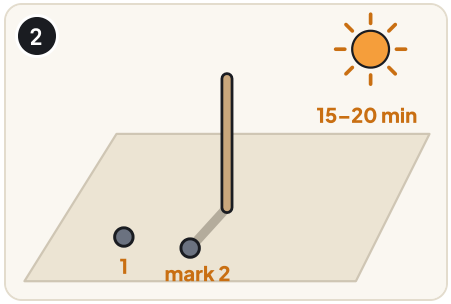
At home: the same tarp over a line between the house and a post makes a dry outdoor kitchen for the camp stove, or keeps the woodpile and generator fuel dry.

Shadow, stars, *and the midday sun.*

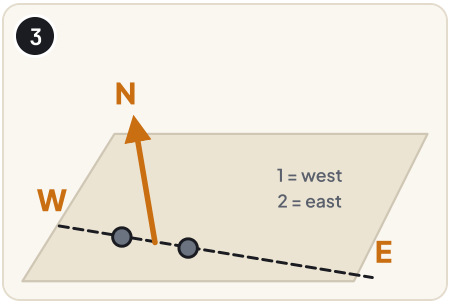
Phones and GPS can fail. You can still find north with a stick and a sunny morning, with the stars on a clear night, or with a paper map and compass. Practice each once on a normal day.



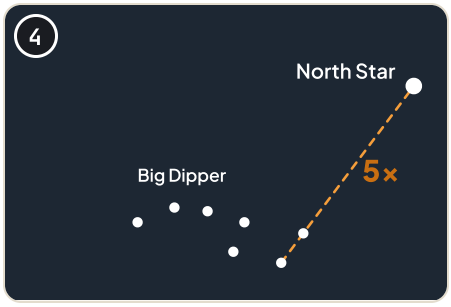
Mark the shadow tip. Push a straight stick upright into level, sunny ground. Put a pebble on the tip of its shadow.



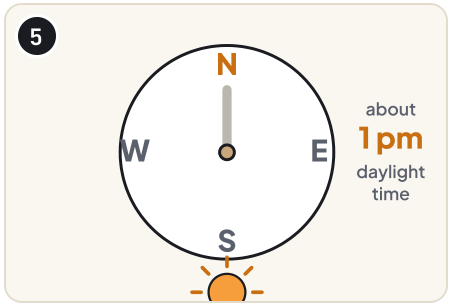
Wait, mark again. Wait 15–20 minutes. The shadow moves. Put a second pebble on the new tip.



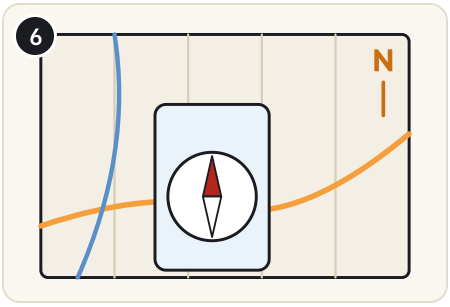
Read it. The first pebble is west, the second east. Stand with the first on your left and the second on your right: you're facing north.



At night: the North Star. Find the Big Dipper. Follow the two stars at the end of the cup about 5 times their gap to a lone bright star. It sits almost exactly north.



Midday shortcut. In the US, the sun is due south around 1 pm daylight time (noon in winter). Shadows then point north. Good enough to pick a direction.

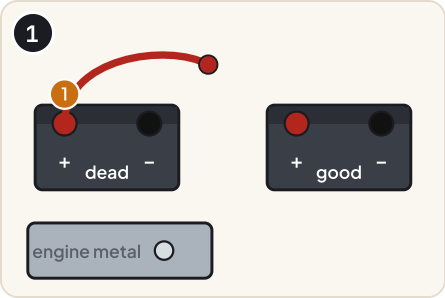


Orient the map. Lay the compass on the map. Turn the map and compass together until the red needle lines up with the map's north lines. The roads now match the real ones.

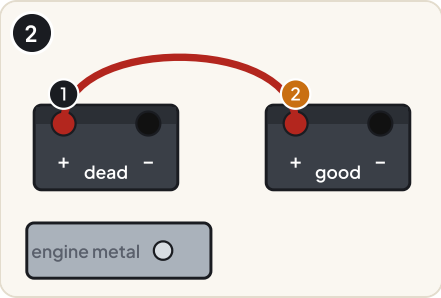
The shadow stick works best around midday, and waiting longer between the two marks makes it more accurate. Early or late in the day it can be off by several degrees, which is still fine for picking a direction to walk.

Red to dead, *black to bare metal.*

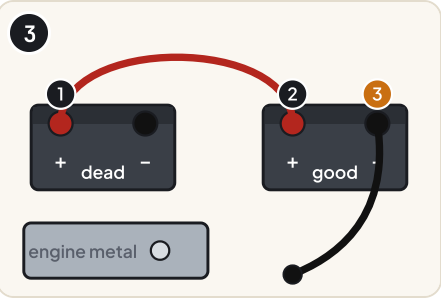
Cold and short trips kill batteries, and in a long outage the car may be your charger, radio and way out. Learn the clamp order once and it stays with you. Check your car's manual: some have special jump points under the hood.



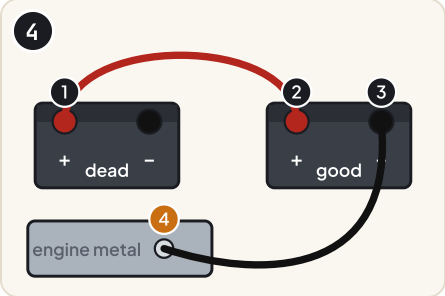
Red on the dead battery's +. Both cars off, keys out, parked close but not touching. Clamp one red end to the + post of the dead battery.



Other red on the good battery's +. Never let the clamps touch each other or any metal while either end is connected.



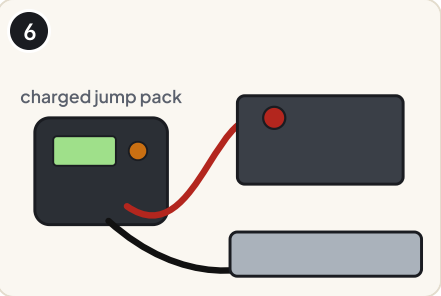
Black on the good battery's −. One black clamp on the negative (−) post of the good battery.



Last black on bare metal. The last clamp goes on an unpainted bolt or bracket on the dead car's engine, away from the battery. A small spark here is normal.



Start the good car first. Let it run 2–3 minutes, then try the dead one. Once it runs, remove the clamps in reverse order: 4, 3, 2, 1.



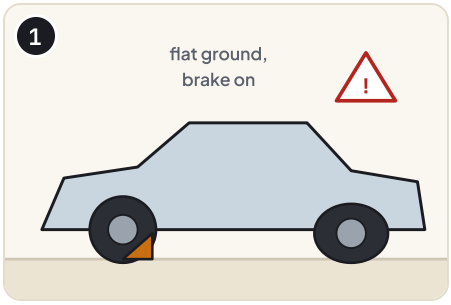
Or use a jump pack. No second car needed. Red to +, black to bare metal (or to − if the pack's manual says so), switch it on, start the car. Recharge the pack after.

Batteries give off explosive gas. No smoking or flames nearby. Wear glasses. Never jump a battery that is cracked, leaking, bulging or frozen. If the car doesn't start after 3 tries, stop. The problem may not be the battery.

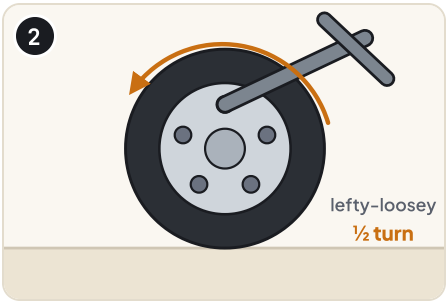
Keep the battery alive: in a long outage, start the car and let it run (outside, never in the garage) or drive it 20 minutes every few days. Charge phones from it while it runs.

Loosen, lift, *tighten in a star.*

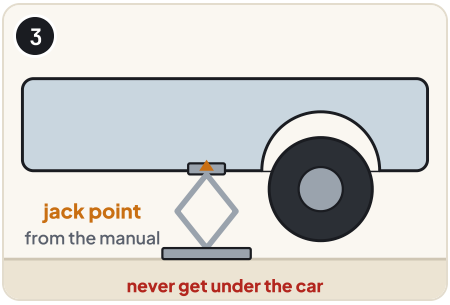
After storms, roads are full of nails and debris, and tire shops may be closed. Learn on your own driveway with your own jack, so you find the stuck lug nut and the missing wrench on a sunny day.



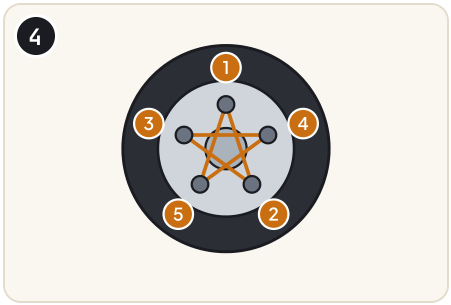
Safe spot. Pull far off the road onto flat, firm ground. Hazard lights on, parking brake on, everyone out on the safe side. Wedge the wheel diagonally opposite the flat.



Loosen first, on the ground. While the tire still touches the ground, turn each lug nut counter-clockwise half a turn. Stand on the wrench if they're tight.



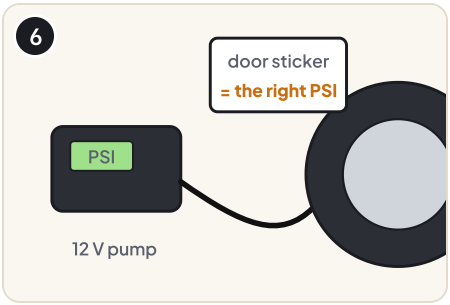
Jack at the jack point. Your manual shows the spot, usually a notch on the edge under the door. Lift until the flat tire just clears the ground. Never put any part of you under the car.



Tighten in a star. Swap the wheel, then screw the nuts on by hand. Snug them in a star pattern, lower the car, then tighten fully in the same star order. Check them again after 50 miles.



Or plug a puncture. A nail in the tread? Pull it out, push the reamer in and out, then push the sticky plug in with the needle tool and pull the tool straight out. Trim the ends and inflate.



Pump and check. Inflate to the pressure on the sticker inside the driver's door, not the number on the tire. Check the spare's pressure twice a year too.

Small "donut" spares are for getting home: most are rated for about 50 mph and a short distance. Read the limits printed on its side. A plug is a get-you-home fix too. Have the tire checked when shops reopen.

Bike flat, same idea

Lever the tire off, pull out the tube and pump it up to find the hole (listen, or dunk it in water). Sand it, patch it, then **feel inside the tire for the thorn** before refitting, or it goes flat again.

What we have, *and where it lives.*

Tick "Have" when you own it, and write where it's kept (G = garage, S = shed, H = hall closet, K = kitchen, C = car, T = toolbox). Tier in brackets.

Everyday carry (per adult)

TOOL	✓	WHERE
Headlamp + batteries (1)	☐	
Small flashlight (1)	☐	
Multitool (1)	☐	
Folding knife (1)	☐	
Lighters ×2 (1)	☐	
Whistle (1)	☐	
Bandana (1)	☐	
Notebook + pencil (1)	☐	
Work gloves (1)	☐	
Paracord 20 ft (1)	☐	

Hand tools

TOOL	✓	WHERE
Claw hammer (1)	☐	
Screwdriver set (1)	☐	
Pliers ×3 (incl. locking) (1)	☐	
Adjustable wrenches ×2 (1)	☐	
Utility knife + blades (1)	☐	
Tape measure (1)	☐	
Pry bar (1)	☐	
Hand saw (1)	☐	
Socket set (2)	☐	
Hex keys (2)	☐	
Cordless drill + batteries (2)	☐	
Manual hand drill (2)	☐	
Clamps (2)	☐	
Level + square (2)	☐	
Staple gun (2)	☐	
Files + rasp (2)	☐	
Hacksaw (2)	☐	
Caulk gun (3)	☐	
Safety glasses, ear protection (1)	☐	

Cutting & wood

TOOL	✓	WHERE
Folding pruning saw (1)	☐	
Bow saw + spare blades (2)	☐	
Loppers (2)	☐	
Hatchet (2)	☐	
Maul + wedges (3)	☐	
Felling axe (3)	☐	
Whetstone (2)	☐	
Axe puck stone (3)	☐	

Digging & moving

TOOL	✓	WHERE
Round-point shovel (2)	☐	
Square / snow shovel (2)	☐	
Spade + digging fork (3)	☐	
Mattock / pick (3)	☐	
Rakes (2)	☐	
Hoe (3)	☐	
Wheelbarrow / cart (2)	☐	
Folding wagon (2)	☐	
Hand truck (3)	☐	
Ladders (2)	☐	
Drinking-water hose (2)	☐	
Sandbags (3)	☐	

Repair supplies

TOOL	✓	WHERE
Duct tape ×4 (1)	☐	
Zip ties (1)	☐	
Paracord 100 ft (1)	☐	
Rope 100 ft (1)	☐	
Tarps ×4 (1)	☐	
Plastic sheeting (1)	☐	
Plywood, cut + labeled (2)	☐	
Screws & nails (1)	☐	
Wire, hose clamps (2)	☐	
Epoxy, glues (2)	☐	
Silicone, roof sealant (2)	☐	
PTFE + electrical tape (1)	☐	
Bungees, ratchet straps (2)	☐	
Sewing kit + awl (2)	☐	

Water

TOOL	✓	WHERE
Drum pump (1)	☐	
Bung wrench (1)	☐	
Jiggle siphon (1)	☐	
Gravity filter + elements (1)	☐	
Filter bottles (2)	☐	
Collapsible jugs (2)	☐	
Funnel (1)	☐	
Eyedropper + spoons (1)	☐	
Test strips (3)	☐	
Rain diverter + barrel (3)	☐	
Heater drain hose (1)	☐	
Clear PET bottles (3)	☐	

Fire & cooking

TOOL	✓	WHERE
Lighters 10+ (1)	☐	
Stormproof matches (1)	☐	
Ferro rod (1)	☐	
Fire starters (1)	☐	
Camp stove (2)	☐	
Propane adapter hose + gauge (2)	☐	
Rocket stove (or bricks) (3)	☐	
Pressure cooker (2)	☐	
Dutch oven + lid lifter (3)	☐	
Cast-iron skillet (2)	☐	
Kettle / percolator (1)	☐	
Manual can openers ×2 (1)	☐	
Hand grain mill (3)	☐	
Food + fridge thermometers (1)	☐	
Charcoal chimney (3)	☐	
Fire extinguishers ×3 (1)	☐	

Power & electrical

TOOL	✓	WHERE
Solar station + panels (2)	☐	
Multimeter (2)	☐	
Battery tester (1)	☐	
Rechargeables + charger (1)	☐	
12-gauge outdoor cords (2)	☐	
Power strip (2)	☐	
USB cables ×2 each (1)	☐	
12 V inverter (2)	☐	
Jump starter (2)	☐	
Spare fuses (2)	☐	
Voltage tester (2)	☐	
Generator kit (oil, plug) (3)	☐	

Plumbing & home

TOOL	✓	WHERE
Gas shutoff wrench (1)	☐	
Water meter key (1)	☐	
Plunger (1)	☐	
Toilet auger (2)	☐	
Pipe wrench (3)	☐	
Pipe repair clamps (3)	☐	
Self-fusing tape (2)	☐	
Pipe insulation (2)	☐	
Roof tarp + battens (2)	☐	
Shop vac (2)	☐	
Mops, squeegee, buckets (1)	☐	
Sump hand pump (3)	☐	

Light, signal & navigation

TOOL	✓	WHERE
Headlamps 1 each + 2 (1)	☐	
LED lanterns ×3 (1)	☐	
Flashlights (1)	☐	
Solar garden lights (2)	☐	
Glow sticks (1)	☐	
Solar motion lights (2)	☐	
Glow tape (1)	☐	
Air horn (2)	☐	
Signal mirror (3)	☐	
Paper maps ×2 (2)	☐	
Compass ×2 (2)	☐	
NOAA radio (1)	☐	
Two-way radios ×4 (2)	☐	
Whiteboard (2)	☐	

Medical tools

TOOL	✓	WHERE
Thermometers ×2 (1)	☐	
Pulse oximeter (3)	☐	
BP cuff (3)	☐	
Tourniquets ×2 (1)	☐	
Trauma shears (1)	☐	
Pressure bandages (1)	☐	
Irrigation syringe (2)	☐	
Closure strips (2)	☐	
Splint + wraps (2)	☐	
Burn dressings (2)	☐	
Gloves (1)	☐	
Foil blankets (1)	☐	
First aid manual (1)	☐	

Sanitation & laundry

TOOL	✓	WHERE
Buckets + toilet seats (1)	☐	
Bucket liners 100+ (1)	☐	
Outdoor lidded bins (1)	☐	
Spigot jugs ×2 (1)	☐	
Wash basins ×3 (1)	☐	
Laundry plunger / washer (2)	☐	
Washboard (3)	☐	
Wringer (2)	☐	
Clothesline + pegs (2)	☐	
Drying rack (2)	☐	
Pump sprayer / solar shower (3)	☐	
Manual hair clippers (3)	☐	

Car & bike

TOOL	✓	WHERE
Jump starter (2)	☐	
Tire plug kit + pump (2)	☐	
Tire gauge (2)	☐	
Jack + lug wrench (1)	☐	
Tow strap (2)	☐	
Folding shovel (2)	☐	
Fuel cans + stabilizer (2)	☐	
Fuel siphon (labeled) (2)	☐	
Bike + lock (3)	☐	
Pump, tubes, patches (3)	☐	
Bike multitool (3)	☐	
Child seat / trailer (3)	☐	

WORKSHEET 2

Who can do *what.*

Write each family member's name at the top. When someone has done a skill twice (once by day, once in the dark or cold), write the date or add a sticker. Aim: every adult has skills 1–8.

SKILL	NAME	NAME	NAME	NAME	NAME	NAME
1 · CO & fire safety, extinguisher						
2 · First aid, CPR, choking (infant too)						
3 · Bleeding control, tourniquet						
4 · Treat water 4 ways						
5 · Bucket toilet, handwashing, dishes						
6 · Warm room / cool room setup						
7 · Shut off water, gas, power						
8 · S.T.O.P. and the family plan						
9 · Build and put out a fire						
10 · Camp stove, rocket stove, retained heat						
11 · Board a window, tarp a roof, fix a leak						
12 · Six knots						
13 · Radio check-in, signals						
14 · Paper map & compass						
15 · Grow sprouts & greens, store food						
16 · Sew, patch, bake bread						
17 · Laundry by hand						
18 · Generator, outdoors, safely						
19 · Keep food cold (thermometers)						
20 · Pitch a tarp shelter						
21 · Jump-start, change a tire						
Solar station & charging rota						
Sharpen a knife or axe						

Classes booked

CLASS	WHERE	DATE	WHO
CPR / first aid			
Stop the Bleed			
Infant CPR			

Licenses & numbers

GMRS call sign _____

Ham call sign _____

Local radio club / CERT _____

County extension office _____

Where to learn more, *in person.*

Safety guidance in this book follows public US sources, checked in October 2026. Check the current versions, and learn hands-on skills from qualified instructors:

TOPIC	WHERE
Emergency plans & kits	FEMA · `ready.gov`
Water treatment, SODIS	US EPA · CDC · WHO
Carbon monoxide, generators, chainsaws	CDC · US Consumer Product Safety Commission
First aid, CPR, infant CPR	American Red Cross · American Heart Association
Bleeding control	`stopthebleed.org`
Community response training	FEMA CERT program
Food preservation & canning	USDA · National Center for Home Food Preservation
Gardening for your area	Your county extension office
Radio licenses	FCC (GMRS) · ARRL (amateur radio)
Fire safety	National Fire Protection Association · local fire dept.
Digging safely	Call **811** before you dig

Good places to learn

- Hardware store workshops (basic repairs, tools).
- Fire departments and hospitals (CPR, car seats, extinguishers).
- Scouts, 4-H, outdoor clubs (fire, knots, navigation) for kids and parents.
- Local amateur radio clubs (license classes, emergency nets).
- Libraries (repair manuals, gardening, field guides) and community colleges.

This handbook is general information for families, not professional, medical or legal advice. Follow instructions from local officials, and use tools and fire at your own risk with proper training and protective gear. Read the full safety notice and terms on page 55.

Notes · what we learned on practice weekends

© 2026 Outage Supply Planner. Book 2 of 3, free. Print and share freely, no sign-up needed. Please share it whole and don't sell it (p. 55).

IMPORTANT · PLEASE READ

Before you rely on *this book.*

This handbook helps a household plan and practice. It can't see your home, your family's health or your local rules, so treat every number in it as a starting point to check, not an instruction to follow blindly.

Safety notice

- **General information only.** Nothing here is medical, nursing, legal, electrical, plumbing or other professional advice. It doesn't replace your doctor, your pediatrician, a qualified tradesperson or a hands-on class.
- **Officials come first.** Instructions from local officials, emergency managers, your utility and emergency dispatchers always override this book.
- **So does the label.** Follow the manufacturer's instructions for generators, stoves, power stations, alarms, tools, medicines and formula.
- **Follow local codes and laws** on fuel storage, burning, generators, building work, radios, knives and firearms.
- **Babies, pregnancy, illness and medical devices** need a plan made with your own doctors (Book 1, p. 31).
- **Chainsaws, axes, ladders and roof work** need training and protective gear. If a job feels beyond you, wait for a professional.
- **In an emergency, call 911** in the US and Canada, or **112** in the EU and many other countries. US Poison Control: 1–800–222–1222. Elsewhere, ask your local emergency number for poison help.

Use at your own risk

Fuel, fire, generators, tools, ladders, water treatment and first aid all carry real risk, and you are responsible for how you use this information. To the fullest extent the law allows, the author and publisher accept no liability for any injury, illness, loss or damage that results from using or misusing it.

Numbers and prices

Amounts are rough guides for an example household. Prices are rough 2026 US averages, not quotes. Guidance changes: check the sources on page 54 for the current versions. The facts in this edition were checked in October 2026.

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Found a mistake or something out of date?
Tell us through outage.life. Corrections go into the next edition.

Tools & Skills for the Dark · Book 2 of the Outage Supply Planner handbooks (three books, all free).
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