Winter Camp Awareness

Tents and Terrain

The Objective

To provide you with information in selecting the proper tent for snow camping and how to construct safe snow shelters

Choosing a Campsite

Consider the following when selecting a campsite:

- **Sun and exposure to wind**
- **Wind direction**
- **Slope and avalanche paths**
- **Drainage…What is under the snow pack?**
- **Avoid low places where air is still and coldest**
- **Check for dead branches hanging from trees.**
- **Tramp/pack down the area for your tent. Bare dirt is best if available.**

Four Major Types of Tents

- Summer
- Three Season
- All Season
- Winter/ Mountaineering

Summer Tents

- Designed for hot weather / climate
- Weigh 4 to 8 pounds
- Light weight 2 pole construction
- Lots of ventilation
- Lots of mesh

Three Season Tents

- Built to withstand light snow, warm climates and conditions in between
- Large vestibule to accommodate gear
- Weighs 4 to 10 pounds
- Designed for versatility
- 3 pole high strength
- Full rain fly coverage
- Inner wall often mesh.

All Season Tents

- Can be used year round
- Weigh 5 to 10 pounds
- 4 Aluminum poles
- Removable vestibule
- Rain fly can be set up by itself.

Winter & Mountaineering Tents

- For winter camping under extreme conditions
- Optional free-standing construction
- Full coverage rain fly
- 4 - 5 aluminum poles
- Two doors
- Steep sides
- 5 to 10 pounds
- Very strong!

Qualities of a Winter Tent

- "Bathtub" floor up the side walls
- Aluminum poles
- Double wall, no mesh wall
- Two exits
- Shape sheds snow load
- Extra poles for greater snow loading
- More stake lines and guy lines

Is this a good Winter Tent?

Is this a good Winter Tent?

Qualities to Consider When Choosing a Tent

- Tent components are suitable for cold. Can be use with gloves on.
- Types of tents. 4-season, all season or augmented 3-season.
- Materials. High-denier fabric. 100% waterproof polyurethane coating.
- Ventilation
- Size and weight
- Other key features: Gear loops, one piece floors, collapsible tent poles, guy lines.

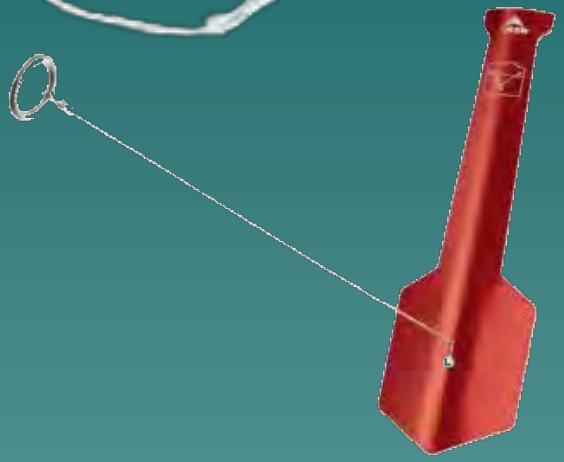
Preparations and Modifications of Tents for Winter Camp

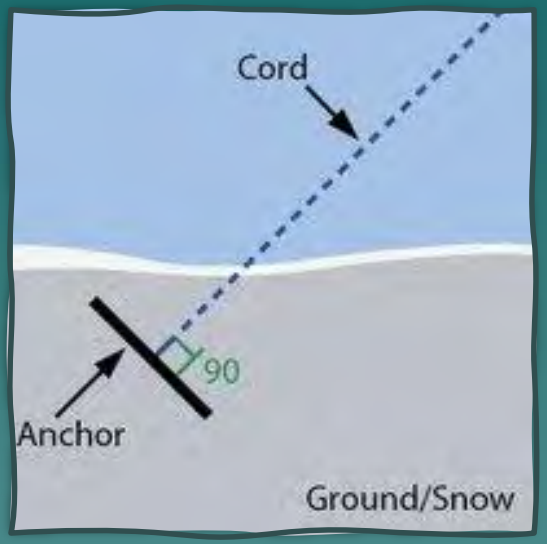
- Use of snow walls as wind breakers at least 2’ high.
- Floor covering to help insulate your body
- Reinforce, if necessary, for snow load
- Cover mesh inner tent with a tarp. Leave vents.
- Silicon lube zippers and poles so they don’t stick
- Build snow stakes

Snow Wall

- Two to three feet high
- Place same distance from tent to avoid being covered by drifts blowing over the wall.
- Can completely encircle the tent but should at least block the prevailing winds.

Snow Stakes





- Stakes should **be 6” to 12”** deep in snow.
- Compact the snow above the stake.

Tips for Tents

- Do not cook in a tent

- Bring extra poles
- Bring a ground tarp for your tent
- Always stake down your tent
- Bring a Wisk broom to brush the snow off your clothes and boots, before getting in your tent

Snow Shelters

Types of Snow Shelters

- Snow Dome
- Snow Cave
- Igloo
- Tree Pit
- Snow Pit or Snow Trench
- Snow Frame

Snow Dome / Quinzee

- Takes 15- 20 man-hours
- Take snow and pile it up 8’ high and 12’ diameter
- Dig and hollow it out after 2 hours, or when snow freezes
- Poke ventilation holes (1”diameter)
- Close the entrance to seal in warm air if needed

(Illustration on next slide)

Snow Dome / Quinzee

Channel in floor draws cold air out the door

Sticks mark depth of wall.

For safety one person stays outside during digging.

Snow Dome / Quinzee

Advantages of a Snow Dome

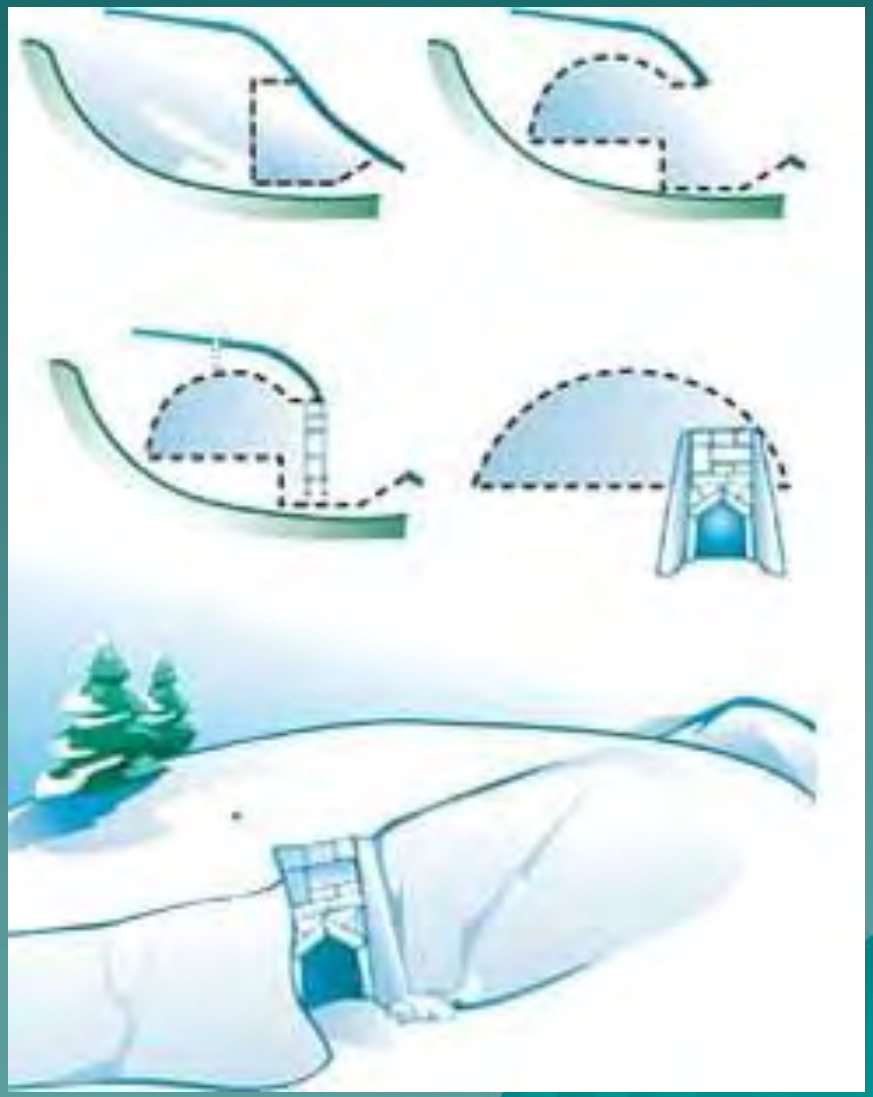
- Provides more permanent, long term shelter.
- Shelter can be tall enough to stand inside.
- Can be warmer than a tent
- Can withstand high winds and heavy snowfall
- Closed entrance keeps the heat in.

Precautions with a Snow Dome

- Stay as dry as possible.
- Avoid overheating while building the shelter.
- Keep digging tools and packs inside in case of collapse.
- Make several small ventilation holes in case one gets closed / clogged.
- No flames, candles, propane heaters or stoves inside shelter.

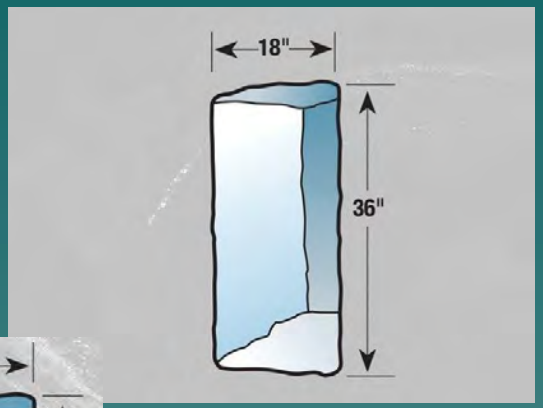
Snow Cave

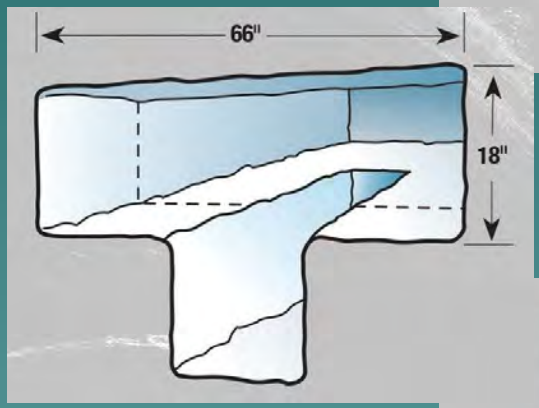
- Takes 3-4 man hours
- Tunnel into drift with T-Shaped entrance
- Pack down snow to make a T shape
- Put a tarp down on one side of the T to sleep on.
- Keep shovel inside.
- Block entrance with packs, not snow! For air and escape.

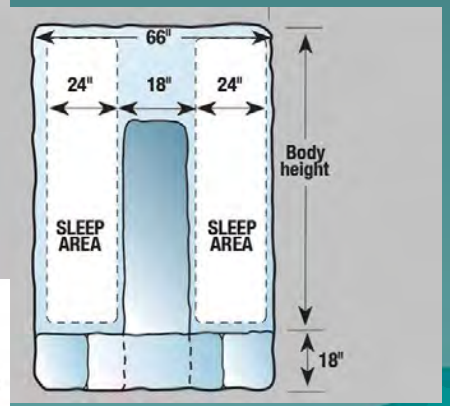


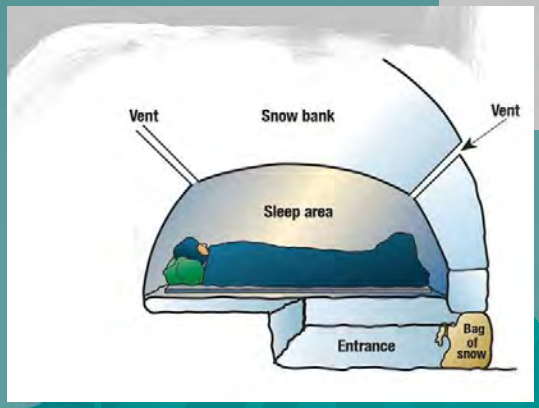
Snow Cave

- Dig an entrance 18 inches wide and as high as your chest.
- Widen the entrance to form a T shape.
- The floor of the cave will be waist level. The depth will be your height.
- Two airholes, pack blocks entrance.









Snow Cave

- Warnings above cave to prevent people walking on it and collapsing it.
- Blocking entrance can make escape difficult. Use packs or block outside entrance

Advantages of a Snow Cave

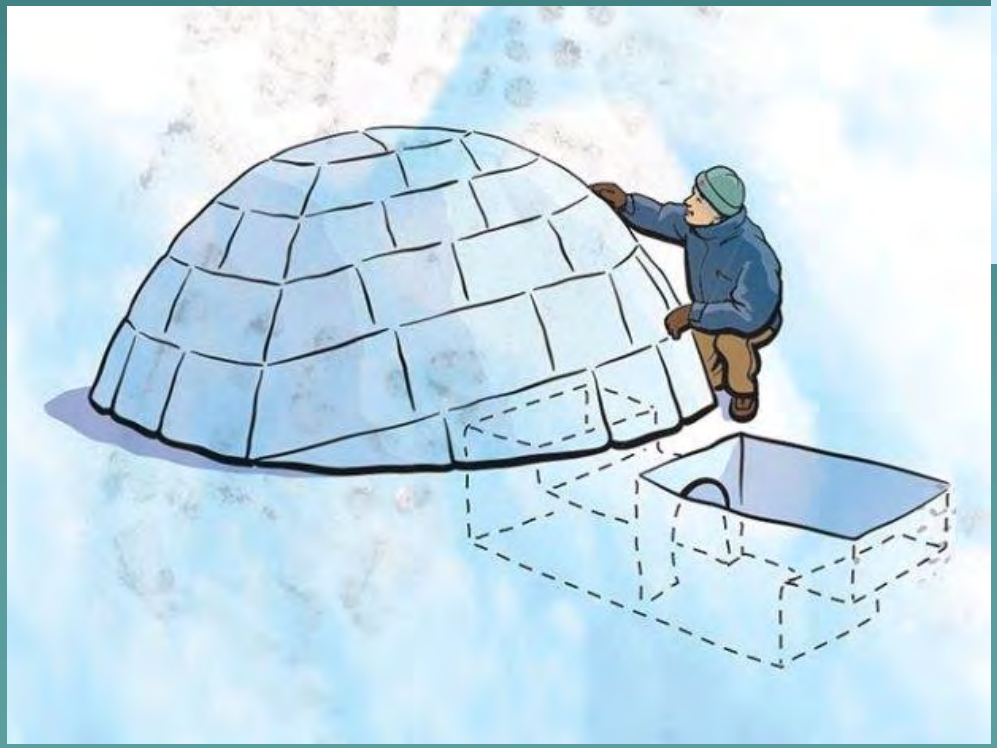
A Snow Cave has many of the same advantages of a snow dome with the added advantage that you don't have to create a large snow pile before beginning

Igloo

- Takes 4-6 man-hours
- The igloo consists of blocks of hard dry snow that are 3’ long and 15” high and 8” thick
- Form a circle with the blocks that form a spiral
- No wider than 10 feet in diameter to prevent collapse.
- Warning: You need at least one air hole to prevent suffocation. Don’t block entrance.

Igloo

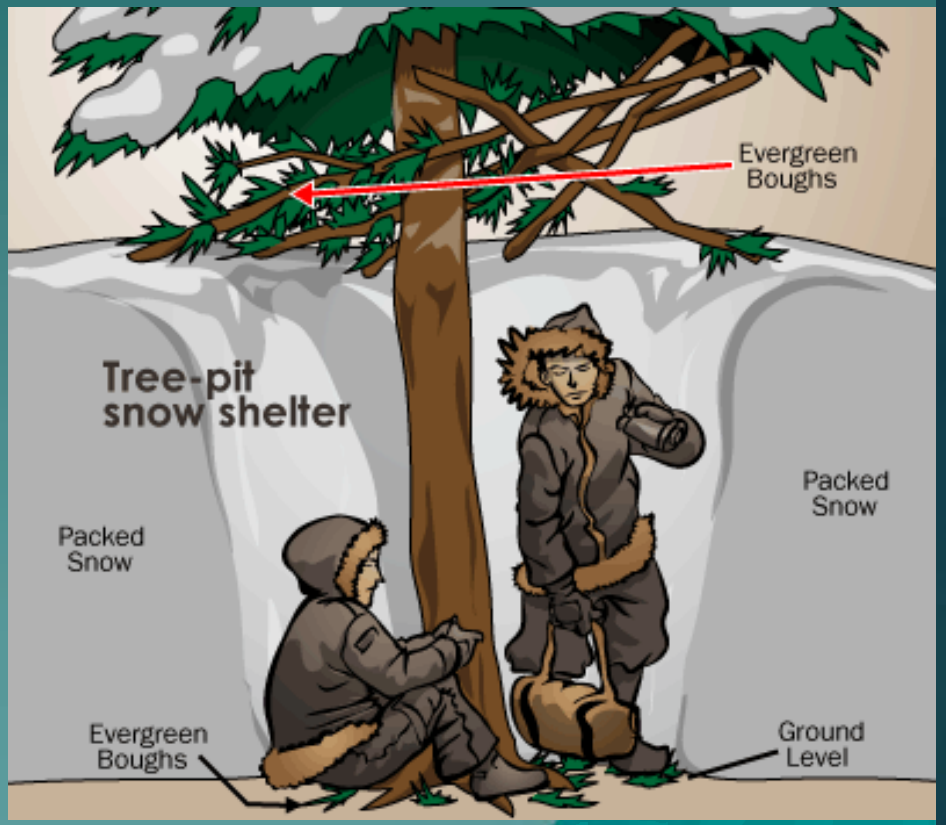
Pack mounds of snow until they harden or cut blocks of snow from the depth where your feet stop sinking.



Build a door in the ground, about 18 inches lower than the ground inside the igloo, and tunnel below the wall into the igloo.

Tree Pit

- Takes ¼ man-hours
- Find a large evergreen tree with a large spread of branches
- Dig around the trunk until you reach the ground.
- Lean boughs against the branches and cover with snow.
- Pack down the snow to make a floor.
- Put a tarp on the ground to sit and sleep on



Advantages of a Tree Pit

- The area around the base of the trunk usually has a thick bed of pine needles which provide excellent insulation for a ground bed
- Tree pits require very little energy to build and can fit several people
- The trunk can be a comfortable and (somewhat) dry place to sit and lean against

Precautions for a Tree Pit

- Snow buildup may be shed by branches in large, heavy dumps.
- Tree branches will sometimes break when snow piles up on top of them. Be careful of weakened, or broken branches
- Be careful of soft snow around tree well. If not safe try another tree.

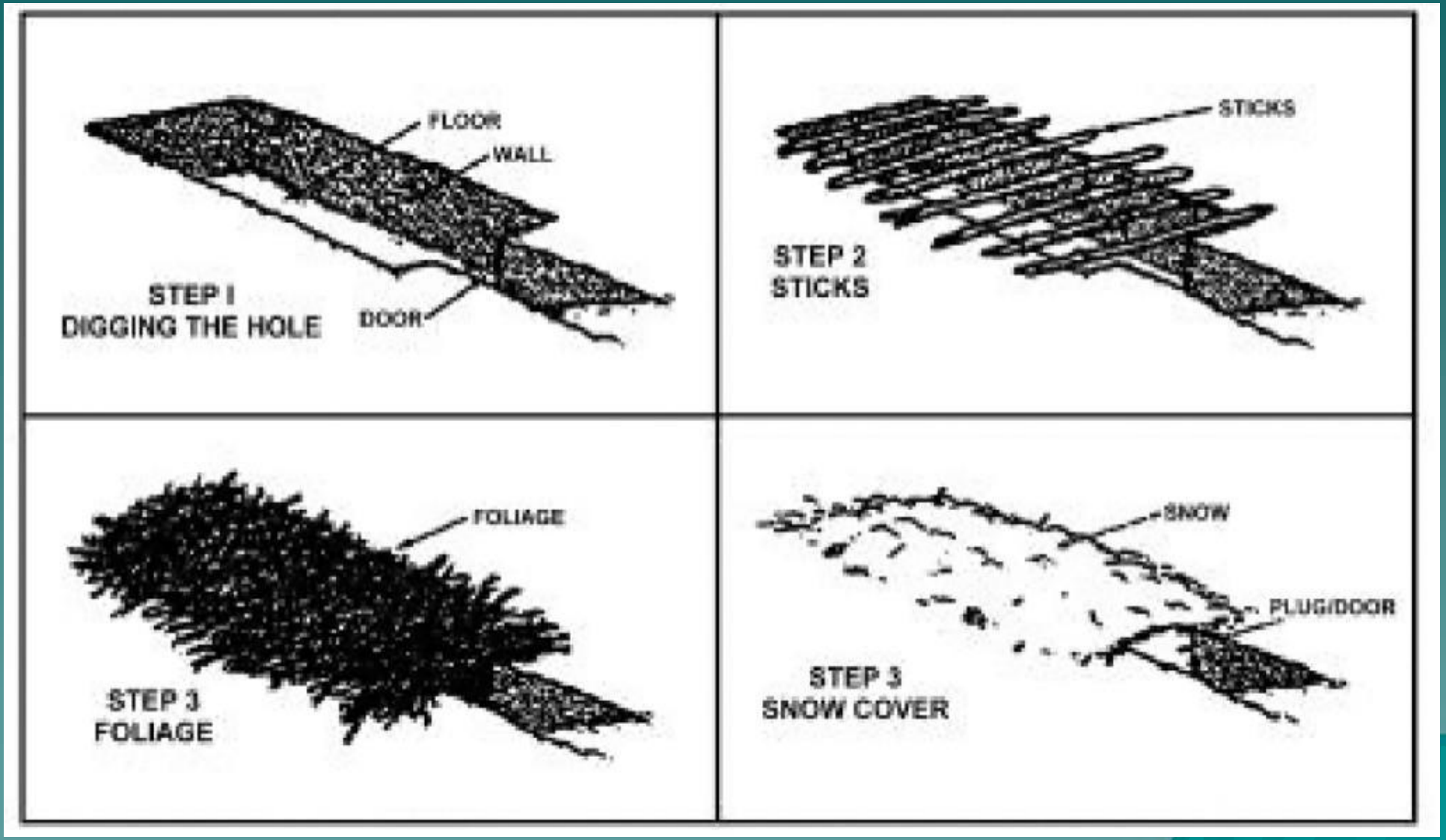
Tree Pit Candidate

Snow Trench

- Takes ½ man Hours (Deep snow required)
- Dig out a large pit/trench long enough for you to lay down in
- If you have a tarp or other large piece of material, place it over the top
- Weigh down the edges with branches and cover with snow
- Tunnel in to one end of the shelter for access and then cover once inside to keep you warm
- Advantage: easy to build and fast to get out of wind.

(Illustration on next slide)

Snow Trench


FLOOR
WALL
DOOR
STEP I
DIGGING THE HOLE
STICKS
STEP 2
STICKS
FOLIAGE
STEP 3
FOLIAGE
SNOW
PLUG/DOOR
STEP 3
SNOW COVER

Snow Trench

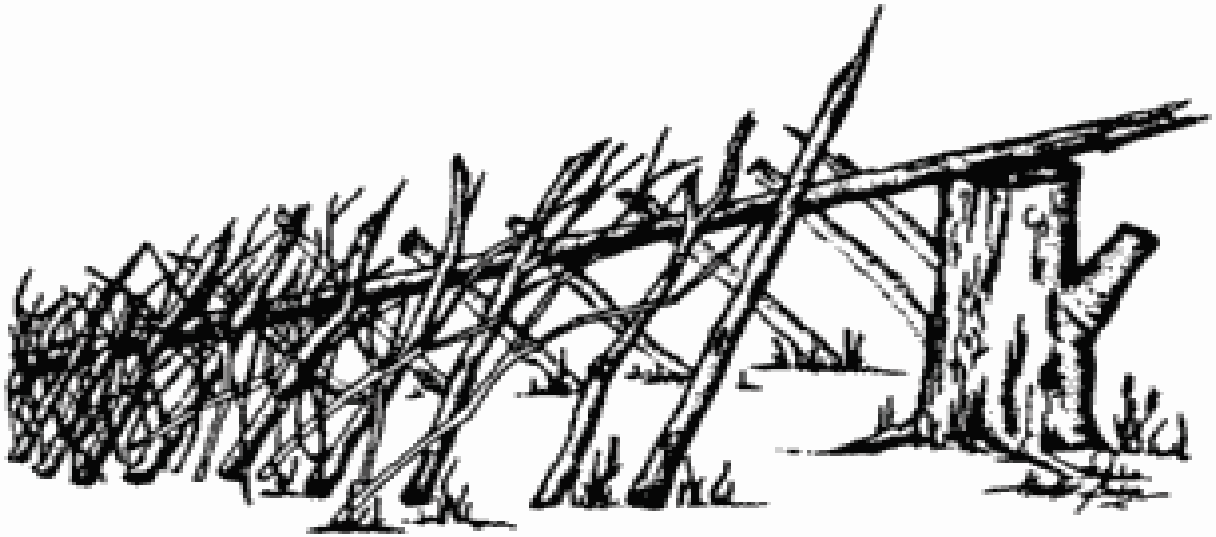
Snow Frame

- Not practical unless the log is at least 24 inches tall and 6 inches in diameter.
- Lay a sturdy branch across the stump and brace so it will not roll.
- Lay branches against the log and use branches or a tarp to keep snow out.
- Pack the sides with snow to keep heat in. (2’ of snow or leaf debris)
- No flames, candles, propane heaters or stoves inside shelter.

(Illustration on next slide)

Snow Frame

1



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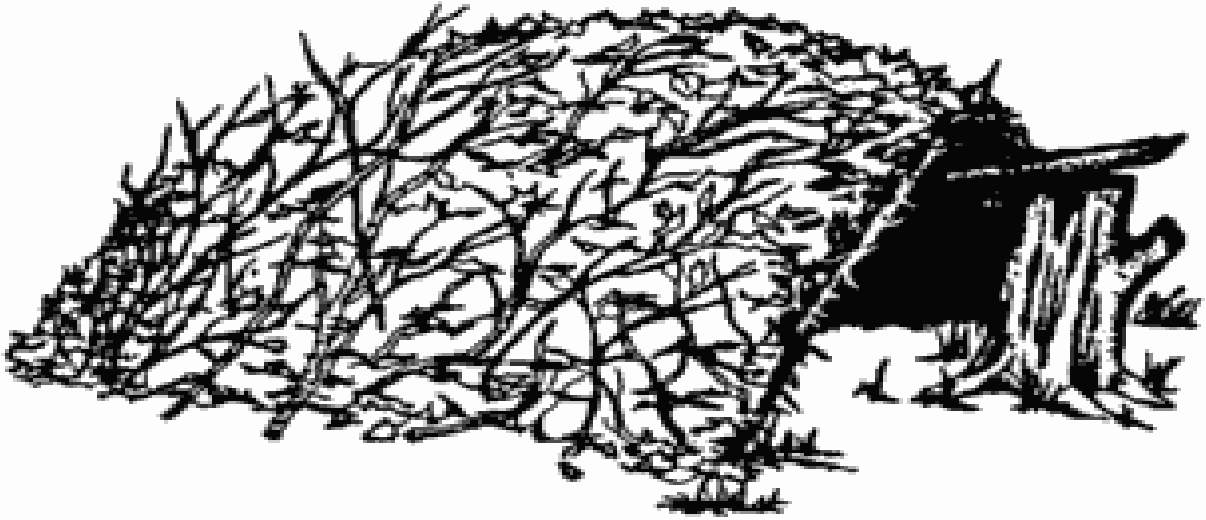
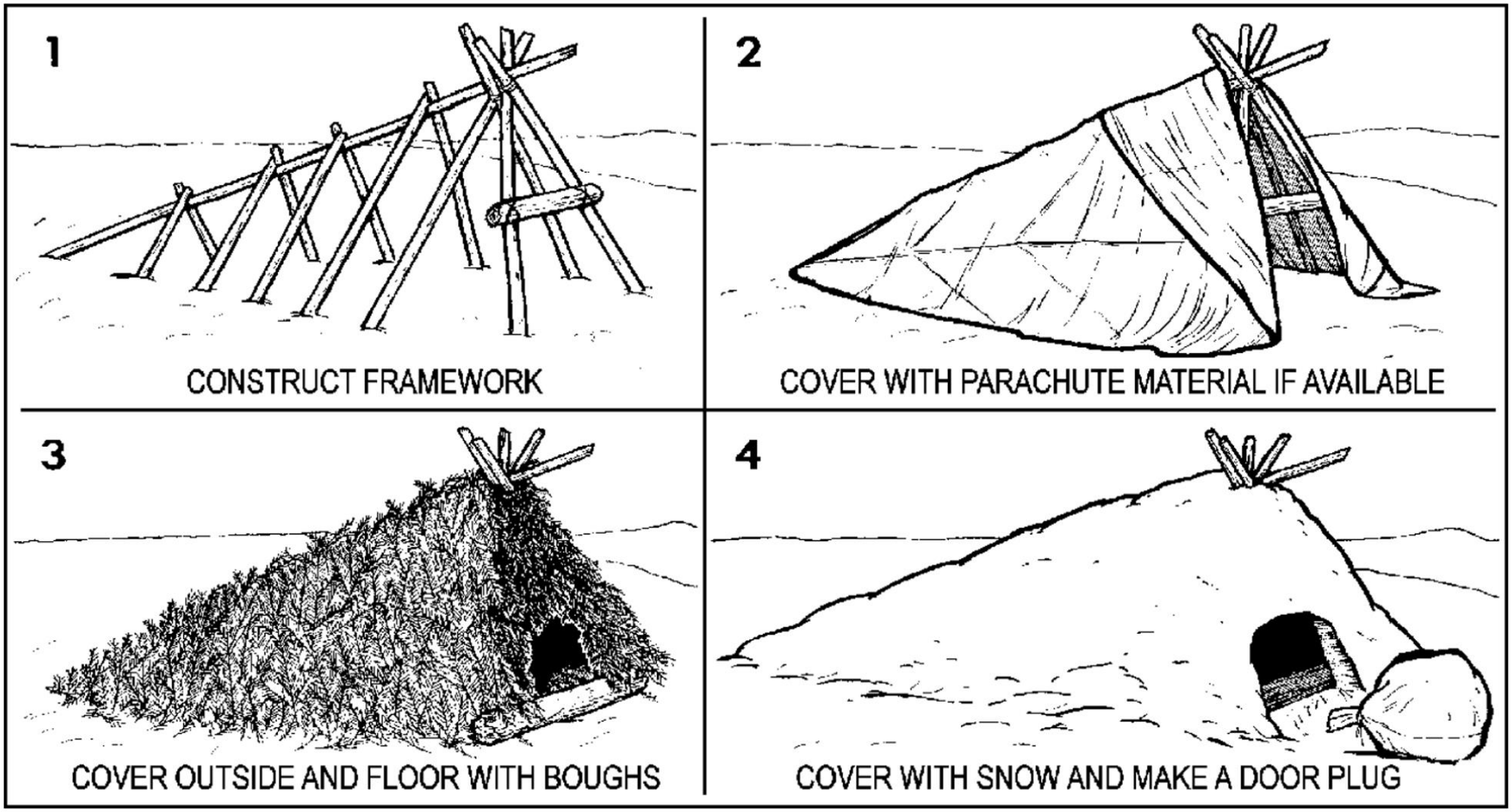


Alternative Snow Shelter



Questions?