

Polar Bear Adaptations

Polar bears live across the arctic in some of the coldest places on the planet. They walk across the 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: 1.) A thick, fuzzy, downy layer right next to their skin, which would be like us wearing a wooly sweater; 2.) A layer of guard hairs, or longer hairs, which acts like their raincoat. Their 2 layers of fur help keep them warm even when it's -40 degrees!



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 so much surface area to pick up scents in the air. They can smell prey over one kilometer (about one-half mile) away when the wind is right.

Polar bears have huge paws. They 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 along really thin ice.

Polar bear feet can also 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 sent will follow a female, sometimes for days.

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



Polar bears also have very big heads with really sharp teeth that help them hunt their prey. They have big canines 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 front sharp canines and the back molars, is perfect for helping polar bears grab a seal out of the water and pull it up onto the sea ice.

All of these adaptations make a polar bear 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. Continue reading to learn more!

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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 home. To save sea ice, we must move away from burning fossil fuels like oil, coal, and gas. Why? Because these fuels produce gases that act like a blanket around the earth, heating up our 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! Talk about climate change and solutions with your families, teachers, and other adults. By showing you care, you can inspire grownups to get involved.
- 2.) **Two up, two down** – 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 Bear International's “Flat Nanuk” polar bear and add a message to his sign. Then get creative with sharing: Tape him to a window, post a photo on social media, or take him with you to the grocery store.



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” or 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?

