

Polar Bears & Penguins: Differences between Antarctica & the Arctic

Integration: Science; Geography; Social Studies; Language Arts

Grade Levels: 3-6

Time: 1-2 class periods

Materials:

- Globe
- World map (with longitude and latitude)

Objectives:

Students will:

1. Explain the differences between Antarctica and the Arctic.
2. Evaluate information to choose which pole they would like to visit.
3. Formulate the reasoning for their choice.

Lesson:

Full Group

1. Ask students to point out Antarctica on a globe or map. Ask them if they know where the Arctic is. Have them point to it on the globe or map.
2. Ask students what they think the Arctic is like based on its location and what they know about Antarctica. (cold, icy, no people, few animals, etc.)
3. Inform students that although the Arctic is also a polar region, there are many differences between the Arctic and Antarctica.
4. Write the characteristics of the regions on the board as the topics are covered and the questions are answered.
5. Ask, "Is there land or water under the ice of Antarctica?" (land).
 - a. Tell students that in the Arctic the ice covers an ocean.
 - b. Antarctica is land surrounded by water. The Arctic is water surrounded by land. Have the students investigate this by looking at the globe or map of the world.
6. Inform students that the ice is thicker in Antarctica.

7. Tell students that the temperature of Antarctica and the Arctic is affected by this difference.
 - a. Ask students if they think the Arctic or Antarctica is colder. Remind them that they learned that Antarctica is the coldest place on earth.
 - b. Water holds heat better than land does. Because the Arctic is water, it is warmer.
 - c. The annual mean temperature at the North Pole is -1°F (-18°C). The annual mean temperature in Antarctica is -58°F (-50°C).

8. Ask “Are there differences in the seasons between the two poles?” Tell students to draw on their knowledge of the hemispheres.
 - a. The seasons are reversed because they are in opposite hemispheres.
 - Arctic: winter begins in December
 - Antarctica: winter begins in June

9. Ask “What types of animals live in the Arctic and what types live in Antarctica?” Tell students that this question confuses many people.
 - a. Arctic: polar bears, musk ox, reindeer, caribou, fox, hare, wolf, lemming, whales, porpoises, seals, birds, insects, spiders and crustaceans.
 - b. Antarctic: penguins, other birds, whales, porpoises, seals, insects, mites.
 - The majority of these animals spend time on land but they do not live their entire lives there.
 - Animals are not found in the interior of the continent except for insects and mites because it is so cold and there is little food.
 - c. There are no polar bears in Antarctica; there are no penguins in the Arctic.

10. Ask students “Who lived in the Arctic and Antarctica and who lives there now?” Use a map or globe to point out the following.
 - a. There are no native people in Antarctica. There is a record of native people living around the Arctic.
 - b. Today, only the people working in the research stations live on Antarctica (look at 60 degrees S and southern). There are about 2 million people that live north of 60 degrees N around the Arctic. Have students look at a globe or map and name the countries that border the Arctic, i.e. north of 60 degrees N (Canada, U.S., Greenland, Iceland, Norway, Sweden, Finland, Russia).

OPTIONAL: Have students create a Venn diagram based on the characteristics of the Arctic and Antarctica.

11. Have students synthesize what they have learned by writing about which Pole they would rather visit and why. The description can be written on a separate piece of paper or may be entered into a learning log/journal.

Assessment:

Teachers will assess:

1. Student's ability to distinguish between the Arctic and Antarctica.
2. Student's ability to judge the information they have and make an informed decision.
3. Student's ability to articulate the reasoning behind their decision.