

# For Creative Minds

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## Polar Seasons

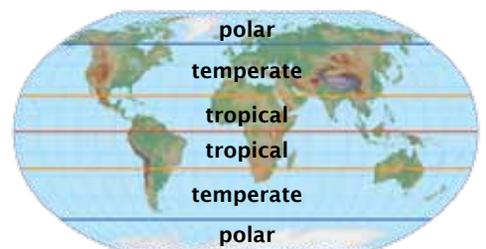
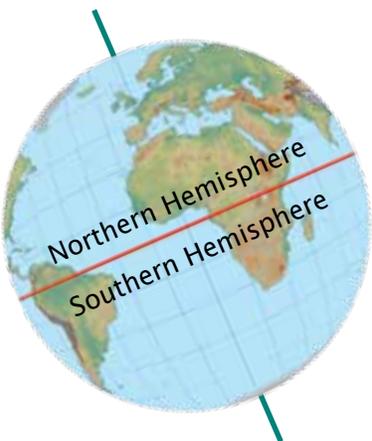
In the arctic winter, animals don't see the sun for six months. For almost three of those months, there is no sunlight at all. The rest of the time, the sun stays just below the horizon, giving them short, twilight days and long, dark nights.

In the summer, arctic animals have six months of sunlight with no darkness.

When winter comes, the animals have to be prepared for the months of darkness and cold. Some animals grow a thick winter coat, prepare a warm den, or even hibernate for the whole winter. But why doesn't the sun rise in the winter?

The Earth rotates on an axis that has a 23.4° tilt. When one hemisphere is tilted toward the Sun, it has longer days and more sunlight. At the same time, the other hemisphere has shorter days and less sunlight. The season in the northern half of the world is always the opposite of the season in the southern half.

The polar region in the northern hemisphere is called the Arctic. The polar region in the southern hemisphere is called the Antarctic. At the earth's poles, the sun stays low in the sky, even in the middle of summer. In the winter, the sun doesn't come up at all for months at a time.



# Arctic Skies

Match the following descriptions to the images.

In temperate and tropical regions, twilight happens every night when the sun goes down. But in polar regions, twilight can last for months. **Arctic twilight** happens in places north of the Arctic Circle. In the winter, the sun is just below the horizon. During the daytime, the sun never appears above the horizon, but there is dim light.

The **northern lights**, or Aurora borealis, are colorful patterns of lights in the sky. They are usually green or pink, but can sometimes be red, yellow, blue, or violet as well. The lights are caused by tiny gas particles (molecules) in the earth's atmosphere. When charged particles from the sun reach the atmosphere, they collide with the gas molecules and create colorful patterns.

**Polaris**, or the North Star, is visible from most of the northern hemisphere. The farther you are from the North Pole, the lower Polaris is in the sky. If you can find the constellation "The Big Dipper," follow an imaginary line from the two outermost stars in the dipper's bowl. That will point to the North Star.

**Sun dogs** are a type of halo. Tiny ice crystals in the atmosphere bend the sun's light. This makes two bright lights, or sun dogs, appear on either side of the real sun. They can be seen from anywhere in the world, not just in polar regions.

1.



2.



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# Arctic Vocabulary

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## Inuit Vocabulary

The Inuit are native peoples of Alaska, Canada, and Greenland. There are many different groups of Inuit people. The Inuit have lived in the Arctic for more than 4,000 years.

**Aput:** snow ground covering

**Inuit:** a native person in the Arctic region

**Kamik:** waterproof boot

**Masak:** wet, falling snow

**Putak:** crystalline snow that breaks into grains



## Weather Vocabulary

**Arctic twilight:** the sun is not visible, but it is not completely dark

**Arctic winter:** no sunlight at the North Pole, from late September to mid-March

**Northern lights:** colored and moving reflections of the sun

**Polaris:** the North Star, directly overhead at the North Pole

**Sun dogs:** bright points on each side of the sun

**Whiteout:** sky and snow are the same color of white



## Geologic Vocabulary

**Frost boils:** pools of partially-melted water over ice

**Hummock:** snow-covered ice mound

**Pingo:** mound of dirt and rocks

**Tundra:** ice desert with no trees



## Life in the Cold: Animal Fun Facts

Collared lemmings are small rodents that live on the tundra of North America. They weigh only 4 ounces (112g), about the same as a smartphone. Collared lemmings grow up to 6.3 inches (16cm) long.



Collared lemmings have reddish-brown fur for most of the year, but they grow a white coat in the winter. This camouflage helps them hide from predators.

In the winter, collared lemmings dig burrows in the snow. Their burrows have tunnels that connect different rooms. Nests are lined with grass, feathers, and musk-ox wool to keep the baby lemmings cozy and warm.

Caribou, also called reindeer, live in groups called herds. They have large hooves that allow them to walk on top of the snow without breaking the icy surface. Caribou weigh up to 700 pounds (317kg). On average, they are 4 feet (1.2m) tall at the shoulder.



Both the females and the males have large antlers. Each year, the caribou drop their antlers and grow new ones in the spring.

Caribou eat lichen. Lichen might look like a plant, but it is not. Lichen is made of a fungus and an algae living together. In the northern hemisphere, lichen often grows on the north side of trees or rocks.

Polar bears are the largest land carnivore (meat-eater) in the world. Polar bears grow up to 9 feet (2.7m) tall and 1300 pounds (560kg).



Polar bears spend most of their lives on the ice that floats on the Arctic Ocean. They have a layer of fat (blubber) and thick fur all over their bodies to help them stay warm. Polar bears have black skin underneath their white fur.

Polar bears eat seals and other animals for food. They look for holes in the ice where seals come up to breathe. Polar bears travel thousands of miles every year to find food.

Arctic foxes have short, round bodies and thick, furry tails that are almost half as long as the fox's body. Their bodies grow to 26 inches (66cm) long, about the same size as a German shepherd. But they are very light; at less than 10 pounds (4.5kg), arctic foxes weigh the same as a small terrier.



Arctic foxes curl up to sleep so that their tails cover their noses. This helps keep them warm in their cold, snowy habitat.

Arctic foxes use their sense of sound to hunt prey. They listen for small animals scurrying in burrows underneath the snow. They leap into the air and break through the icy snow as they land on top of their prey.