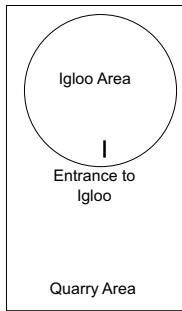


# BSA Troop 21 Quick and Dirty Guide to Building an Igloo

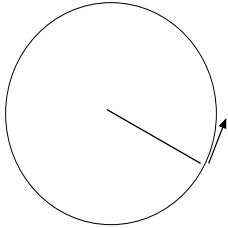
## 1. Select Your Working Area

Select a relatively level area with snow at least 12-18 inches deep. The area should be large enough for you to have a 'quarry' in front of the igloo area. This is the area from where you will be cutting your snow blocks.



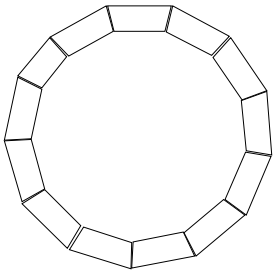
## 2. Scribe the Igloo Area

Using a helper or a stake and string, scribe a circle in the snow a bit larger than you are tall. You want to be able to fit comfortably in the igloo when sleeping, but if you make the igloo too wide, then it will end up being too tall to put the blocks on the top without a ladder or other support.



## 3. Layout the Base Ring

Using a snow saw, square shovel, or block cutting board, cut snow blocks from the quarry area that are at least 1 square by 1 foot in length. The optimal block is 1 foot square by 2 feet in length. Begin cutting blocks right in front of the area you will make as the entrance to the igloo. In order to provide a heat trap, you want the entrance to the igloo to be lower than the level at which you will be sleeping. The quarry area helps serve this purpose. As you lay out the blocks on the base ring, slightly bevel the sides of the blocks to form a trapezoid (the outer edge of the block should be slightly longer than the inner edge of the block). This will help the blocks form a tight seal as you make a ring.



## 4. Optional - Form the Base Ring into a Ramp

Although it is possible to build a fine igloo by stacking concentric rings of snow blocks atop each other, the strongest igloo is formed by taking the time to carve your base ring into a spiral 'ramp'. To do this, remove one block completely from the ring, then use your snow saw / tool to cut the tops of the blocks so that the blocks get taller as you go around the ring, with the last block (back where you started) at normal height. Then replace the block you removed earlier.



## 5. Add Successive Rings of Blocks

Cut additional blocks and add them to the igloo. If you built your base ring into a ramp, just follow the contour of spiral ramp. Start with a 'half' block so that the seams between the blocks are staggered. If you did not form the base into a ramp, simply offset the blocks so that the seams are staggered. In each case, slightly bevel the top of the base ring and each successive ring so that the walls gently curve inward. Keep in mind that you want the igloo just tall enough for you to stand up in the center.



## 6. Cap the Top

When you get to the top, lean the blocks into each other, leaving a small ventilation hole at the top. This is very important if you intend to use a candle lantern or a personal stove in the igloo.

## 7. Cut the Entrance

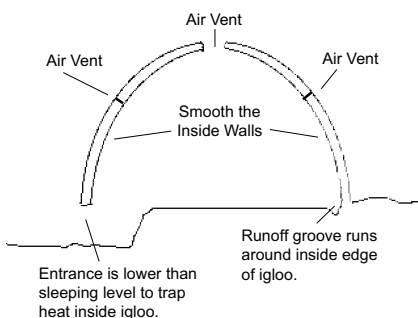
You should now have a quarry area (from where you cut the snow blocks) that results in an area in front of the igloo that is lower than the inside floor of the igloo. Starting at ground level, cut an entrance into the igloo, carving out just enough space from the igloo floor so that you and your gear can get in / out comfortably.

## 8. Protect the Entrance

If it is windy, cut and stack additional blocks to form a wall around the entrance.

## 9. Smooth the Inside Surface / Plug Gaps / Cut Additional Air Vents

That last thing you want is water dripping on you while you sleep. Smooth the inside walls of the igloo with your gloved hand or snow tool so that any condensation or melt will naturally run down the wall to the edges of the igloo. Using your snow tool, dig a small groove around the inside edge of the igloo for runoff.



# BSA Troop 21 Quick and Dirty Guide to Building Snow Caves

## 1. Select a Proper Location

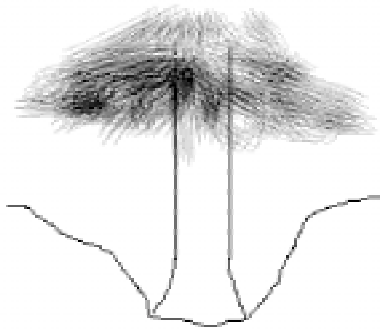
In order to build a snow cave that will shelter you properly from the elements and not collapse on you, you need to select an area with:

- Snow that is deep enough for you to dig a cave with a roof thick enough for people to stand on,
- Snow that is of a consistency that it will form a good shelter (i.e. - not deep powder).

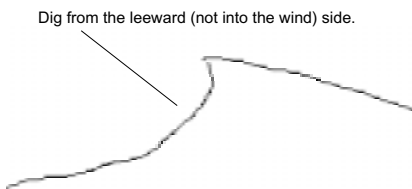
If you cannot find an adequate location with decent snow, you are better off building a lean-to or a makeshift shelter using the plastic bag / tube tent that you carry in your ten essentials kit that you take with you on every outing (hmmmm?).

Good locations for deep snow include:

- Tree Wells** - Branches protect the area immediately surrounding the trunk of a tree, forming a 'well' where the snow is much shallower than the adjacent area. The tree also serves to provide additional shelter from the wind,
- The Leeward Side of Snow Cornices** - On gentle slopes, the wind will often form a cornice (looks like a breaking wave from the side). If the snow is deep enough, the leeward side (the front of the wave) will make a good location to dig out a cave.



Tree wells make good locations for digging a small personal snow cave.



Dig from the leeward (not into the wind) side.

Cornices and snow drifts also make good locations for snow caves.

## 2. Dig the Cave

Unless the snow is quite deep and of a superb nature, you will not be digging out an underground palace. In a survival situation, you are also interested in creating shelter fast. So in most cases, you will be digging out just enough room for you and your gear to fit.

## 3. Smooth the Inside Surface / Make Air Vents If Necessary

The last thing you want is water dripping on you in the middle of the night. Smooth the inside of the cave so that any condensation will run down the sides of the cave to the edges. Dig a small trench / groove along the edge of the cave to carry any runoff out towards the entrance. Poke additional air vents if you feel they are necessary. If you plan to use a candle lantern or small personal stove, additional air vents are a requirement.

## 4. Using the Cave

Unless the snow consistency and the temperature cooperate in just the right way, snow caves have this annoying tendency to want to 'settle'. In other words, the roof slowly collapses during the night. You can wake up with a roof an inch or two from your face.

When you climb into the cave to sack out for the night, enter the cave feet - first, with your head close to the entrance.

Use your backpack or gear to block the entrance to the cave to keep the warmth in and the heat out. In a survival situation, you might have to pack snow up in the entrance.

Whereas igloos allow some ambient light in from the outside, snow caves are absolutely pitch black at night. So take a flashlight with you (from your ten essentials kit, remember?) and place it in a pocket, in your sleeping bag with you, or somewhere where you can find quickly using only your sense of touch.

### YOUR WINTER ESSENTIALS KIT SHOULD INCLUDE:

- Waterproof Matches in Waterproof Carrier
- Plastic Sheet or Tube Tent
- One or Two Plastic Yard / Garbage Bags
- Space / Mylar Blanket
- Personal First Aid Kit
- Flashlight with Extra Batteries or Cyalume Sticks
- Boullion Cubes or Cup of Soup Mix
- Extra Quick Food (Granola Bars, Top Ramen etc)
- Extra Stocking Hat
- Extra Pair of Wool Gloves
- 50ft of ParaCord
- Small 4hr Emergency Candle or Solid Fuel Tabs
- Folding Survival Stove
- Camp Cup for Heating Water
- Extra shoelaces or leather lacing
- Sunglasses - and wear them! (prevent snow blindness)
- Trowel or small foxhole shovel (something to dig with)

Also consult the ten essentials list in your Scout Handbook.

In the Winter, there is little to no margin for error. Therefore assume that you will have to spend the night out of doors, and pack the extra essentials accordingly. Put them all in a fanny pack or zip bag that can easily be carried with you, or tossed into your backpack or day pack.

### WINTER CAMP GEAR IDEAS:

- Wool blanket or bivy sack to use as a sleeve for your sleeping bag (adds 5-10°).
- Pack extra socks, extra underwear, extra base layer clothing.
- Pack gear in large ziploc bags, pastic garbage bags, or other waterproof container. Do not put all your socks together etc.. separate and mix between the bags just in case one bag gets wet.
- Pack an extra stocking cap and extra gloves. Wear a stocking cap to bed at night, as up to 40% of your body heat is lost through the top of your head while you sleep.