

Brrr Bring on the Snow Blanket

Students will be introduced to the concept of insulation and that even surrounded by snow people can stay warm.

Grade Level : 2nd Grade

Objectives:

- Students will be able to identify and describe two different kinds of snow shelters
- Students will recognize good insulation from poor insulation
- Students will be able to explain that even in harsh winter weather conditions, people have figured out ways to stay warm

Materials:

- Blanket, bed sheet or tarp
- Clothes pins
- Box full of good/poor insulators, and fun clothes items
- Pictures and diagrams of igloo and quinzhee
- Story from Keepers of the Earth (Attachment Two)

Time Considerations:

- Preparations: 15 minutes
- Story Time: 10 minutes
- Snow Shelters: 15 Minutes
- Keep Warm: 20 Minutes

Related Activities:

Snow Scientists at Work



Nevada Department of Education Standards

- **E.2.A. Students understand that changes in weather often involve water changing from one state to another.**
- **E.2.A.1 Students know the Sun is a source of heat and light.**

Excellence in Environmental Education Guidelines

- **Strand 2.1-The Earth as a Physical System (A,B,C): Learners are able to identify changes and differences in the physical environment, Identify basic characteristics of and changes in matter and are familiar with the basic behavior of some different forms of energy.**
- **Strand 2.2-The Living Environment (C, D): Learners understand basic ways in which organisms are related to their environments and to other organisms and know that living things need some source of energy to live and grow**

Background

In the snow, people around the world have learned how to insulate. Some people who live in the north where it is snowy most of the entire year learned how to use the snow much like how we use the blanket tent. They build houses out of snow. The air inside a snow shelter will be warmer than it is outside. Two types of snow shelters people build are igloos and quinzhees (draw diagrams on board as illustrated on Attachment 1) . Inuit people live in the far north where trees don't grow and the wind blows the snow flat and packed. (demonstrate on a globe where this is). These people cut blocks of hard snow to build igloos. Athabasca people who live in the

north with trees build quinzhees. The snow in the forests is soft and fluffy and rarely very deep. The clothes we wear also helps us keep warm.



Preparations

Make a "snow fort" by draping blankets over tables and chairs to make a blanket tent large enough for all the students and the teacher to fit together inside. Gather good and poor insulators for children to sort through.

Story Time

Invite the students inside the tent. Tell them that many people that live in cold, snowy places on Earth spend the winter inside their warm shelters. Explain that these people use stories to entertain themselves during the winter. Read, or better yet, tell the Dakota Sioux tale of How Turtle Flew South for the Winter from Keepers of the Earth page 157-158 (Attachment 2). If not this story, any other story including the theme of winter. Ask questions about the story.

Snow Shelters

Ask students why humans would live in a harsh winter environment? Would they always live in a snow shelter? Answer: Above the Permafrost no trees or other materials to build houses. Why would people sometimes live in temporary shelter? Answer: People are hunting for food or got lost and needed a quick shelter. On the board draw an igloo and discuss what an igloo is with the students. After that draw a picture of a quinzee and discuss what it is with the students.

Keep Warm

First, ask students if they have ever heard of the word 'insulation'. Then ask students to help you to define insulation. Have a group discussion as to whether they think they would be able to sleep warmly with using snow as an insulator? Then, help students understand the difference between good and bad insulators by proposing a question like, 'Would your mom send you out to go snow sledding in shorts and a t-shirt or gloves and snow pants?' Explain to the students that you have two boxes of things that may or may not be good insulators.

Talk about space blankets!!

Ask for two volunteers— then split the class into two groups-set a time limit for the two teams to completely dress the volunteer in what they think is the best insulation items. After the time is over, ask the students what they think is the best model.

Evaluation—

Discuss the term insulation by asking questions

- Do you think you would be able to sleep warmly inside a snow shelter?
- What would you need in order to survive the cold?
- Do you think the Athabaskan's slept in the quinzees in shorts and t-shirts?
- What might have they have slept in?

Sources-

(1) Caduto, Micheal. Keepers of the Earth. Fulcrum, Inc., Colorado: 1997, p.157-158

Vocabulary

Quinzhee: a snow shelter built from a great amount of snow that, after firming up each layer, is eventually hollowed out to make a cave

Igloo: A snow shelter built of blocks cut from wind-hardened snow.

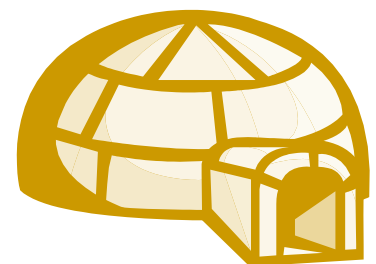
Athabaskan: a Native American people group of eastern Alaska and eastern Canada who build quinzhees on hunting trips.

Inuit: the name of the people who live in the north, often north of the tree line, who build igloos.

Insulation: any material that keeps people and animals warm. Snow can be used to insulate people against the cold.

Extension Activity—

If the students are old enough or if there are a lot of students participating, try making a snow shelter. Here are steps to make a Quinzhee: Walk in a circle the diameter of your shelter. This will be the size of your quinzhee hut. Use shovels, snowshoes, feet, and hands to throw snow from the outside of your circle into the middle and create a mound. Flatten the mound, then add more snow. Once you are satisfied with the pile of snow you have created let it rest for at least three to four hours. "Pin-cushion" the hut with sticks 8-12" long in various areas around the dome. To begin hollowing out the shelter start with the entrance, facing away from the wind. As you form a tunnel entrance to your shelter, have someone on the outside to help shovel away the snow as it comes out. (Also it's safer should something go your structure falls in on you!). Scoop out the ceiling. Use arcing strokes to create a dome shape inside. This will keep your snow structure strong. As you arch out the roof watch for the sticks to tell you when to stop digging. The more you shave snow away from the walls more light will come in. This is your key to know when to stop shoveling. Use the interior snow to reinforce the sides of the hut or build up the entrance walls. Important: carve in small air holes in the sides to ventilation. Use a candle to heat the interior of the quinzhee and harden the walls and ceiling. Destroy the quinzhee when you are finished with it. It could be a danger to others or to wildlife if it caves in.





Igloo



Quinzhee



Attachment Two

Keepers of the Earth:
Native American Stories and Environmental Activities for Children
Written by Michael J. Caduto and Joseph Bruchac
Pages 157-158, 160

CHAPTER 19

How Turtle Flew South for the Winter (Dakota [Sioux]—Midwest)

It was the time of year when the leaves start to fall from the aspens. Turtle was walking around when he saw many birds gathering together in the trees. They were making a lot of noise and Turtle was curious.

“Hey,” Turtle said, “What is happening?”

“Don’t you know?” the bird said. “We’re getting ready to fly to the south for the winter.”

“Why are you going to do that?” Turtle said.

“Don’t you know anything?” the bird said. “Soon it’s going to be very cold here and the snow will fall. There won’t be much food to eat. Down south it will be warm. Summer lives there all of the time and there’s plenty of food.”

As soon as they mentioned the food, Turtle became even more interested. “Can I come with you?” he said.

“You have to fly to go south,” said the birds. “You are a turtle and you can’t fly.” But turtle would not give up. “Isn’t there some way you could take me along?” he begged and pleaded. Finally the birds agreed just to get him the stick.

“Look here,” the birds said, “can you hold onto a stick hard with your mouth?”

“That’s no problem at all,” Turtle said. “Once I grab onto something no one can make me let go until I am ready.”

“Good,” said the birds. “Then you hold on hard to this stick. These two birds here will each grab one end of it in their claws. That way they can carry you along. But remember, you have to keep your mouth shut!”

“That’s easy,” said Turtle. “Now let’s go south where summer keeps all that food.” Turtle grabbed onto the middle of the stick and two big birds came and grabbed each end. They flapped their wings hard and lifted Turtle off the ground. Soon they were high in the sky and headed toward the south.

Turtle had never been so high off the ground before, but he liked it. He could look down and see how small everything looked. But before they had gone too far, he began to wonder where they were. He wondered what the lake was down below him and what those hills were. He wondered how far they had come and how far they would have to go to get to the south where Summer lived. He wanted to ask the two birds who were carrying him, but he couldn’t talk with his mouth closed.

Turtle rolled his eyes. But the two birds just kept on flying.

Then Turtle tried waving his legs at them, but they acted as if they didn’t even notice. Now Turtle was getting upset. If they were going to take him south, then the least they could do was tell him where they were now!

“Mmmph,” Turtle said, trying to get their attention. It didn’t work. Finally Turtle lost his temper.

“Why don’t you listen to...” but that was all he said, for as soon as he opened his mouth to speak, he had to let go of the stick and he started to fall. Down and down he fell, a long long way. He was so frightened that he pulled his legs and his head in to protect himself! When he hit the

ground he hit so hard that his shell cracked. He was lucky that he hadn't been killed, but he ached all over. He ached so much that he crawled into a nearby pond, swam down to the bottom and dug into the mud to get as far away from the sky as he possibly could. Then he fell asleep and he slept all through the winter and didn't wake up until the spring.

So it is that today only birds fly south to the land where summer lives while turtles, who all have cracked shells now, sleep through the winter.

Questions to ask Students:

1. Turtle is a turtle but he wants to fly south with the birds. What happens to him when he tries to do something that he is not meant to do?
2. Turtle gets very impatient to know where the birds are taking him. What happens when he cannot wait and he opens his mouth to ask where they are going?
3. Why do many birds fly south for the winter? What is migration? Do any other animals migrate?
4. Besides migrating, what are some other ways that animals survive the winter?
5. What is hibernation? How does an animal change when it is hibernating? Name some animals that hibernate.
6. How do humans survive during the winter?