



CLASSROOM ACTIVITY

Which Map's the Best Map?

What are the advantages and disadvantages of different kinds of maps? Find out more about some of Antarctica's features by examining different maps of Antarctica. Focus your investigation on the questions below. After you and your team have completed the activity, respond to these questions directly in your journal.

- ▶ Why have cartographers created so many different representations of the Earth?
- ▶ Which one is the "best" or the most accurate representation? Why?
- ▶ How does Antarctica appear on each projection?
- ▶ Why does Antarctica look so different on each one?

Gather with your team and choose a captain and a note taker for today. The captain appoints group members to collect the required materials while the rest of the group reviews today's procedure.

Before beginning, the captain makes sure that the group has all required materials, and that everyone knows the day's procedure. At the end of the period, the captain also writes a progress report, explaining what the group learned today and how each group member contributed to the discussion.

The note taker takes notes on the group's findings for your team. Remember to record your observations and explanations in your journal for your own research notes. Include drawings to illustrate your findings.

MATERIALS

- ▶ Mercator map projection of the world
- ▶ polar map projection of Antarctica
- ▶ globe
- ▶ journal



GROUP MEMBERS _____

CAPTAIN _____ **NOTE TAKER** _____

ARTIST(S) _____

1. With your team, examine the globe, the Mercator map projection, and the polar map projection. Describe each type of map.

TYPE OF MAP	DESCRIPTION
GLOBE	
MERCATOR PROJECTION	
POLAR PROJECTION	

2. What similarities do you notice among these three types of maps? What differences do you notice?

3. Why do you think cartographers created so many different representations of the Earth?



4. Which projection is the “best” or the most accurate representation? Why do you think so?

5. Locate Greenland and South America on the Mercator map. Compare the size of these two continents on the Mercator map. Compare their sizes on the Mercator map to their sizes on the globe. Describe what you see.

6. Are the sizes of Greenland and South America “true” on the Mercator map? Explain why or why not. Discuss how latitude and longitude are drawn in a Mercator projection map.

7. Locate Antarctica on the two maps and on the globe. Describe how it appears on each projection.

TYPE OF MAP	DESCRIPTION OF HOW ANTARCTICA APPEARS ON THIS MAP
GLOBE	
MERCATOR PROJECTION	
POLAR PROJECTION	



8. Why does Antarctica look so different on each map?
9. Draw some conclusions about what you've seen on the different maps. What kind of distortions do you see on the Mercator projections? Where are they most pronounced?
10. Explain how your answer for Question 9 above would affect the representation of Antarctica on a Mercator map.
11. How do the lines of latitude and longitude appear on a polar projection map?



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**GROUP WORKSHEET 4
ANTARCTIC TEAM**

12. Using your answer for Question 11, explain the advantages of the polar projection. What are the limitations?

13. Explain why the globe is the most accurate representation of the Earth.

14. Despite the accuracy of the globe, most scientists do not use it in their work. Explain why not.

15. Consider all that you have learned about maps today as you answer the following question: How can we represent a spherical object like the Earth on a flat surface?

GROUP DYNAMICS

Comment on how each group member participated in today's discussion.