



Polar Animals

4-8 Classroom Activities

Penguins in the Arctic?

OBJECTIVE

Students will understand the differences between the Arctic and the Antarctic and the animals that live in each habitat.

ACTION

1. Using a large writing surface, draw two columns, one labeled "Arctic" and the other "Antarctic."
2. Begin a class discussion by asking students to describe a few differences between these two places. These could be climate, human exploration, land area, ocean area, or others. Write the answers in the columns on the writing surface.
3. Divide students into pairs.
4. Distribute cut up puzzle pieces and construction paper.
5. Ask students to fold the construction paper in half along the width. Label the top half "Arctic" and the bottom "Antarctic."
6. Using only the puzzle pieces with animal images, ask students to hypothesize which animals live at which pole. Place the images on the correct side of the construction paper.
7. Students use the remaining puzzle pieces to create the correct food webs. How many pairs of students guessed correctly?
8. Have students compare the animals that live in the Arctic and the Antarctic. Relate the prime differences discussed earlier in step 2 to characteristics of the animals that allow them to survive in one region but not another.
9. Based on the food webs created, have students infer why penguins would probably not survive in the Arctic. Why couldn't polar bears survive in the Antarctic? Are there any animals that are able to survive at both poles? One animal to discuss would be the arctic tern (*Sterna paradisaea*); it migrates from pole to pole, a round trip of almost 36,000 km (22,370 mi.).

BACKGROUND

Although the Arctic and the Antarctic appear similar, these regions have very different characteristics. The Arctic is an ocean ringed with land masses while the Antarctic is a continent surrounded by the Southern Ocean. The Arctic has less severe winter temperatures— -70°C (-94°F) versus -88°C (-126°F in the Antarctic—and the land supports extensive plant life during the summer months. Large land predators such as polar bears, wolves, and foxes live on the tundra. The largest land animal in the Antarctic is a tiny insect.

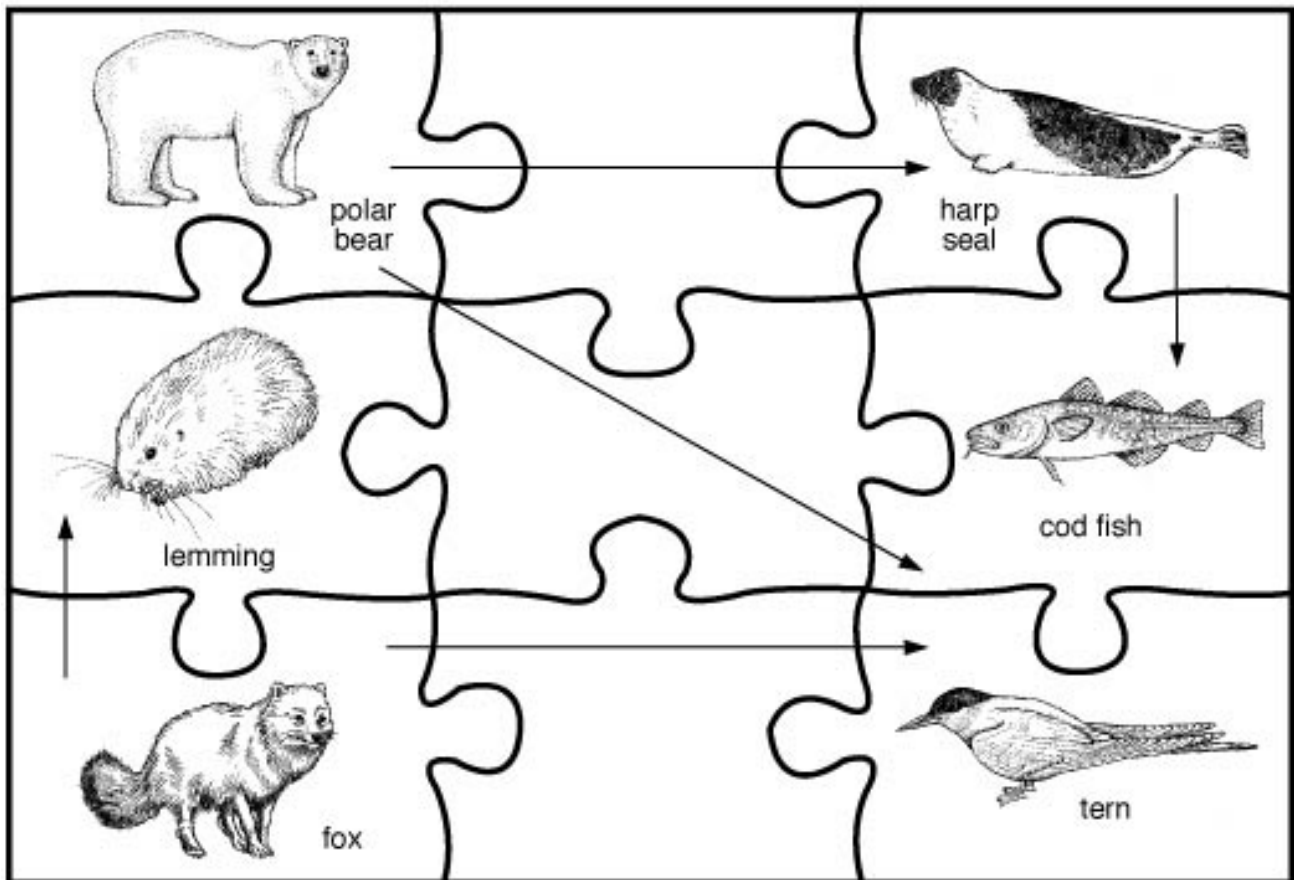
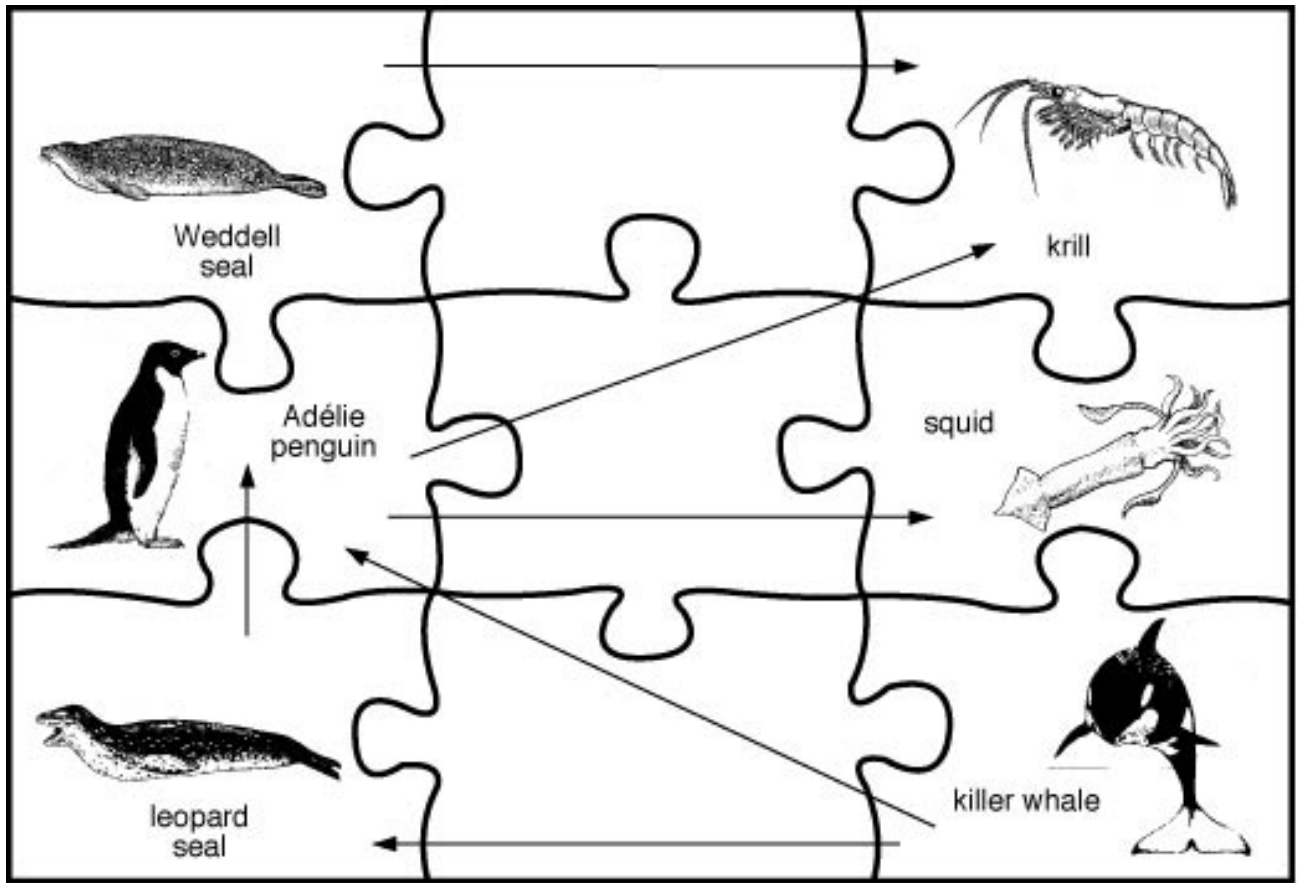
MATERIALS

One set per student pair:

- copy of page 21 with puzzle pieces cut apart
- 8-1/2" x 11" construction paper, any color
- glue
- markers



Penguins and walrus would never meet in the natural environment: penguins live only south of the equator and walrus live only in the northern Pacific and Atlantic Ocean.





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4-8 Classroom Activities

Population Calculations

OBJECTIVE

Students make decisions about how to solve problems using math skills.

ACTION

1. Have students work individually or in cooperative learning groups.
2. Distribute the Population Calculations funsheet.
3. Review new concepts or words before starting. They use another sheet of paper for calculations.

ANSWERS

1. $55,000 \div 182,500 = 0.301$ or 30%
2. $18,000 \div 182,500 = 0.099$ or 10%
3. $30\% + 10\% = 40\%$ [Or, $(55,000 + 18,000) \div 182,500 = 40\%$]
4. $3,516 + 14,825 + 500 = 18,841$ penguins
5. $18,841 + 19,506 = 38,347$ penguins
6. $38,347 \div 182,500 = 0.21$ or 21%
7. $2,000 \div 182,500 = 0.01$ or 1%
8. $182,500 - 2,000 = 180,500$ penguins



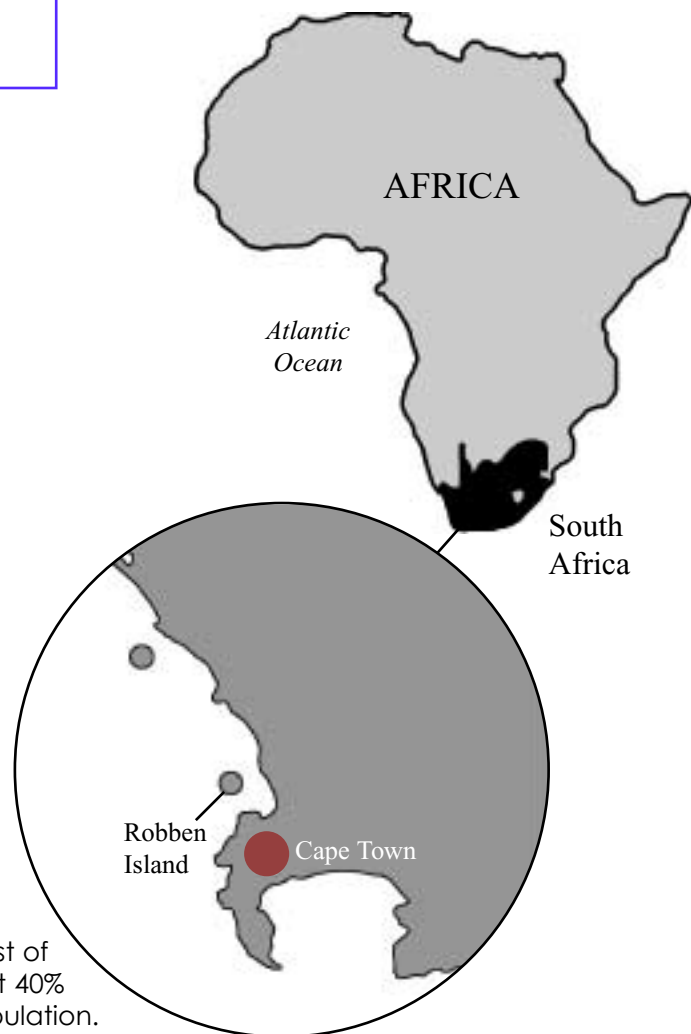
SeaWorld bird experts flew to South Africa to help clean and care for oiled African penguins after a devastating oil spill off Cape Town in 2000.

BACKGROUND

In June 2000 an iron ore carrier, the *MV Treasure*, sank off the coast of South Africa, leaking tons of oil into the sea. The oil spill threatened the African penguins inhabiting Dassen and Robben Islands, which comprise about 40% of the total African penguin population. The Southern African National Foundation for the Conservation of Coastal Birds (SANCCOB) coordinated rehabilitation efforts for nearly 19,000 oiled penguins and the rescue of another 19,000 un-oiled penguins that were relocated until the area was cleaned up. SeaWorld penguin experts flew to Cape Town, South Africa to assist with the cleaning and care of the oiled penguins.

MATERIALS

- Population Calculations funsheet
- calculators
- pencils
- paper



A recent oil spill off the coast of South Africa threatened about 40% of the African penguin population.

Population Calculations

You are a member of a team of scientists studying African penguins off the coast of South Africa. In early 2000, your team estimated that there were 55,000 African penguins on Dassen Island and 18,000 penguins on Robben Island.

1. If the total African penguin population is 182,500 penguins, what percentage of the world's African penguins inhabit Dassen Island?

2. What percentage of African penguins inhabit Robben Island?

3. On June 23, 2000, a huge ship sank off the African coast between Dassen and Robben Islands. The ship leaked fuel oil, diesel, and lube oil into the sea. Ocean currents spread the oil toward Dassen and Robben Islands. What percentage of the African penguin population was threatened by this oil spill?

4. Bird rescue experts worked quickly to collect oiled penguins and move them to an emergency rehabilitation facility. They collected 3,516 oiled penguins from Dassen Island, 14,825 oiled penguins from Robben Island, and another 500 oiled penguins from other nearby areas of the coast. At the rehabilitation facility bird experts washed and cared for the oiled birds. How many birds arrived at the rehabilitation facility?

5. Wildlife experts also collected another 19,506 healthy, un-oiled penguins from Dassen and Robben Islands and moved them about 800 kilometers (about 500 miles) out of harm's way until the oil could be cleaned up. How many total penguins were removed from the oil spill area?

6. What percentage of the total African penguin population was handled during the oil spill?

7. Remarkably, bird rehabilitation experts were able to save most of the penguins that were rescued. Experts estimate that about 2,000 penguins died as a result of the oil spill. What percent of the population is this?

8. What was the population of African penguins after the oil spill?
