

# Locating Antarctica

Integration: Geography

Grade Levels: 3-4 (for grades 5-6, see extension activity)

Time: 2-3 class periods

Materials:

1. Map of Antarctica
2. World map (with latitude/longitude and map scale for extension activity)
3. Globe (optional)
4. *Locating Antarctica—Comparison Sheet* handout
5. Geography research materials (almanacs, encyclopedias, internet access)
6. Orange or other spherical object that can be cut in half

Objectives:

Students will:

1. Identify the location of Antarctica on a global basis.
2. Describe the size and coastline of Antarctica and compare it to their country, their state, city/town, etc.

Lesson:

Full Group

## **Discussion of Hemispheres**

1. For older students: Ask student(s) to look up the word hemisphere in a dictionary. Have them read aloud the definition and the origin of the word, if possible.
2. Tell students that a hemisphere is one half of a sphere. The word “hemisphere” comes from the Greek words “hemi” or half and “sphere” or ball.
3. Demonstrate the concept of a hemisphere by drawing a line that divides an orange or other sphere shaped object completely in half and identifying the halves as hemispheres. Then cut the object in half and once again identify the hemispheres. Explain that the hemispheres can be identified left and right or top and bottom.
4. Tell students that the earth can also be divided into hemispheres. We use the hemispheres to describe where certain countries and formations are located.
  - a. Dividing the earth into top and bottom halves gives the Northern Hemisphere and the Southern Hemisphere.

- b. Dividing the earth into left and right halves gives the Eastern Hemisphere and the Western Hemisphere.
5. Tell students to look at the world map or at a globe and trace where the line would be drawn to divide the earth into the northern and southern hemispheres. (equator)
  - a. In which hemisphere is the United States (substitute other countries) located? (northern)
6. Tell students to trace where the line would be drawn to divide the earth into the eastern and western hemispheres. (prime meridian)
  - a. In which hemisphere is the United States (substitute other countries) located? (western)
7. Ask students to locate in which hemisphere Antarctica is located (southern, and both eastern and western).
8. Ask students to look at the globe or the world map and identify the countries that are closest to Antarctica and the oceans that surround it.
9. Introduce the investigation of the size of Antarctica and its place on the planet.
  - a. Antarctica is 5.4 million square miles (13,824,000 km<sup>2</sup>). That means that it takes 5.4 million blocks of land that are 1 mile wide by 1 mile long to equal the size of Antarctica.
10. Divide the class into small groups and have them work to research the sizes (area) of the United States, the state in which they reside, and the city or town in which they live. They should use almanacs, the internet, local records, etc.
  - a. Students should record each of the measurements on the *Locating Antarctica—Comparison Sheet* handout.
  - b. Students will compare the measurements and explain their findings.
  - c. Antarctica is roughly 1.5 times the size of the United States.

OPTIONAL: Younger students may not be able to understand square miles. They may simply decide which measurement of area is greater than or lesser than.

11. Remind students that Antarctica is a continent that is surrounded by water. Its coastline has been measured at 17,968 km (11,230 miles).
  - a. In groups, have students investigate and compare this coastline measurement to the United States (or other country), their state and their city/town (even if the location has no coastline).
  - b. Tell students to record what they find on the *Locating Antarctica—Comparison Sheet* handout.
  - c. Students can convert kilometers to miles and miles to kilometers (1 mile=1.6 km).
  - d. Students will compare the measurements and explain their findings.

ALTERNATIVE: The research activities can be assigned as a project to do outside of class.

EXTENSION: For older students:

- Have students locate Antarctica and decide on the latitude ( $90^{\circ}$  S) and longitude ( $0^{\circ}$ ). Have students locate where they live in latitude and longitude.
- Using the map scale, have students calculate how far it is from where the students live to Antarctica, to the South Pole, the McMurdo Base, etc.

### Assessment:

Teachers will assess:

1. Students' understanding of hemisphere and their ability to locate places based on hemisphere information.
2. Students' ability to utilize reference materials to find geographic information.
3. Students' ability to compare and discuss the information they have found.
4. Students' ability to work cooperatively.