

# For Creative Minds

This For Creative Minds educational section contains activities to engage children in learning while making it fun at the same time. The activities build on the underlying subjects introduced in the story. While older children may be able to do these activities on their own, we encourage adults to work with the young children in their lives. Even if the adults have long forgotten or never learned this information, they can still work through the activities and be experts in their children's eyes! Exposure to these concepts at a young age helps to build a strong foundation for easier comprehension later in life. This section may be photocopied or printed from our website by the owner of this book for educational, non-commercial uses. Cross-curricular teaching activities for use at home or in the classroom, interactive quizzes, and more are available online. Go to [www.ArbordalePublishing.com](http://www.ArbordalePublishing.com) and click on the book's cover to explore all the links.

## Adapted for Life in the Arctic



Polar bears live in the cold Arctic in the northernmost part of the Earth. The Arctic includes the Arctic Ocean and the land around it. Some of the Arctic Ocean is frozen sea ice. Some sea ice stays frozen all year long—even in the summer. Other sea ice freezes in the winter but then thaws in the summer.

During the winter, the Arctic is tilted away from the sun so there is little light or heat. Winter is cold and dark in the Arctic. During the summer, the Arctic is tilted toward the sun and it rarely gets dark. The weather might be warm, but it doesn't get hot.

Plants and animals, including humans, that live in the Arctic have adapted to the cold weather, the dark winters, and the light summers. Most of polar bears' lives are spent on and around sea ice and snow. Their bodies are designed to keep them warm on land and while swimming in the icy water.

Even though it is cold and dark, winter is a good time for polar bears to eat their favorite prey, seals. Seals live in the ocean, but breathe oxygen from the air. Seals poke breathing holes in the ice so they can get air. Polar bears hunt near these breathing holes and grab a seal when it comes up to breathe. When the ice melts the seals don't need breathing holes, and it's harder for the polar bears to find and catch their prey.

Polar bears do not live in dens except when female polar bears give birth. If the weather is unusually cold, polar bears might dig a temporary shelter in the side of a snowdrift. Otherwise, the polar bears roam for hundreds of miles to find food.



Polar bears have black skin under their fur to trap warmth and hold onto heat.

They have two layers of fur. The thick underfur is like a blanket—it insulates the bears to keep them warm. The outer layer of fur contains long guard hairs that are clear and hollow like straws. These hairs act like a wet suit to keep the underfur warm and dry. Polar bears can easily shake off water, snow, and ice.

We see white or cream-colored fur because of the way the sun reflects off the hollow hairs. The white-looking fur helps the bears blend (camouflage) into the snow and ice.

Polar bears shed and replace their fur (molt) every year during May or June when it is relatively warm.

Like other types of meat eaters, polar bears have sharp teeth to grab prey and tear meat.

Polar bear paws can be up to 12 inches (30 cm) wide. The wide paws act like snowshoes by spreading the bears' weight over the snow. The front paws are round in shape and the back paws are long. Each paw has five toes with claws that are used to grab prey and to run through the snow or on the ice. Pads on the bottom of the paws help prevent the bears from slipping on the ice. Hair grows between the pads and toes to prevent slipping and to keep the paws warm.

Polar bears swim for long distances. They have an extra, clear eyelid so they can see underwater with their eyes closed! When swimming, their ears lie flat and their nostrils close so water doesn't get in.



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## Polar Bear Math

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It is pretty cute seeing photographs of Kali as a cub with zookeepers. But when Kali is fully grown, he will be too big to play with humans. Even though Kali is growing up around people in zoos, he is not a pet. He has instincts that could be dangerous to humans around him as he gets older and bigger.

Use measuring tools (a scale and a yardstick or tape measure) to compare the size of polar bears to things around you. What are some things that are similar in weight, length, or height? How do YOU measure up to a full-grown polar bear?

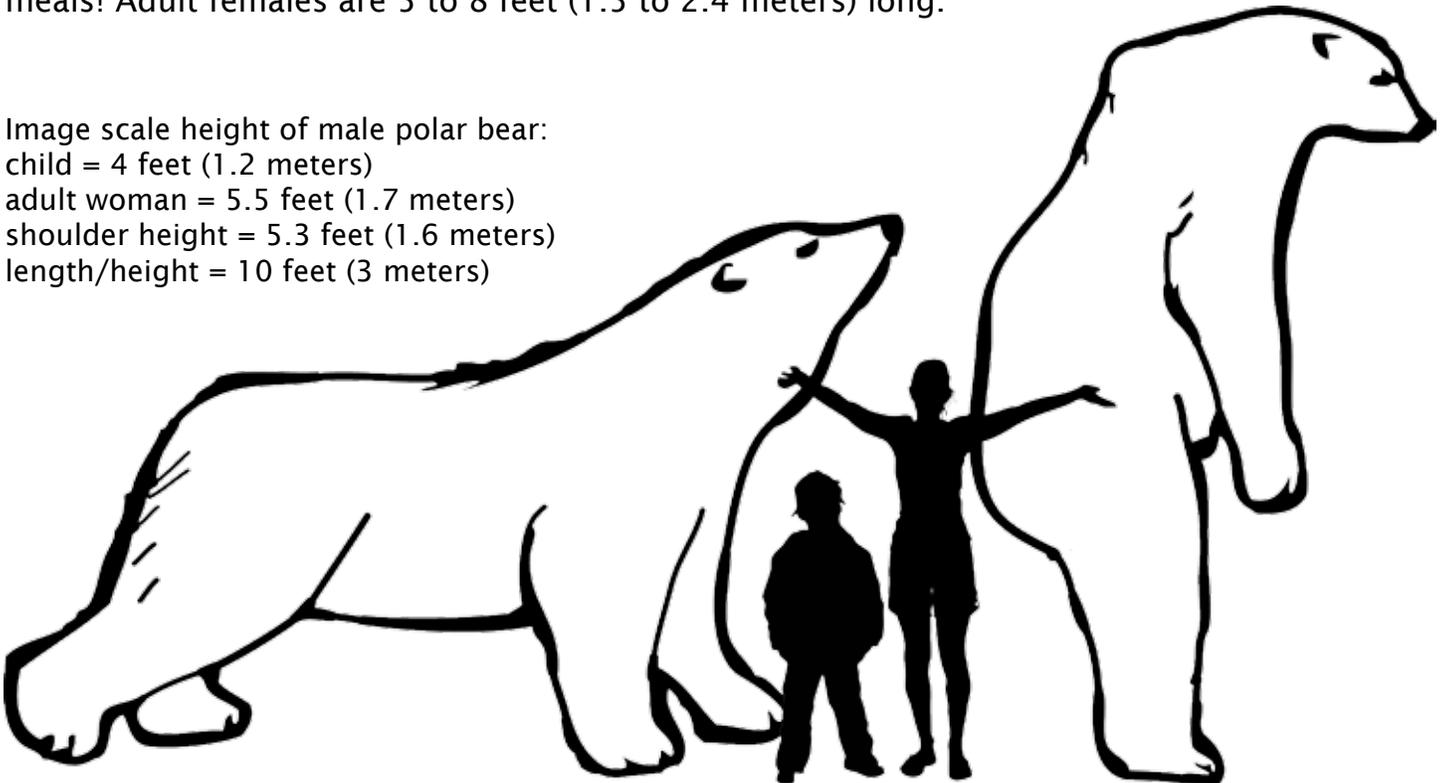
When born, polar bear cubs weigh 1 to 1.5 pounds (less than a kilogram). The cubs are around 12 inches or one foot long (30 cm). Males are larger than females, even at birth!

By the time the mother and cubs leave the maternity den, the cubs may weigh up to 33 pounds (15 kilograms). When Kali was found and taken to the Alaska Zoo, he weighed 18 pounds (8 kilograms). Zookeepers estimate that he was three months old.

Males (boars) are considered fully grown when they are 10 to 11 years old. Adult boars weigh anywhere between 770 and 1400 pounds (350 to 650 kilograms). They are 6.5 to almost 10 feet long (2 to 3 meters) and stand 5.3 feet (1.6 meters) at the shoulders.

Female polar bears (sows) are considered adults and start having young when they are five or six years old. Sows weigh between 300 and 550 pounds (150 to 250 kilograms) and can weigh twice as much when they are pregnant. The extra weight from pregnancy is not the cubs, but is extra fat that the females store to get through the winter. Once they enter the maternity den in the fall, they don't come out until spring. That's a long time to go between meals! Adult females are 5 to 8 feet (1.5 to 2.4 meters) long.

Image scale height of male polar bear:  
child = 4 feet (1.2 meters)  
adult woman = 5.5 feet (1.7 meters)  
shoulder height = 5.3 feet (1.6 meters)  
length/height = 10 feet (3 meters)



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## Polar Bear Life Cycle

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Adult polar bears usually live alone. Polar bears gather together in feeding and breeding areas in April and May. Male polar bears will fight for the females.

Pregnant females will dig maternity dens between late August and the middle of October. They will not eat again until they leave the den with their cubs in the spring.

A polar bear mother usually gives birth to twins, but can also have just one cub or triplets. Cubs are born between November and January. When born, the cubs' fur is very thin so they snuggle up next to their mother to stay warm. Cubs don't open their eyes until they are about a month old.

The cubs spend the first few months of their lives nursing from their mother. They begin to walk when they are around two months old.

Mother and cubs leave the den in late March or early April. They will stay near the den for 1½ to 2 weeks before heading to the sea ice to get food. The cubs eat their first solid food when they are three or four months old.

Cubs learn to hunt by watching their mother. They can usually catch a seal or other food when they are a year old. Cubs stay with their mothers until they are 2 to 2½ years old. Then they will strike out on their own.

Scientists estimate that male polar bears in the wild live 15 to 18 years and females may live into their twenties.

