

Journey to the Poles: Science Lab Explorations

Topics covered: From glaciers and ice shelves to reindeer and weddell seals, students discover the unique characteristics and inhabitants of Earth's polar regions. They'll compare the geography and climate of the Arctic Circle and Antarctica and examine skulls and fur samples of animals that live in both places. They'll take a closer look at the adaptations of Antarctica's weddell seal--Earth's southernmost dwelling mammal. They'll try on extreme cold weather gear used by people who live and work in the polar regions.

Ages: 3-5

Purchase Details: Science Lab Explorations - \$5 per student

Programs can be reserved by phone: 901-636-2362

Wednesday - Saturday, 10:30 am - 5:30 pm

Objectives:

1. Identify characteristics of Earth's polar regions including geography, weather and climate.
2. Investigate adaptations of animals that live in the Arctic Circle and Antarctica including coverings, skeletal structure and dietary needs.
3. Examine physical and behavioral adaptations of Antarctica's weddell seal, the mammal that lives further south than any other in the world.
4. Explore the ways humans must adapt to live in the extreme environments of both polar regions--such as wearing special clothing and practicing safety techniques used during whiteout conditions.

Vocabulary:

precipitation

temperature

permafrost

whiteout conditions

tundra

desert

prey

predator

insulation

adaptation

camouflage

herbivore

carnivore

omnivore

Fun Facts:

- Antarctica is the 5th largest continent in the world and holds 90 percent of Earth's ice. By treaty it serves as a peaceful and cooperative international research zone.
- Penguins only live in the Southern Hemisphere. Gentoo Penguins swim at speeds of up to 22 mph making them the fastest of the 17-penguin species.
- The Svalbard Global Seed Vault was built into Arctic permafrost on a Norwegian island about 800 miles from the North Pole. It provides safekeeping for 4,000+ species of seeds.

Web Resources:

PolarTREC Teachers and Researchers Collaborating-- <https://www.polartrec.com>

For Alex Eilers, PPFM Education Manager's expedition journals--

<https://www.polartrec.com/expeditions/weddell-seals-in-the-ross-sea-2012>

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Polar Bears International-- www.polarbearsinternational.org

Fun Facts about Penguins-- <https://www.smithsonianmag.com/science-nature/14-fun-facts-about-penguins>

United States Antarctica Program-- <https://www.usap.gov/>

Museum Resources:

- **For Your Classroom:** Check out a *Skulls--Predator/Prey Suitcase Exhibit*. It is packed with skulls of 15 different mammals, birds, reptiles and amphibians. Dig out the fish skeleton, animal x-rays and food chain activities. Use the included calipers to take skull measurements. Reserve a *Weddell Seals Passport* for a closer look at this Antarctic mammal. Borrow the *Extreme Cold Weather Gear Passport* to try on clothing like that worn by scientists collecting research data at McMurdo Station along the Ross Sea.
- **In the galleries:** Would you like to take a "selfie" with a polar bear? You'll find the museum's polar bear displayed in the *Clyde Parke Miniature Circus Gallery* on the upper floor of the mansion. This bear's original home was the Chukchi Sea off the northwest coast of Alaska.

Where: Pink Palace Discovery Lab or Theater (for 33-100 students) or Classroom (for 15-32 students)

When: August-May Tuesday-Friday at 9:30 & 11 am 45-60 Minutes

- **Standards:**
 - (Grade Level) K-2
- **Tennessee:**
 - GRADE 3: 3.LS1, 3.LS4
 - GRADE 4:
 - GRADE 5: 5.LS3
- **Mississippi:**
 - GRADE 3: L.3.1, L.3.2
 - GRADE 4:
 - GRADE 5: L.5.3B
- **Arkansas:**
 - GRADE 3:
 - GRADE 4: 4-LS1-1
 - GRADE 5:
- **Catholic Diocese:**
 - GRADE 3: 3.II.2, 3.II.3
 - GRADE 4:
 - GRADE 5: