

Name _____

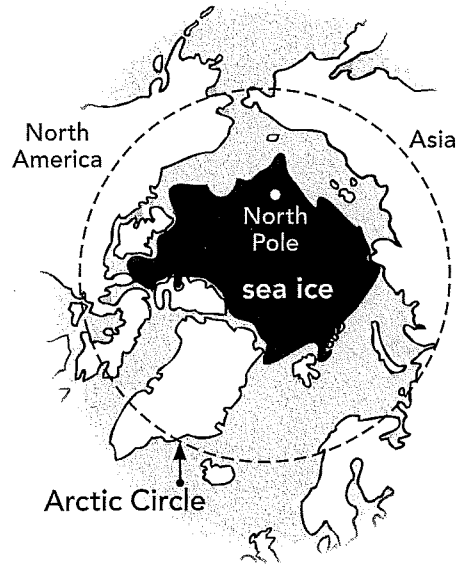


Day 1

Weekly Question
If the ice cap melts, why can't polar bears just adapt?

Polar bears live in a world of snow and ice. They make their home along the **tundra** of the Arctic Circle, in the northern parts of Alaska, Canada, Greenland, Norway, and Russia. Although the bears do spend time on land and in the ocean, most of their lives are spent on a layer of sea ice called the *polar ice cap*.

Polar bears evolved during the Ice Age, when a large part of the Northern Hemisphere was covered in ice. During this time, polar bears developed specialized adaptations for the arctic conditions. These adaptations allowed the bears to exploit the most plentiful resources. But today, their niche has been greatly reduced. Their sea ice habitat is rapidly shrinking due to global warming. So polar bear populations are getting smaller, and the species is now **threatened**. There are currently only 20,000 to 25,000 polar bears left in the wild.



Vocabulary

threatened
THREH-tind
at risk of becoming endangered

tundra
TUN-druh
a vast arctic plain of permanently frozen ground

A. What are the three types of habitats in the Arctic where polar bears spend their time?

1. _____ 2. _____ 3. _____

B. Explain how the polar bears' niche has changed since they first evolved.

C. Check the box next to the phrase that completes the analogy.

Tundra is to **land** as _____.

- | | |
|--|--|
| <input type="checkbox"/> Alaska is to Arctic Circle | <input type="checkbox"/> Ice Age is to ice cap |
| <input type="checkbox"/> sea ice is to ocean | <input type="checkbox"/> Arctic Circle is to North Pole |

Name _____

Daily Science

**Big
Idea 2**



WEEK 3

**Day
2**

Weekly Question

If the ice cap melts, why can't polar bears just adapt?

Polar bears are highly dependent on sea ice. Because there are no plants in the polar bears' habitat, they have adapted to a **carnivorous** diet that consists almost entirely of seals. Polar bears hunt seals using the sea ice as a platform. A polar bear will sit near a hole in the ice and wait for a seal to pop its head up to breathe. Polar bears also stalk seals that rest on the edges of the ice.

The bears' hunting season follows the natural changes of the ice. In the wintertime, the Arctic Ocean freezes over, providing polar bears more ice from which to hunt. The larger hunting grounds, in turn, allow the bears to catch more seals. In the summertime, the ice cap partially melts, and the polar bears cannot hunt as much. The bears rely on stores of fat that they build up during the winter to last them through the lean summer months.



Vocabulary

carnivorous
kar-NIV-uh-rus
eating only meat

A. Answer the questions.

1. Why do polar bears hunt less during the summer?

2. What are two ways that polar bears hunt seals?

B. Complete the sentence.

Polar bears are _____, which means that they do not eat plants.

Name _____

Daily Science

Big
Idea 2

WEEK 3

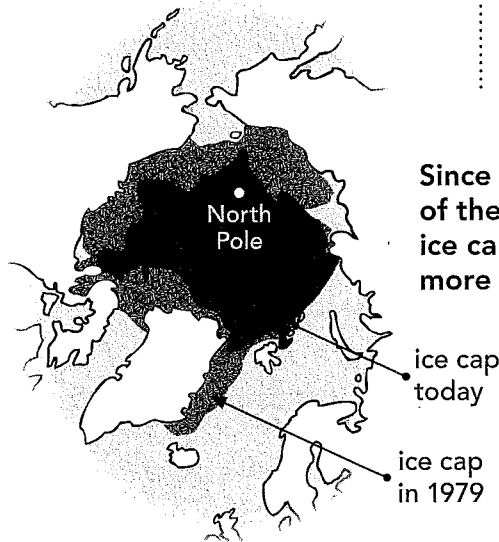
Day
3

Weekly Question

If the ice cap melts, why can't polar bears just adapt?

Because global warming is causing the sea ice to melt earlier each spring and to form later each fall, the polar bears' hunting season is getting shorter. As a result, they have less time to build up fat. This has an especially negative impact on their reproduction. Most female polar bears leave the ice in the fall to give birth on land. The mothers feed the cubs with milk and survive off their own fat reserves. However, since the bears now have less time to hunt, they aren't storing up enough nutrients and are giving birth to **malnourished** cubs.

In the early spring, the mothers and cubs must return to the ice to hunt or they will starve. But because the ice is melting sooner and retreating farther from the coast, the bears must now swim a greater distance to reach their hunting grounds. Polar bears are strong swimmers, but the longer distances are taking their toll. More and more bears are drowning before they reach the ice.



Since 1979, the size of the summer polar ice cap has shrunk more than 20%.

Vocabulary

malnourished

mal-NUR-isht
affected by
improper nutrition
or not enough
food

Cross out the incorrect word or words and write the correct ones above them to make each statement true.

1. Female polar bears return to the ice in the fall to have their cubs.
2. Polar bear cubs live off their fat reserves all winter.
3. Some cubs are well-fed because their mothers aren't getting enough nutrients.
4. Because the ice is melting later in spring, polar bears have farther to swim.

Name _____



Day
4

Weekly Question

If the ice cap melts, why can't polar bears just adapt?

Despite their specialized adaptations for arctic conditions, polar bears are adjusting to the melting ice by extending their range southward and spending more time on land. They are changing their diet to include reindeer, rodents, seabirds, and vegetation. People have even found them rummaging around in their garbage!

However, polar bears aren't very well adapted for this new environment. With a four-inch-thick layer of blubber that provides warmth, polar bears get overheated at temperatures above 50°F. Their thick, white fur, which offers additional warmth and perfect **camouflage** in snow-covered landscapes, makes them obvious on dry land. For polar bears to survive, they will need to develop new hunting and **foraging** techniques before the polar ice cap completely melts. They will also need to evolve physical adaptations that are better suited to warm-weather conditions. No one knows exactly how long it will take for the ice to disappear, but with luck, the polar bears will have enough time to adapt.

Vocabulary

camouflage

KAM-oh-flahj
an organism's natural coloring or form that enables it to blend into its surroundings

foraging

FORE-uh-jing
searching for food

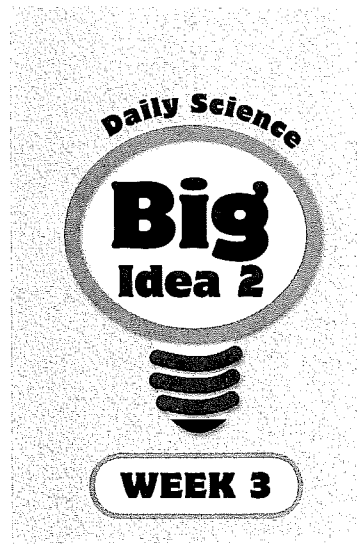
A. Use the vocabulary words to complete the sentences.

- 1. An owl's spotted feathers provide _____ in the trees.
- 2. We often see deer _____ for acorns in the woods.

B. Blubber and a polar bear's diet are two examples of adaptations. Which one is likely to change faster? Explain your answer.

C. Some people say that evidence of polar bears on land is a sign that the bears' population is growing. Do you agree or disagree with this statement? Why or why not?

Name _____



Day 5

Weekly Question

If the ice cap melts, why can't polar bears just adapt?

A. Use the words in the box to complete the sentences.

foraging camouflage malnourished
tundra carnivorous threatened

1. Not only are polar bears _____, but they are also adapted specifically to eat seals.
2. Polar bears make their home in the arctic _____.
3. Because the sea ice is melting, polar bears have less time to hunt and are often _____. This has _____ the survival of the species.
4. Polar bears are extending their range south, _____ for food along the coastline.
5. While a polar bear's white fur acts as _____ on the ice, it stands out on land.

B. Which of these adaptations will improve a polar bear's chance for survival in warmer weather? Fill in the bubble next to the correct answer.

- (A) having white fur (C) being a strong swimmer
(B) having a thick layer of blubber (D) hunting on sea ice

C. Most bears eat both plants and meat. Explain why polar bears have adapted to become carnivorous.
