

## Why doesn't an igloo melt inside?

The igloo, a temporary winter hunting shelter to the Alaskan Eskimo does, in fact, melt inside, but not to a great extent.

The snowflakes falling outside of the igloo, in the harsh Alaskan winter, quickly melt when they land on its roof, and provide a replacement layer of insulation for the igloo. The ongoing freezing and re-freezing of the igloo, hardens it, and transforms the blocks of snow the Eskimos used in the construction process into a solid, icy, domed refuge. The igloo can now withstand the weight of a massive polar bear, should one happen along and have the urge to play "king of the mountain."



The initial freezing and re-freezing of the igloo takes place at end of the igloo's construction. First, the men must dig a trench into a fresh snow- drift, and, using their knives, cut blocks of snow from it that are specifically shaped to face inward when fully laid out. They then lay the blocks on their edges to form a circle, cutting them to size as they go, so that the end result will be a narrowing spiral. They cap the igloo by dropping a keystone, or block with edges cut wider above than below, into the remaining gap in the roof, and "grout" the gaps between blocks of snow with additional snow.

The men then call in the resident expert, the Eskimo woman, to put the finishing touches on the igloo. Armed with her whale blubber lamp, she enters the structure, lights her lamp to the highest possible setting, beats a hasty retreat, and seals the entrance with a block of ice. Inside the igloo, the snow on the roof begins to melt but, because of its domed design, the water melts down the sides of the igloo, and soaks the blocks of snow. When the blocks are almost completely saturated with water, the Eskimo woman returns, douses her blubber lamp, and allows the frigid outside air to rush in, transforming the fragile snow structure into one of hard, solid ice.

The igloo is now prepared for its temporary tenants, whose body heat, combined with the warmth of one to two blubber lamps, maintain its interior at approximately 13°C (55°F). Not until the winter ends, and the exterior temperature rises, does the igloo begin to melt. Hopefully, the Eskimos will be long gone by then, as the igloo will collapse...dome-first!