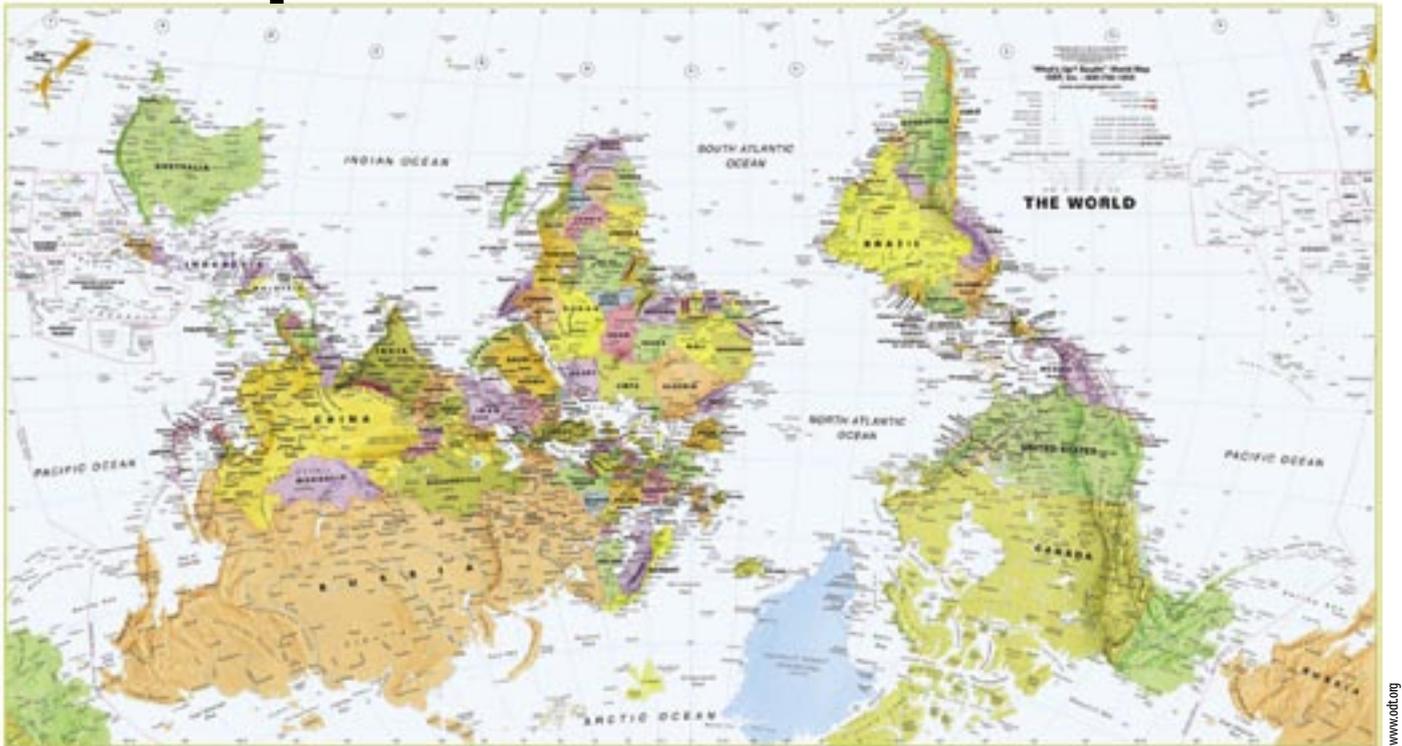


Maps as Stories about the World



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AS POWERFUL TOOLS OF PERSUASION, MAPS HAVE A REMARKABLE EFFECT ON OUR VIEW OF THE WORLD.

AT THE ROOT OF THEIR POWER IS OUR UNQUESTIONING ACCEPTANCE OF CARTOGRAPHIC MESSAGES.¹

One of the main purposes of social studies education is to help students become critical readers of the various media they encounter both in and out of school. The ability and disposition to read texts critically—to question their purpose, underlying assumptions and values, and mechanisms of persuasion—is fundamental to the citizenry of a democracy. To that end, social studies teachers have emphasized how to read printed materials (in some classes, also video images) in ways that question the text rather than simply “swallow” the information provided. A medium that often escapes such scrutiny is the map. Maps are, by and large, still regarded as unproblematic—as if they were perfectly transparent windows to physical and social reality. Like all media, however, maps are not found objects but are created by humans. The apparent precision of many maps lends an air of scientific authenticity,² but a map is a type of story, one told by a map-maker. Using pictures, words, numbers, symbols, and icons, maps always simplify the world to provide a frame for understanding it.³ Cartographers impose their perspective in the choice of what they include or exclude, rendering some aspects of the world significant while ignoring and margin-

alizing others. What might viewing maps as imperfect human constructions mean for social studies educators?

Maps as Narratives

Every map tells a story that serves a purpose and advances an interest.⁴ While we tend to think of a map as a neutral depiction of the real world, it is a record that selects, delimits, and inventories only a part of it.⁵ The traditional perception of a map as a mirror, a precise graphic representation, is thus untenable.⁶ All maps embody their authors’ perspectives, assumptions, and biases.⁷

One reason that we might fail to look critically at a map is that we pretend there is no cartographer behind it; we do not see the map as something that a human being arranged for us. The absence of an author has a double, interrelated effect on our perceptions of, and interaction with, maps. It implies the map is unmediated, a facsimile of the real rather than a perspective on it. And when no author is made to stand behind or claim responsibility for that which is depicted, one ability of readers to converse with the map—to talk back to it, to challenge or dispute its claims, its underlying assumptions and values—is diminished: When something purports to come from nowhere, to be created by no one, how could it be disputed? To whom might our concerns be addressed?

A second reason that we might fail to look critically at a map is that we have all learned to argue with words much more than with icons and images—the language with which maps convey the world to us. Icons and images remain unquestioned because they



fit seamlessly with the sign system of other cultural artifacts that we have learned since childhood to accept without thinking (such as road signs, logos, pictures on cereal boxes, patterns on wrapping paper, greeting cards, magazine covers, wallpaper design, picture books, posters, and billboards).⁸

Implications for Social Studies

To help students think more deeply, maps must be made problematic. Once we reveal maps to be manufactured items, they become open to discussion and debate. Students can look at a map and search for evidence of the values, assumptions, and perspectives of a particular cartographer. This allows students to ask different questions about knowledge, our relationship to the world, as well as the nature of map-making.

Approaching maps in that manner does not diminish the value of maps, but opens them to inspection and controversy. When we consider maps as narratives, as serving a purpose and promoting an interest, we can begin to explore all maps for the messages they convey, the assumptions they embody, and the values they promote. In order to interrogate maps, it is necessary to provide students with a variety of maps (historical and contemporary, conventional and unconventional, from the center of our culture and the periphery) and map formats (political maps, physical maps, pictorial maps).

Maps promote particular ethnocentric cultural assumptions and biases. Most map projections that students are familiar with display a European or Western bias by (for example) splitting Asia in half in order to put Europe and the Americas front and center.⁹ Europe and the Americas are in the center of the map and the zero meridian runs through Greenwich not because these arrangements actually exist in nature, but because they reflect the role of Europeans in world exploration and the development of cartography.¹⁰ When people wish to stand at the center of the world, they understandably create maps that reflect that notion. And “when they see ‘their

Suggested Free Map Resources for Viewing on the Internet

- ▶ The Perry Castaneda Library at University of Texas provides one of the best selections of both contemporary and historical maps. www.lib.utexas.edu/maps/map_sites/hist_sites.html
- ▶ Cartographic Images (Henry Davis Consulting) provides hundreds of maps (often with extensive text explanation) ranging from 6000 B.C. to 1880 A.D. The site’s division into Ancient, Medieval, and Renaissance maps makes for easy access. It also links to other great map collections. www.henry-davis.com/MAPS
- ▶ The Geographer’s Craft Project at the University of Colorado, Boulder, and Peter H. Dana, University of Texas at Austin, provides a variety of world projection maps. www.colorado.edu/geography/gcraft/notes/mapproj/mapproj.html
- ▶ NASA provides beautiful satellite images of the Earth and its continents. eol.jsc.nasa.gov/sseop/clickmap
- ▶ The Upsidedown Map Page, hosted by British mathematician Francis Irving, shows an entertaining variety of upside-down maps (including the McArthur Projection) and related resources about viewing the world from different perspectives. www.flourish.org/upsidedownmap. (see also www.odt.org)
- ▶ The George Glazer Gallery in New York city offers art collectors and other wealthy patrons a wide selection of pictorial maps displayed on its website. www.georgeglazer.com/maps

place’ at the center of things rather than off at the margins, their feelings of superiority are enhanced.”¹¹

Interrogating a Map

A teacher can pose guiding questions to help students read maps more critically, exploring the assumptions they make, the interests they serve, and the world views they promote. The list provided is by no means exhaustive and will need to be tailored in each teaching context, but it provides a place to start.

As you engage students with maps, you might want to consider the following questions: What does this map depict? What story is it attempting to tell? Whose interests does it advance? Whom does it marginalize? Does this map serve to perpetuate or challenge existing political and/or social goals, issues, and interests (and how does it do it)? What might this map imply about the assumptions, commitments, and values of its maker as well as those of its intended readers? What position (i.e., powerful or powerless, insider or outsider) does the map invite you, its reader, to assume? How does the map accomplish that positioning (what textual and visual devices or conventions does it recruit)? What is your reaction to this portrayal? What alternative depictions might be possible? What (or who) could be included that is currently missing? How could information be displayed in a way to make the map more complete (and to whom)?¹² Make sure that as students respond, they also explain what feature in the map being examined gave rise to their particular responses.

The five suggested activities for upper elementary students described below provide a framework for engaging students with maps. Individual teachers should select specific maps depending on grade level of the class and context for presentation. Maps can be obtained from Internet sites provided in the Resources section, below. These activities can help elementary students think more deeply about the stories we tell ourselves about the world and our place in it with the maps that we create.

Suggested Map Resources in Print

Harley, J. B. and David Woodward, eds. *The History of Cartography*. Chicago, IL: University of Chicago Press, 1987.

The ultimate volume on the history of cartography; includes a large selection of maps.

Holmes, Nigel, *Pictorial Maps*. New York: Watson-Guption, 1991 has a large selection of unconventional (pictorial) maps that is widely appealing to students.

Danzer, Gerald. "Using Maps in the Classroom" (A series of seven articles), *Social Education*, September 1991 through March 1992 (55, no. 5 through 56 no. 3).

Whitfield, Peter. *The Image of the World: 20 Centuries of World Maps*. San Francisco, CA: Pomegranate Artbooks, 1994. A good selection of world maps from ancient to contemporary (includes explanations).

Classroom Activities

Activity # 1: Constructing Maps

One of the better ways to illustrate that maps are constructed, and that there are various issues associated with that construction, is to have students construct a map. Divide the class into 4 to 6 groups. Give each group a large sheet of paper (to be displayed later) and 6 to 8 colored pens (each group should get the same colors). Ask all groups to map the same particular area (the classroom, school, playground). When students have completed their maps (about 30 minutes) display the maps and invite students to identify and

describe some of the differences among the maps (there will no doubt be differences as to what and how things are shown). Pose the following question: If every group mapped the same area, why are maps different? Responses will likely lead to the conclusion that maps are made rather than found, that map-makers must make choices, and that choices are a reflection of what cartographers deem important. To bring the discussion back to broader issues, choose a map you have already used with these students (from the textbook, or one hanging on the wall) or one you intend using with them in the future. Ask students how this map could have been drawn otherwise or what else could have been included? The intent is for students to make connections between their own experience as map-makers and those of the creator of the map they are examining. Making that connection will make it easier for students not only to recognize the limitations of this map, but also of other maps they will engage in the future.

Discuss the map's "key" or "legend" with students and what each of these terms means in the context of this lesson. That is, how might thinking of the box of symbols appearing at the bottom corner of a map as a key implicitly direct the viewer to think of the map as unproblematic, "scientific," and perfect? How, on the other hand, might our use of the term "legend," with its various connotations, help orient students toward thinking of maps as narratives, tales, or stories about the world that can be interpreted? Two words, each in current use, refer to the same element of the map, but present very different approaches as to how we might think of a map.

Activity #2: What Constitutes a Map?

The purpose of this activity is to have students consider their own (and, by extension, others') definitions of what constitutes a map. Provide students, in groups, with the same set of 6 to 8 maps (make sure to include a variety of maps, i.e., an historical and a contemporary map, a political map, a satellite image, a road map, a pictorial map, a 3-dimensional map) and ask students to rank them according to what most resembles their definition of a good map, the "best" map at the top. As students begin to rank maps, they will have to invent a set of categories with which to do the ranking. It is those categories that are important. When students have finished ranking the maps (about 20 minutes), ask each group to put their ranking on the board and explain why they ranked the maps the way they did. In the process, the categories they devised as to what does and/or does not constitute a (good) map will come to light. Inevitably, different groups will rank maps differently, which can lead to a discussion about the different categories students used and what we may learn from that (usually, that they are culturally determined, that they depend on the purpose for using a map, etc.). Students can infer that we tend to judge maps for their utility and that such judgments are culturally and temporally dependent (This will become more apparent if an historical map is compared with a contemporary map, or if one from the center of our consensus is compared with one that is not).

Activity #3: Projecting a Curved Surface onto a Flat Plain

The purpose of this activity is to introduce students to the idea that fitting a round world onto a flat map is always problematic, a process that always distorts some aspects of the world more than others. While this activity may be familiar, it is worth repeating.

1) Select five different world maps that show five different projections, preferably including Mercator and Peters projections (Table 1). Assign each of those maps a letter (A for Mercator, B for Peter projection, etc. ... to E) in the left hand corner. Photocopy an equal number of each (5 of each map if there are 25 students).

2) Divide the students into five groups (A to E) and give the students their corresponding map (ie, all students in group A get map A).

3) Ask the groups to identify the five following landmasses on their maps (Greenland, North America, South America, Australia, Africa, and Europe).

4) Ask each groups to rank the identified five landmasses according to the apparent size, from largest (#1) to smallest (#5), using that group's map.

5) While students are working, create a chart on the board that incorporates the names of the five areas on one axis and the five map projections on the other. (Table 1).

6) When students have finished ranking the maps (5 to 10 minutes), ask one student from group A to put her ranking on the board, under the appropriate column. Do the same for each of the other four groups.

When the chart is complete, it will become apparent that some areas appear much larger in some maps than in others.

7) Provide students with the actual size of each of those areas (in square miles). A student at the board can record the data in the last column of Table 1: Africa, 17,250,000; North America, 9,400,000; South America, 6,900,000; Australia, 2,966,200; Greenland, 840,000 square miles.

8) Ask students to explain how Greenland, which is so much smaller than South America and Australia, can appear larger than both in some maps. Some students may know the answer. If they don't, have a student peel an orange and attempt to fit its segments onto a square, flat piece of paper.

9) After discussing the dilemma that every projection "lies" or distorts the land masses in some way, have students guess what property (or properties) might get distorted by each projection. Only a globe can represent angle, distance, direction, and area faithfully all at once.

10) Ask students which of the provided projections is most familiar to them. They will likely mention the Mercator projection. Follow up with a discussion about that projection, what it distorts, and possible reasons why it is so often used in classroom maps and atlases published in Western societies.¹³

Activity # 4: The Power of "Up" and "Center"

Have students examine two political world maps: a Mercator projection with Europe and the Americas toward the center (the map most often used in American classrooms) and a McArthur "corrective" projection or any other which puts Australia at top and center (an "upside down" projection). Allow students some time to explore the maps, then ask what the McArthur map is trying to

Table 1
Map Projections and Area Distortions

| Land masses | Map projections and apparent size | | | | | Actual area (sq. miles) |
|---------------|-----------------------------------|-----------|---------|-----------|--------------|-------------------------|
| | A. Mercator | B. Peters | C. Gall | D. Miller | E. Mollweide | |
| Africa | | | | | | |
| Australia | | | | | | |
| Europe | | | | | | |
| Greenland | | | | | | |
| North America | | | | | | |
| South America | | | | | | |

Note: Teachers may choose other types of projections for B through E.

“correct” and why it might be preferred by those living in Australia. Put otherwise: Why might Australians feel uncomfortable using the “traditional” Mercator map? How would Americans feel if the McArthur projection was the one used in U.S. classrooms? What messages does each of the maps send its readers about who is important in the world? Discussion on these questions will help students realize that areas placed at the top and center of a map are perceived as more important and powerful. Those who live in the “center of things” produce the maps and have the power to “name” the world and “place” its people. (This is a good opportunity to discuss with students our cultural and linguistic tendencies to associate positively images and emotions with the word “up” and negatively with “down,” and how that might play in our understanding of the world).

Variations (two related elements that could be added):

1) Examine the terms “Far East”, “Middle East,” and “Near East” (the Balkans). Most students will be familiar with the first two terms. Ask students where they think these areas might be far, middle, or near from (or to). From my experience, students tend to think ethnocentrically and say, “the U.S.” Upon further examination they realize that the “Far East” is actually closer to the United States (measured from the west coast) than any of the other “Easts.” After pointing the three regions on the map to students, they may realize that the reference point must be Europe. Ask students why Europeans were the ones naming other areas of the world in relation to themselves. The idea is for students to realize that Europe was the source of explorers and world map publishing, and thus Europeans had the “power” to name and locate the world from their position of empire (This is also an opportunity to think about why the zero meridian runs through Greenwich, England, and the international date line through the middle of the Pacific).

2) Ask students how many continents there are. The usual answer is “seven.” Ask a student to draw the Olympic flag on the board (most students are familiar with the five Olympic rings). Then ask what each ring represents. Many students know they represent continents (if they don’t, tell them). That poses a problem: if there are seven continents, why only five rings? The flag was designed in Europe and, according to its designers, there were five continents worth counting (they did not count Antarctica and considered North and South America to be one continent). The point is that naming and numbering are a reflection of culture, that divisions created within the world are arbitrary and reflect particular assumptions and values. Discuss why Europeans might think the world has only five continents, while Americans generally believe there are seven (counting Asia and Europe, and North and South America each as separate continents).

Activity #5: Conceptions of the World

In this activity, students are introduced to a variety of historical and contemporary maps of the world, with the idea of considering how conceptions of the world and cartography have changed over time and place. Make sure to include one of the earliest known maps (e.g., the Catal Hyuk map from 6,200 B.C.), a map from Ancient Greece, one from the early Moslem world, from the Middle

Ages (where Jerusalem is at the center and east is “up”), and several maps from the 1400s on up to today. Do not include the date of publication on the maps. Give each group of students a set of those maps.

1) Ask students to rank the maps from earliest to most contemporary. Then ask one or two groups to put their ranking on the board and explain what criteria they used to do their ranking.

2) Ask students to discuss what they may learn from each map about how the world was viewed at that particular time, focusing on such aspects as territory shown, detail, format, orientation, etc.

3) Have students examine how cartography has changed through time. As maps will illustrate, changes are not only in the substance upon which maps are produced (e.g., stone, to leather, to paper), but also in the kinds of information on the map (from early outlines of landforms, to works of art illustrated with creatures and designs, to precise modern maps filled with measurements and text).

The notion of cartography as a creative, artistic endeavor that was prominent a few centuries ago has now given way to a more scientific attitude. But the human choices that go into making a map are undiminished. Such a realization brings us full circle to the idea opening this article: that the map’s scientific presentation hides its artistic elements. These five activities try to make all aspects of cartography apparent so that students can read maps more critically. 🗺

Notes

1. Mark Monmonier, *Drawing the Line: Tales of Maps and Cartocontroversy* (New York: Henry Holt, 1995), 1.
2. John Wright, “Map-Makers are Human: Comments on the Subjective in Maps,” in *The Nature of Cartographic Communication*, Leonard Guelke, ed. (Toronto, Canada: Toronto University Press, 1977), 8-25.
3. Stuart Hall, “The Whites of Their Eyes: Racist Ideologies and the Media,” in *Silver Linings: Some Strategies for the Eighties*, G. Bridges and R. Brunt, eds. (London: Lawrence and Wishart, 1981).
4. Ward Kaiser and Denis Wood, *Seeing Through Maps* (Amherst, MA: ODT, 2001), 4.
5. Denis Wood, *The Power of Maps* (New York & London: Guilford Press, 1992), 79.
6. J. B. Harley, “Text and Contexts in the Interpretation of Early Maps,” in *From Sea Charts to Satellite Images*. David Buisseret, ed. (Chicago: University of Chicago Press, 1990), 3.
7. Mark Monmonier, *How to Lie with Maps* (Chicago: University of Chicago Press, 1991), 1.
8. D. Wood, 143.
9. Linda Levstik, “Literary Geography and Mapping,” *Social Education* 49, no.1 (1985), 38-43.
10. Jeremy Black, *Maps and Politics* (Chicago: University of Chicago Press, 1997), 37
11. Kaiser and Wood, 2001, 98.
12. These question are borrowed from Walt Werner, “Reading Authorship into Texts,” *Theory & Research in Social Education* 28, no 2 (2000), 193–219.
13. I thank Alan Sears of the Department of Curriculum and Instruction at the University of New Brunswick, Canada, for this activity. Research leading to this paper was funded by the MSU College of Education’s PT3 Grant.

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