

Polar Bear Adaptations

Polar bears live across the Arctic in some of the coldest places on the planet. They walk across Arctic sea ice looking for their main prey—seals—and they have some traits that help them do this and survive in this cold environment. Polar bears have very thick fur that helps keep them warm. In fact, they have two layers of fur: a thick, fuzzy, downy layer right next to their skin, which would be like if you wore a woolly sweater, and a layer of guard hairs, or longer hairs, which acts like their raincoat. These layers help keep them warm even when it's minus 40 degrees Fahrenheit!



Polar bear hair is clear and hollow. It looks white to our eyes. The hollowness helps trap warm air against their bodies. Polar bear skin is black. Scientists do not really know why, but they think it might help them absorb heat and stay warm.

Polar bears have an amazing sense of smell. Their nose has a large surface area to pick up scents in the air. They can smell prey over 1 kilometer (about half a mile) away when the wind is right.



Polar bears have huge paws. Their paws can be up to 12 inches across, which is about the size of a dinner plate. These big paws help spread out the polar bear's weight on the sea ice so they can walk on it even if it's very thin.

Polar bear feet can get smelly. When females are ready to mate, they send out signals through smelly footprints on the sea ice. A male polar bear who picks up the scent will follow a female, sometimes for days.

Polar bear paws are also sticky. They have bumps, or papillae, on the bottom of their feet that help grip the ice as they are walking—like winter tires or snow boots. They also have fur on their feet to help keep them warm and really sharp claws that give them traction on the ice so they do not slip. Their claws are thick and sharp and help them pull out slippery seals from the water.



Polar bears also have very big heads with really sharp teeth that help them hunt their prey. They have big canine teeth at the front and very sharp back molars that help them shear blubber and fat off of their prey. The diastema, or the gap between the sharp front canines and the back molars, is perfect for helping polar bears grab prey.

All of these adaptations make polar bears perfectly suited to live in the Arctic. They need sea ice to travel, hunt, find mates, and sometimes to den. You can help conserve this sea ice.

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Polar bears live in the Arctic, where they hunt seals on the sea ice. But climate change is melting the polar bear's sea ice-filled home. To save sea ice, we must move away from burning fossil fuels like oil, coal, and gas. These fuels produce gases that act like a blanket around the Earth, heating up the planet and causing the sea ice to melt.

The good news is that we have the power to change this! We can switch to renewable energy sources like solar, water, and wind. This will save polar bears and create a better world for all of us. Here are four examples of how you can help:

1. **Talk about it.** You are already doing this! Discuss climate change and solutions with your families, teachers, and other adults. By showing you care, you can inspire grownups to get involved.
2. **Use the “two up, two down” rule.** Find out what type of energy is used to heat and cool your school or home. Challenge your family to bump the temperature two degrees up in the summer and two degrees down in the winter. This will help reduce your energy use—and save a little on your family's energy bill!
3. **Bike or walk.** You can help reduce carbon emissions from vehicles by riding your bike or walking and encouraging your friends and family to the same. Remember: Safety is always important, so only bike or walk when it is safe to do so.
4. **Share “Flat Nanuk.”** Print out [Polar Bears International's Flat Nanuk](#) polar bear and add a message to his sign. Then get creative with him: Tape him to a window or take him with you to the grocery store. Take a picture and post it on social media or send it to Polar Bears International!



Lincoln Park Zoo is a Polar Bears International Arctic Ambassador Center. Thank you for helping us conserve polar bears and the sea ice they depend on.

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Extension Questions

1. How does having two different types of fur help polar bears?

2. Explain the importance of the diastema, the gap between a polar bear's canine teeth and molars.

3. Choose one way to help save sea ice. Why do you want to try this action?

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Label each trait that helps polar bears survive in the Arctic.
What does each adaptation do?

An amazing sense of

Use:

Two layers of

Use:

Very sharp

Use:

Thick, sharp

Use:

Big, furry

Use:

