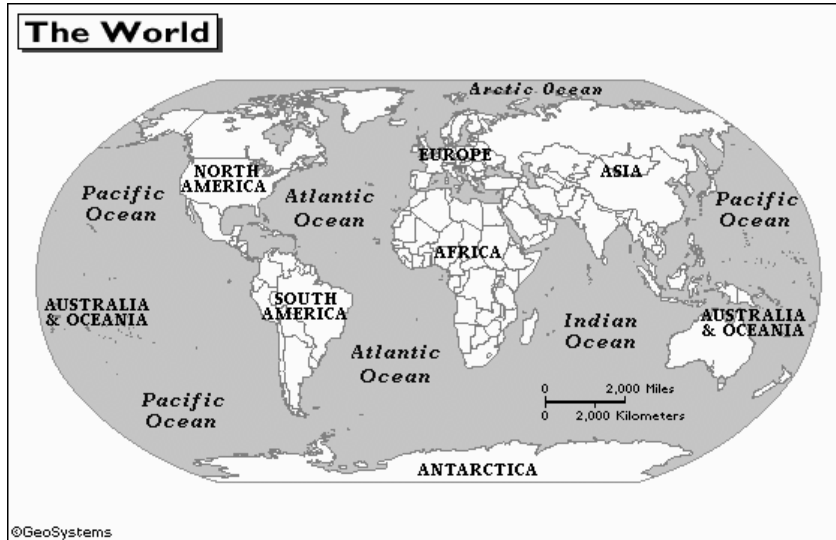


How and why are maps created? How are they used? How do we create and store maps in our minds, and how do we use these “mental maps”? How are people and places organized on the Earth’s surface? How are people’s decisions affected by their locations and the locations of things in their environments (such as buildings, natural resources, and transportation routes)?

These are some of the questions we’ll consider in this presentation. Throughout the show, try to think about how you use maps in your own life and how they might help you in the future. Also think about how your decisions—and the decisions of other people—are influenced by the geographical distribution of people and places.



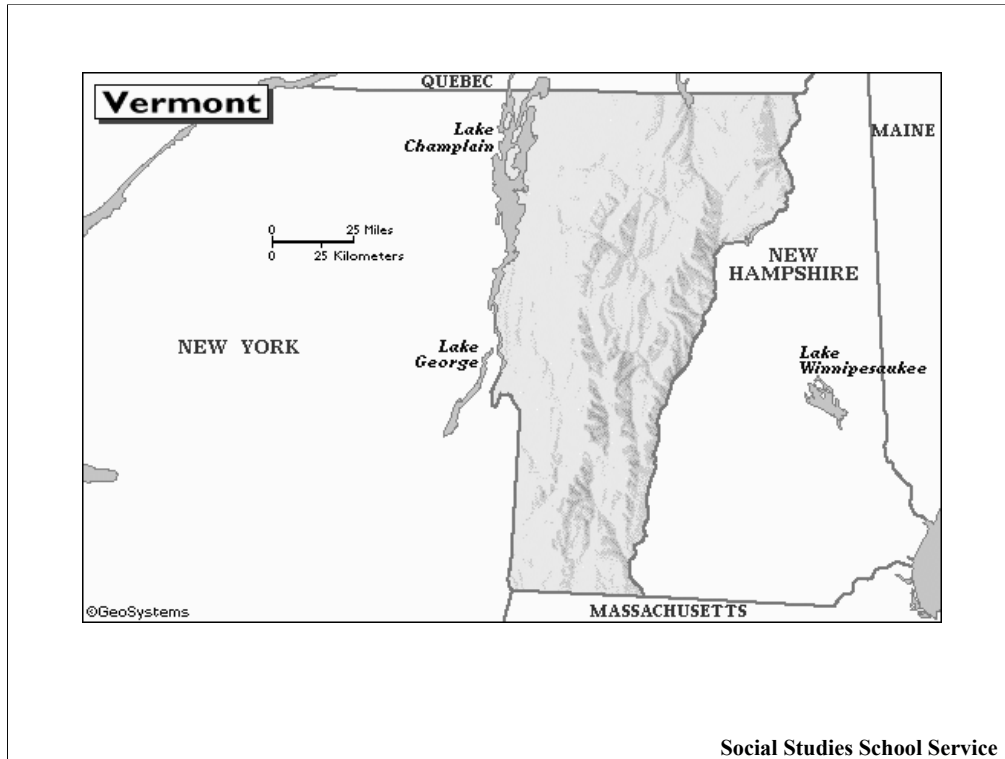
Map Scale

Social Studies School Service

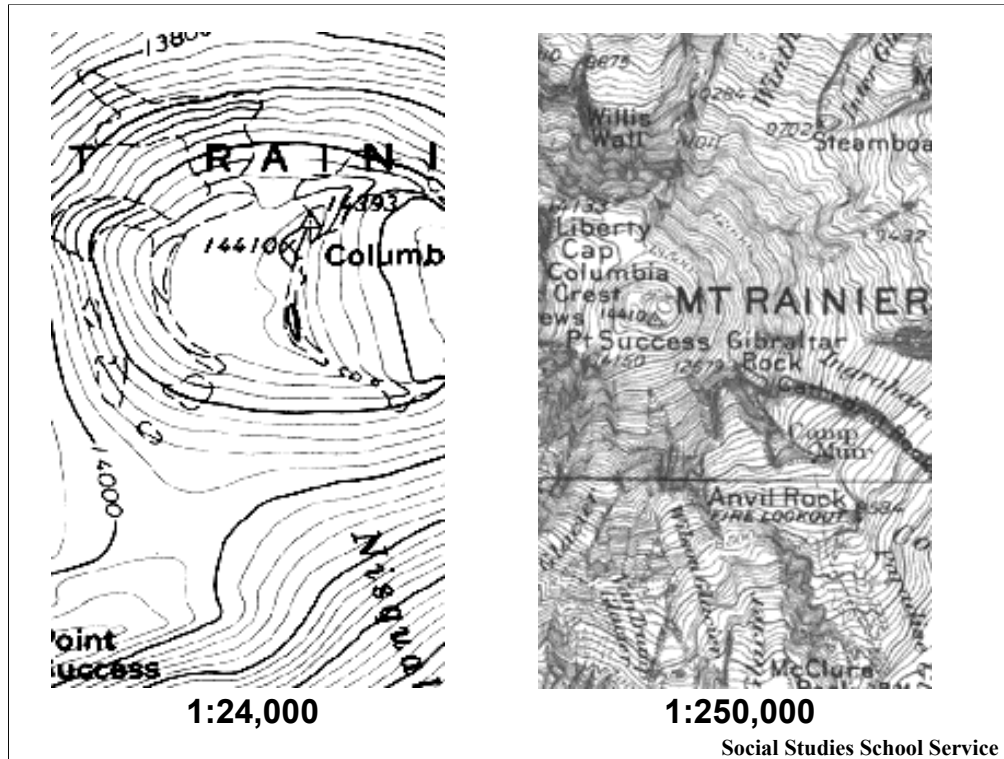
(Geography Standard 1)

Let's first consider how maps are created.

Maps can be drawn to very different scales. For example, this map shows the entire world, with one inch representing 2000 miles.



In contrast, in this map of the tiny state of Vermont one inch equals 25 miles.



Map scale is stated as a ratio, as you can see in each of the maps on this slide. The first number in the ratio (1) stands for one unit of measurement on the map (generally one inch or one centimeter), and the second number in the ratio shows how many of the same unit (inches or centimeters) the 1 represents on the ground. So, the ratio in the first map states this: 1 inch on the map equals 24,000 inches on the ground.

What does the second map's ratio state? What is the difference between these two maps? They both show Mt. Rainier in Washington State, but they're obviously different in an important way.

Note that the map with the smallest number (1:24,000) is the map that provides more of a close-up of Mt. Rainier.

Which map would be the most helpful if you were climbing Mt. Rainier? Why? Which would be the most helpful if you were trying to decide which area in Mt. Rainier National Park to visit on a backpacking trip?

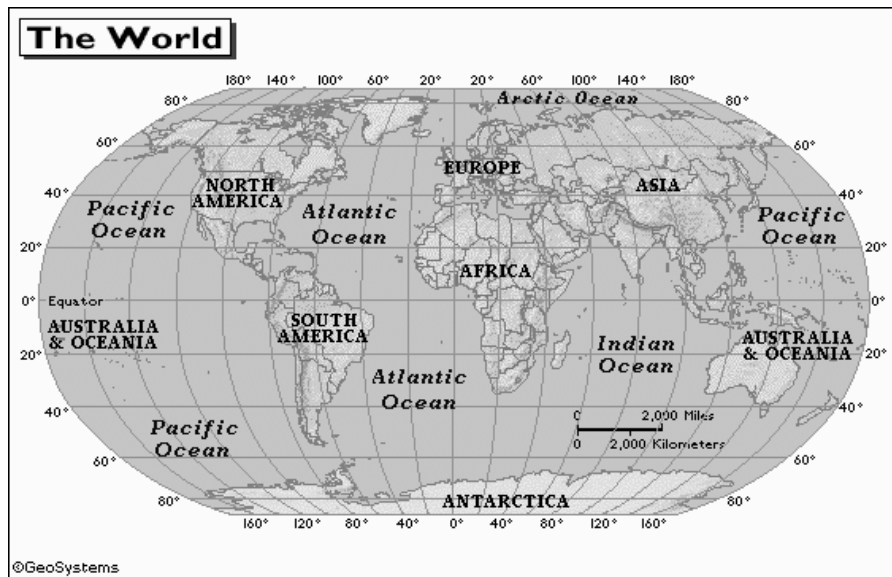
Why is it important to figure out a map's scale before you use it? Hint: Imagine that you're trying to use a road map to get from one town to another. Why would it help to know the scale?



Globe

Social Studies School Service

This slide and the next one show two ways to represent the world. What are the advantages and disadvantages of each?

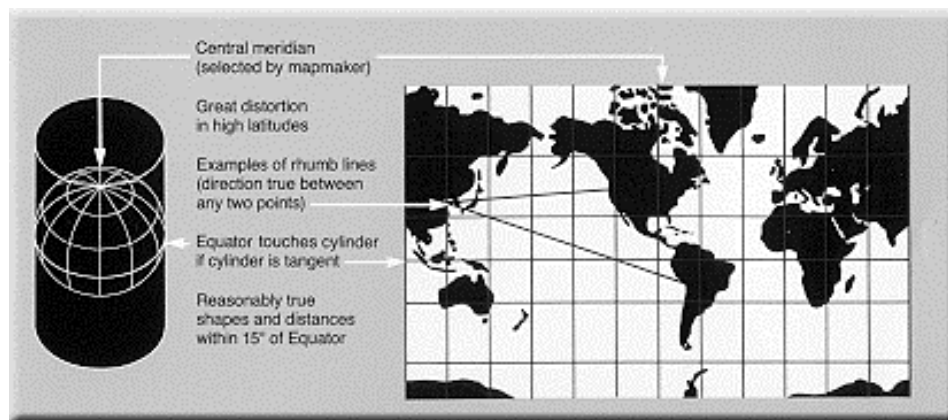


World Map

Social Studies School Service

What are the advantages of using a globe to find information about the world? What are the advantages of using a map? What are the drawbacks of each? Which do you use most often? Why?

Globes show the true shape of the earth without the distortion that is inevitable on maps; however, you wouldn't want to carry a globe around with you on a trip! Maps are much more portable, and their scale can be changed to provide detail about specific places. Globes, on the other hand, always show the entire planet and don't let you focus on specific areas.



Mercator map projection

Social Studies School Service

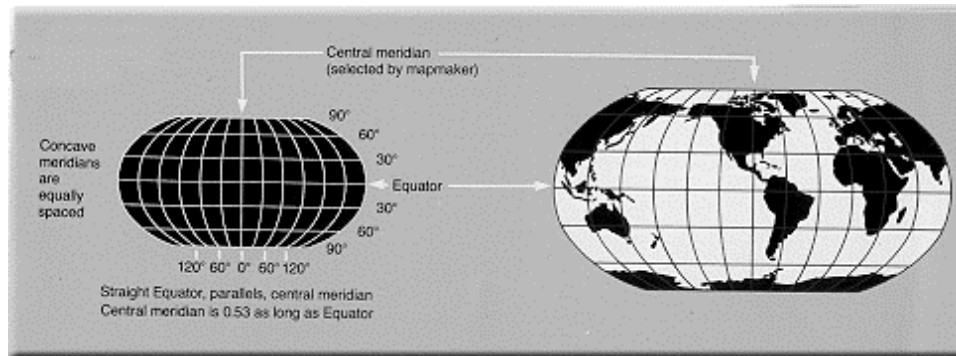
Maps can be drawn in many different ways. Professional mapmakers (known as “cartographers”) use special grid systems to design their maps. Many different systems, called projections, have been developed, and each one shows the earth in a slightly different way.

For example, the map on this slide was drawn using the commonly-used Mercator projection. Notice how the grid appears in straight horizontal and vertical lines.

What do you notice about the size and shape of the continents on this map? Find Greenland. What does this land mass look like here? Is it really this huge in comparison to the other land masses and continents? To find out, compare Greenland on the Mercator map to Greenland on a globe.

Look at Europe and Africa. How do they compare in size? Do you think Africa is really this small compared to Europe? Use a globe again to compare these continents on a Mercator map to their real dimensions.

The Mercator projection, although very popular, distorts many of the earth’s land masses—the farther from the equator, the more they get distorted. Thus, Greenland and Europe all appear bigger than they really are (so do Canada and Russia).



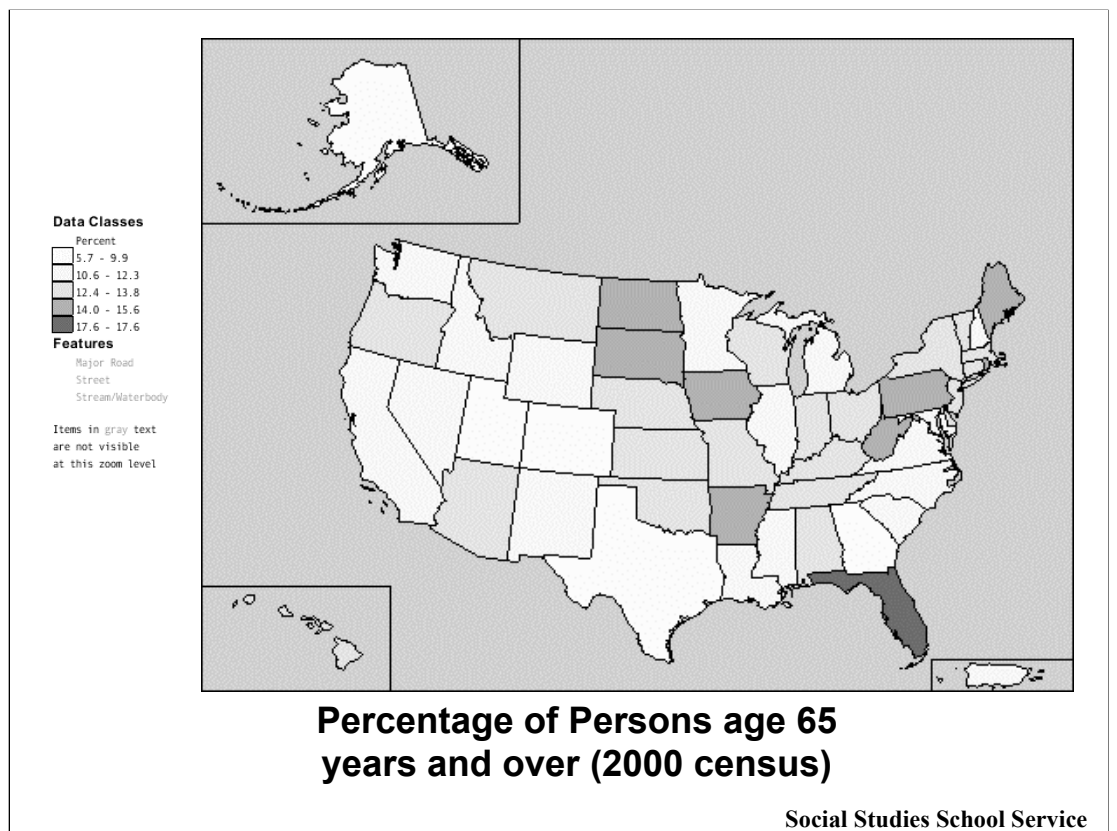
Robinson map projection

Social Studies School Service

This slide shows the Robinson projection. In what ways is it different from the Mercator projection?

You should first notice that the Robinson projection uses curved rather than straight grid lines. You will then notice that Greenland and Europe appear smaller in relation to the other continents than they did on the Mercator map.

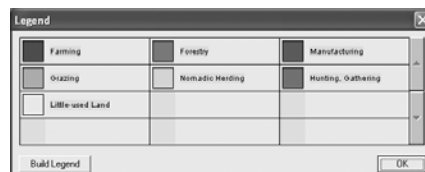
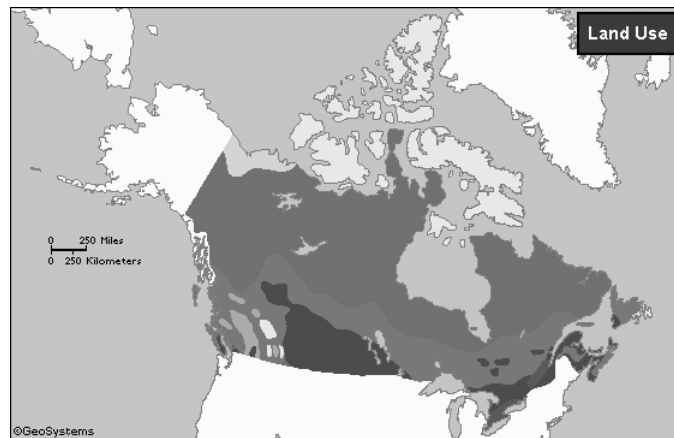
The Robinson projection provides a more realistic representation of the earth, and it also happens to look more like a globe than the Mercator projection does.



We often use maps to visually represent data. This map uses data from the 2000 census to display the percentage of people over the age of 65 in each state. Although this information can be shown in charts and tables, representing it on a map can sometimes make certain data stand out.

The key on the left indicates what the colors on the map mean. The lightest shade of yellow represents states where 5.7–9.9 percent of the population is over 65 years old, and the darkest shade of green represents states where 17.6 percent of the population is over 65.

What does this map tell you about the distribution of people over 65 throughout the country? Which states have the highest percentages of senior citizens? Which have the lowest? What does this map tell you about the percentage of *younger* people in these states?



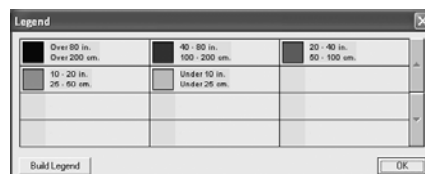
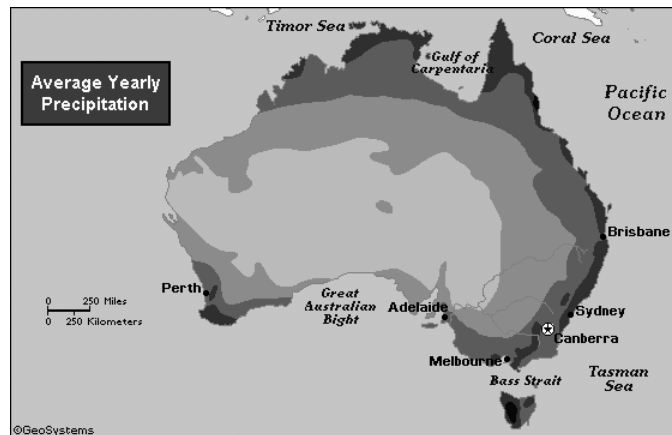
Thematic Map: Land Use in Canada

Social Studies School Service

Thematic maps show how themes, trends, or patterns differ from place to place on a map. The census map in the last slide is an example of a thematic map. This slide shows another thematic map, which focuses on patterns of land use in Canada. The map legend might be hard for you to read, but each of the colors on the map represent the following (beginning in the upper left and going across the rows):

- farming (dark green)
- forestry (green)
- manufacturing (red)
- grazing (light orange)
- nomadic herding (light green)
- hunting, gathering (purple)
- little-used land (tan)

What does this map show you about Canada's land use patterns? How is most of Canada's land used? Where are Canada's manufacturing centers? Where are most of Canada's farms located?



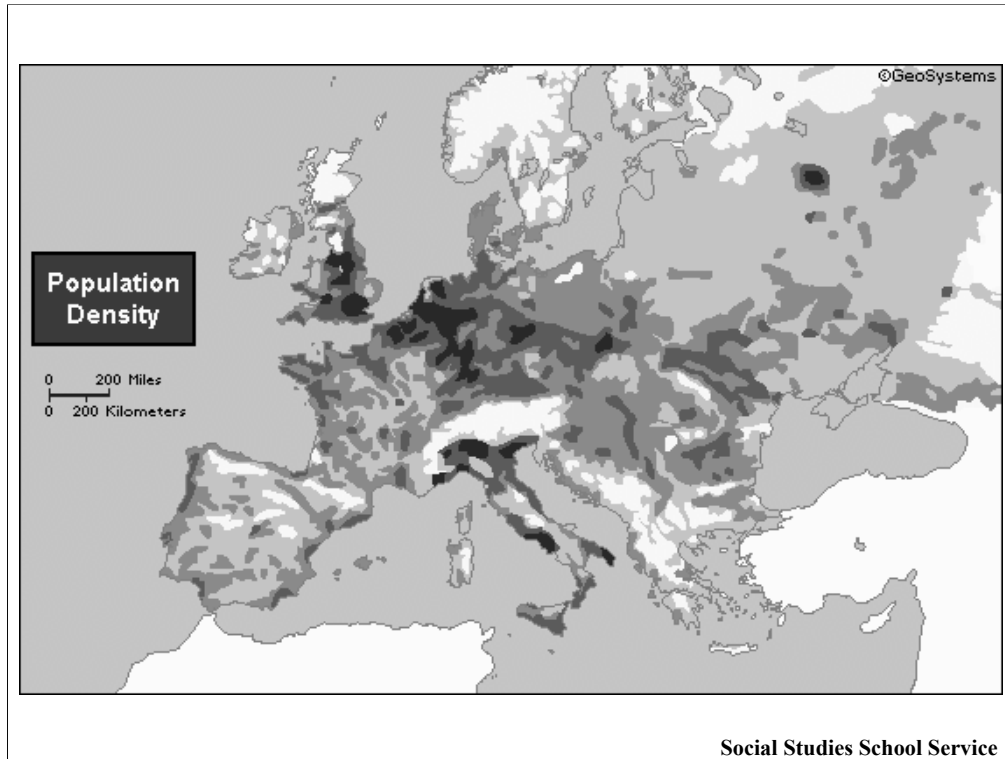
Thematic Map: Australia's Precipitation

Social Studies School Service

Here you see a thematic map that shows precipitation patterns in Australia. The legend reads as follows, beginning in the upper left and going across the rows:

- over 80 inches (200 cm) - darkest blue
- 40–80 inches (100–200 cm)
- 20–40 inches (50–100 cm)
- 10–20 inches (25–50 cm)
- under 10 inches (under 25 cm)

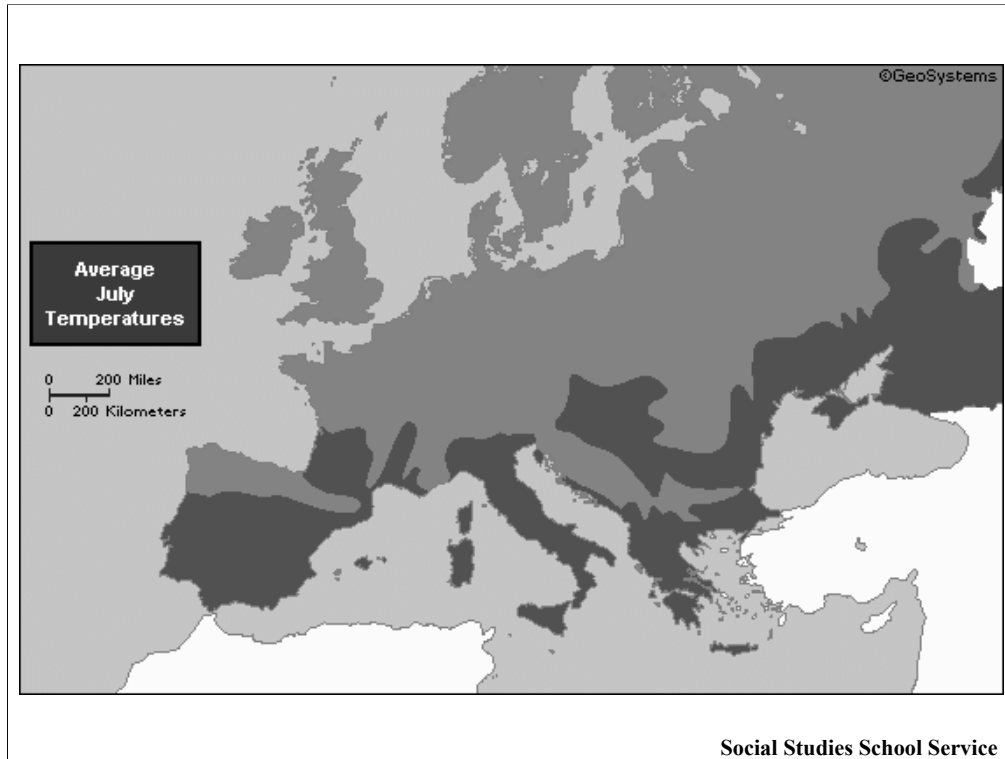
What does this map tell you about precipitation in Australia? If you wanted to visit Australia's rainforest, where would you go? If you wanted to spend some time in Australia's desert, where would you head? Does Australia's largest city, Sydney, get more or less rain on average than the rest of the country as a whole?

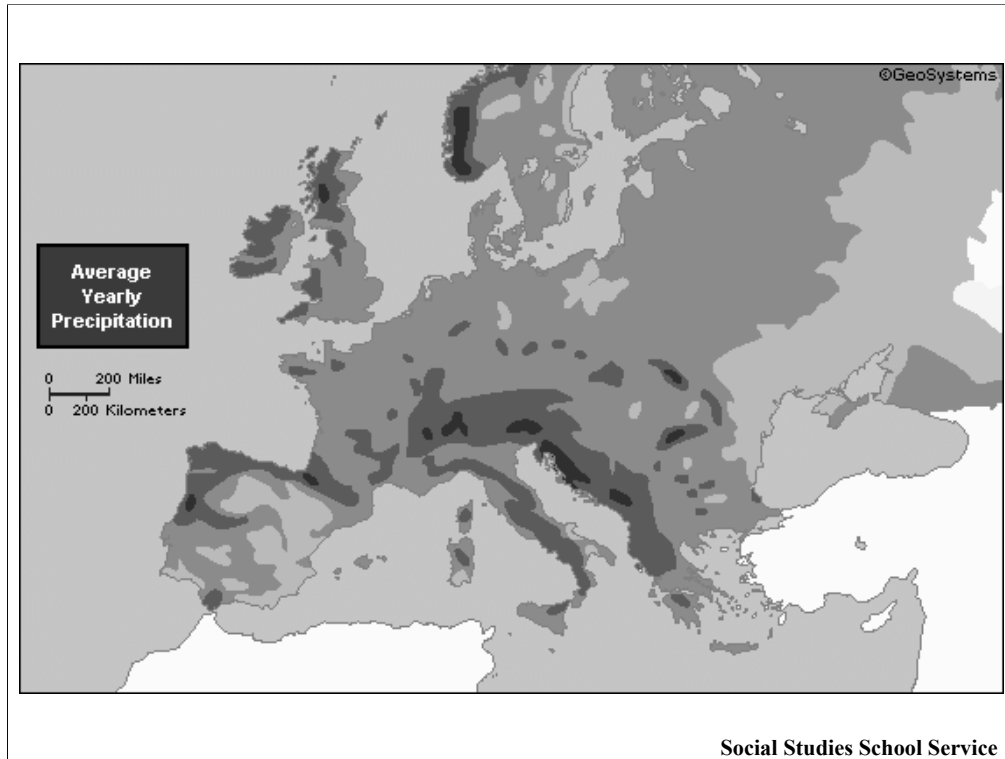


Maps can provide clues about a lot of different things.

For example, imagine that you're planning a trip to Europe. Look at the map on this slide and the ones on the next three slides. Which maps would be the most helpful in answering each of these questions?

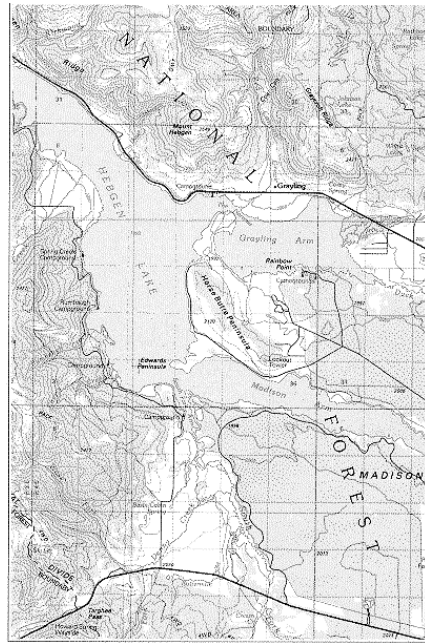
1. What types of clothing should I bring?
2. Is there anywhere I can go to escape the crowds and be alone in the countryside?
3. Might I get a chance to do some hiking in the forest?







Social Studies School Service

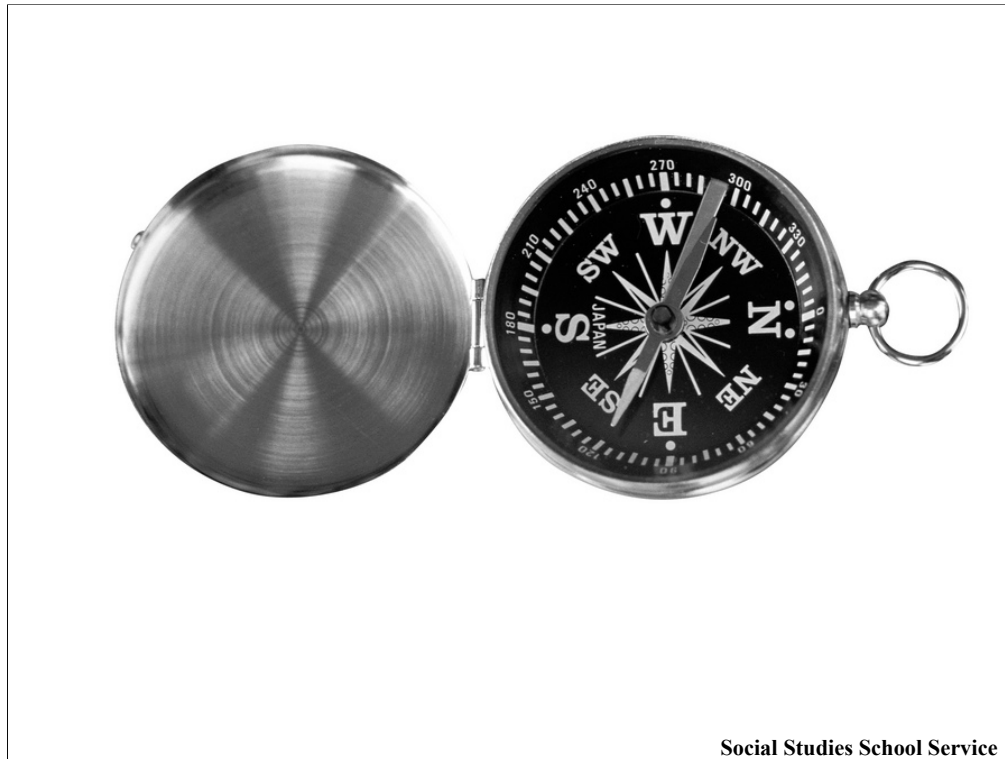


**Topographical Map:
Part of Hebgen Lake,
Montana-Wyoming-Idaho
quadrangle (from the
United States Geological
Survey)**

Social Studies School Service

Topographical (“topo”) maps show detailed features of land and water areas. They’re very helpful in navigation and are also great to take with you on wilderness hikes.

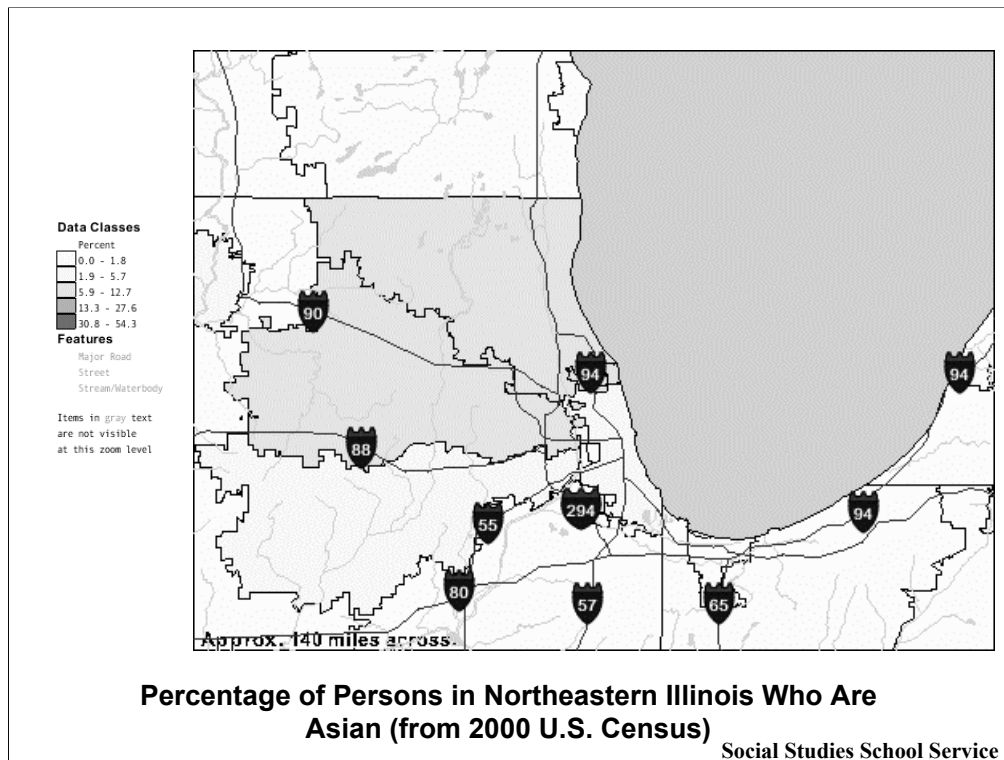
This map shows Lake Hebgen, which lies in southwestern Montana near the Idaho and Wyoming borders. Imagine that you’ve decided to take a backpacking trip for several days in the wilderness around this lake. How could this map help you? If you arrived at a particular road, river, or point on the lake, how could the map assist you in determining exactly where you were?



Social Studies School Service

Sometimes it's helpful to use tools along with maps. Probably the most frequently-used tool is the compass, which can help you determine the direction you're going. A compass can also help you locate features on a map and compare them to features you see in the landscape.

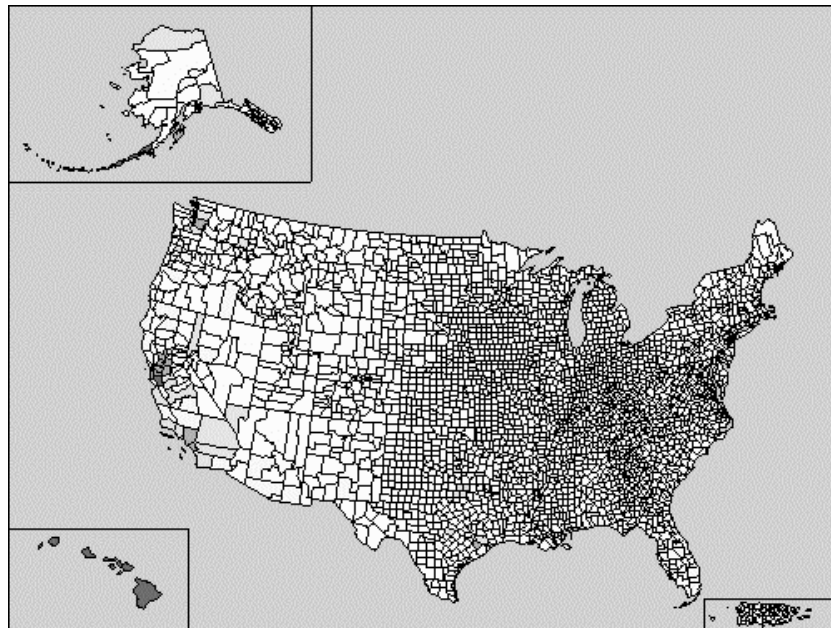
Smart wilderness hikers carry compasses *and* topo maps. They try to match up features on the landscape with features on the map. By using specific compass techniques, they can figure out how to get from their current location to their desired location, or they can figure out where they are if they're lost.



As you've seen, maps can help you make decisions. This 2000 census map shows northeastern Illinois, including the Chicago area. The big body of water is Lake Michigan.

This map shows the percentage of persons who list themselves as Asian, with no other ethnicity stated. The darker the green, the higher the percentage of people in this category.

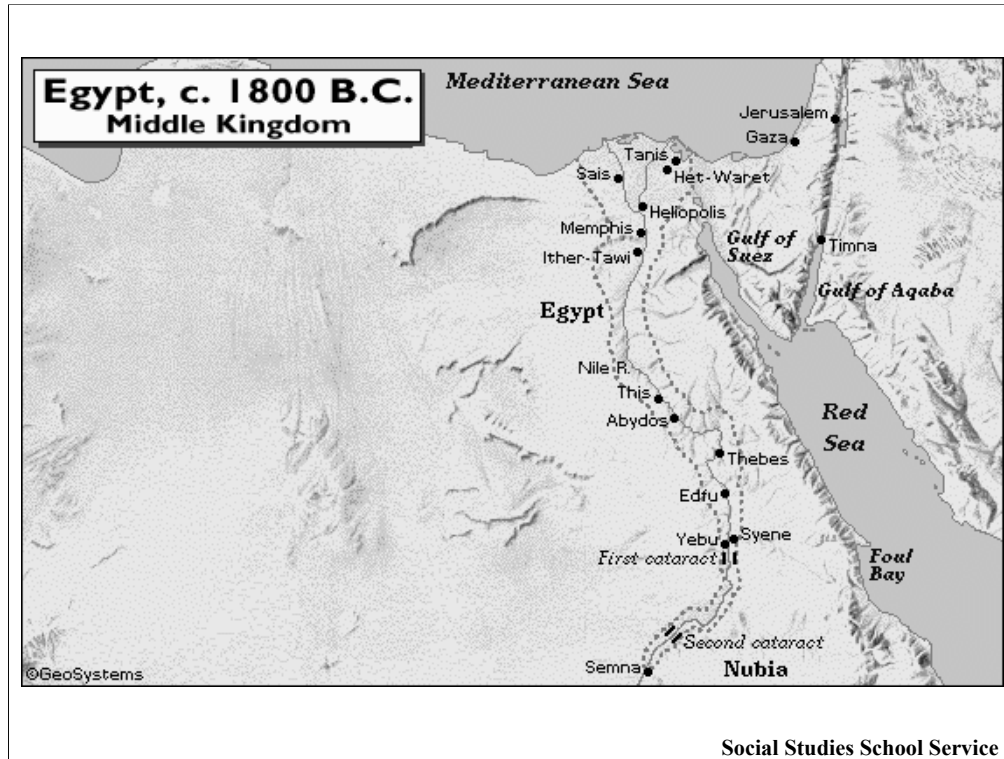
If you were planning to open a supermarket in northeastern Illinois that specializes in imports from Asian countries, how could this map help you? Where would you want to focus your efforts? Where would you be least likely to locate your store?



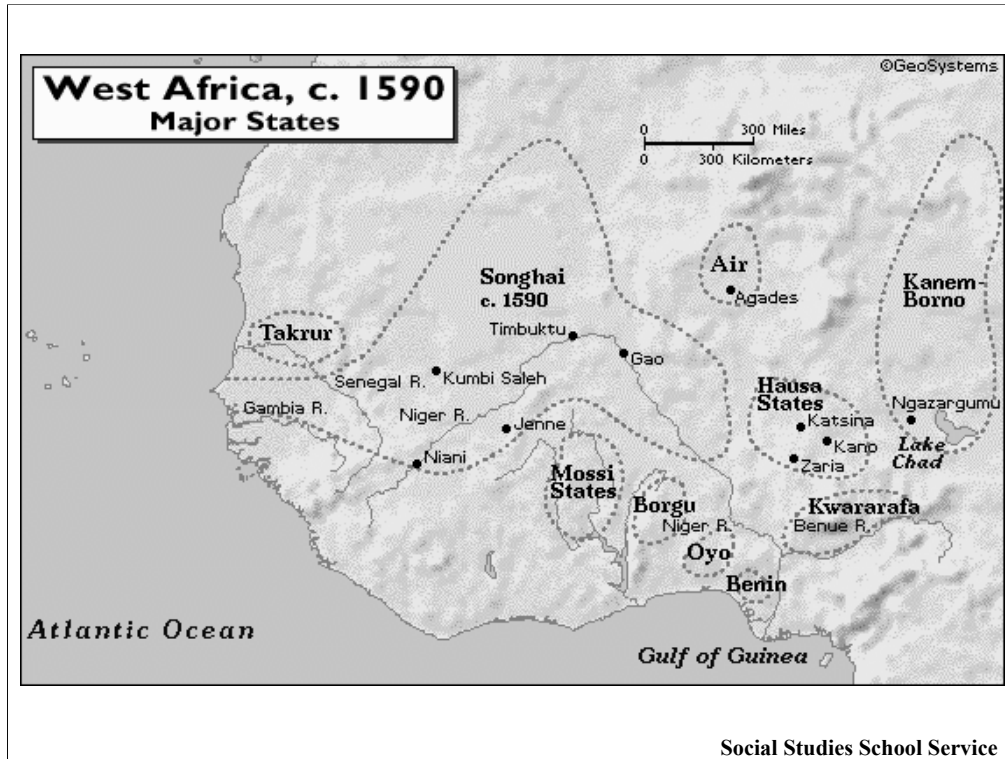
**Percent of Persons Who Are Asian Alone by county
(from 2000 U.S. Census)**

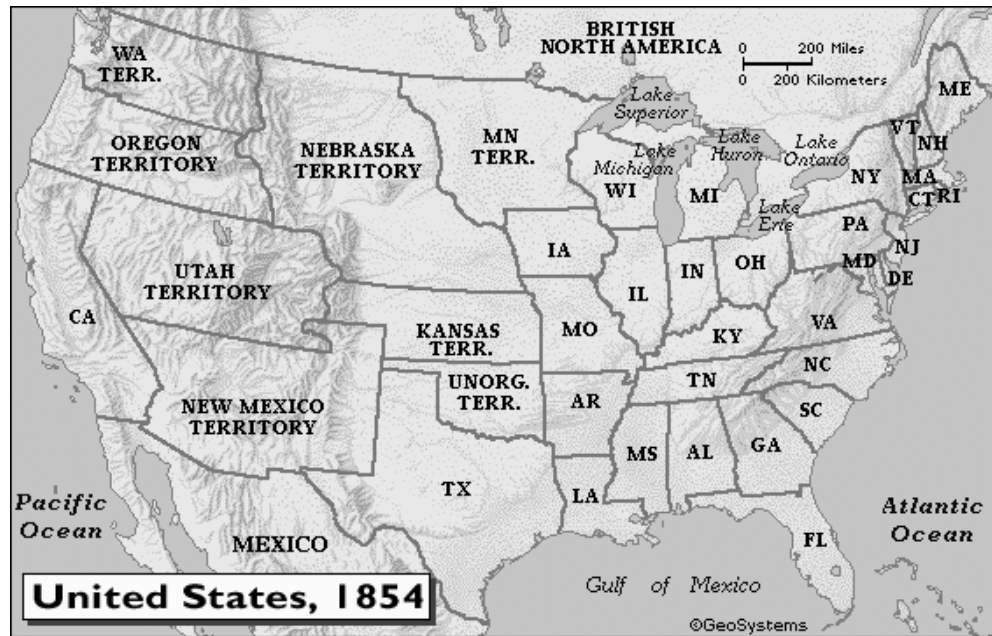
Social Studies School Service

Now imagine that you want to open a national chain of Asian supermarkets. Where would you focus your efforts? If you had to choose four regions of the country in which to open your first stores, which areas would you choose? Why?

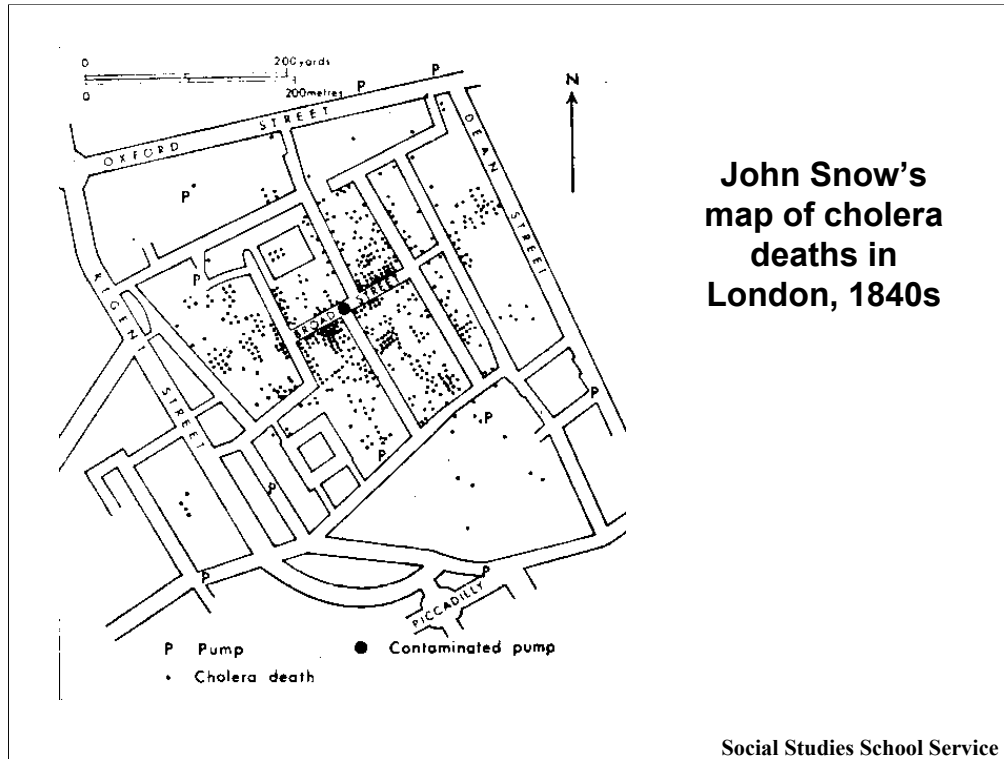


Throughout your years in school, you will see plenty of historical maps like this one and the ones on the next two slides. What purposes do you think historical maps serve? Do you think they're helpful when you're studying a historical topic such as ancient Egypt? Why or why not?





Social Studies School Service



In modern times, maps have often been used to show the patterns of disease outbreaks and other important medical phenomena. One of the first times this was done occurred in the mid-19th century when the city of London experienced an outbreak of cholera, an often fatal water-borne disease. Dr. John Snow meticulously mapped the locations of cholera deaths and determined that the people who had died all lived near and had drunk water from specific wells. He therefore deduced not only that cholera was probably carried through water but that these wells were contaminated with the disease.



This is a simple map of the continental United States. How might the map be used in the event of a public health scare, such as a bioterrorism attack? How might mapping the locations of a disease outbreak help the government and the medical profession assist people?

Mental Maps

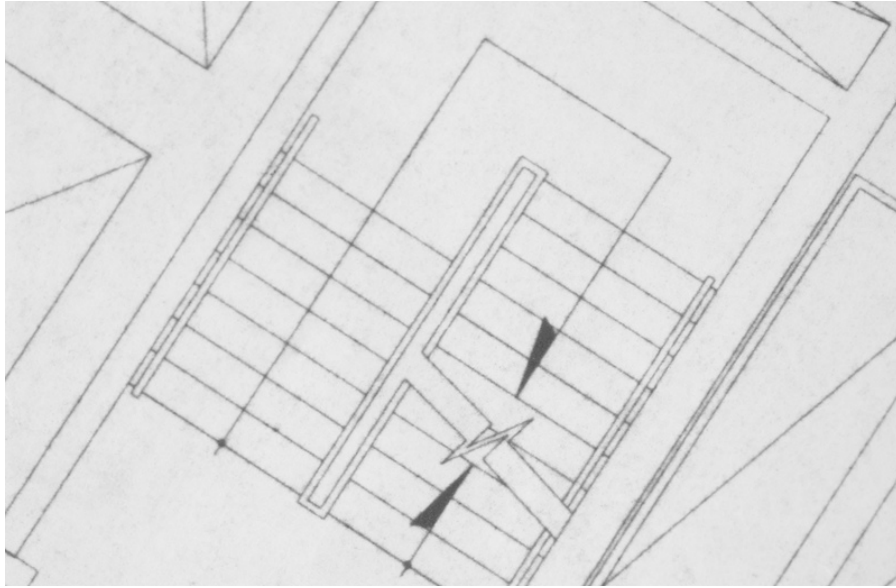


Social Studies School Service

(Geography Standard 2)

Mental maps are ones that people have in their minds about how and where places are located and organized. For example, you probably have one mental map of the route you take from home to school, another of your favorite shopping mall or park, and another of your own house or apartment.

Different people often have different mental maps of the same places, depending on their experiences in those places and their understanding of how those places are organized. For example, your younger siblings might draw a map of your town very differently than you would. Their mental maps of the town might emphasize the elementary school and the places where kids their age like to play, while your mental map would highlight your own school and the places you like to go.



Social Studies School Service

Architects draw blueprints like this one when they're planning the design of houses and other buildings.

Take a couple minutes to sketch a "blueprint" of your school. Try to include as many places as you can think of.

Compare your drawing with the ones your classmates have done. In what ways are they similar? Are there any noticeable differences? Is there any evidence shown that personal experiences have affected people's mental maps of the school? For example, do students with special interests (such as music or sports) seem to emphasize the parts of the school where those activities occur?



Social Studies School Service

Look at the pictures on the next few slides and think about where they might have been taken (state, country, etc.).

Note to teacher: As an option, you may want to have students sketch quick maps showing where they think these places are located. Next, have them compare their mental maps with each other. Discuss the following: Are these mental maps all about the same, or are there significant differences? Why might this be the case?



Social Studies School Service



Social Studies School Service

Your State

Social Studies School Service

Take a few minutes to sketch maps of the places named on this and the next two slides. Include as many features as you can think of, and try to place these features in accurate locations on the maps.

Compare your mental maps to real ones of these places. How much did you miss? How many things did you map accurately? Which map of the three appears to be the most accurate? Why?

Africa

Social Studies School Service

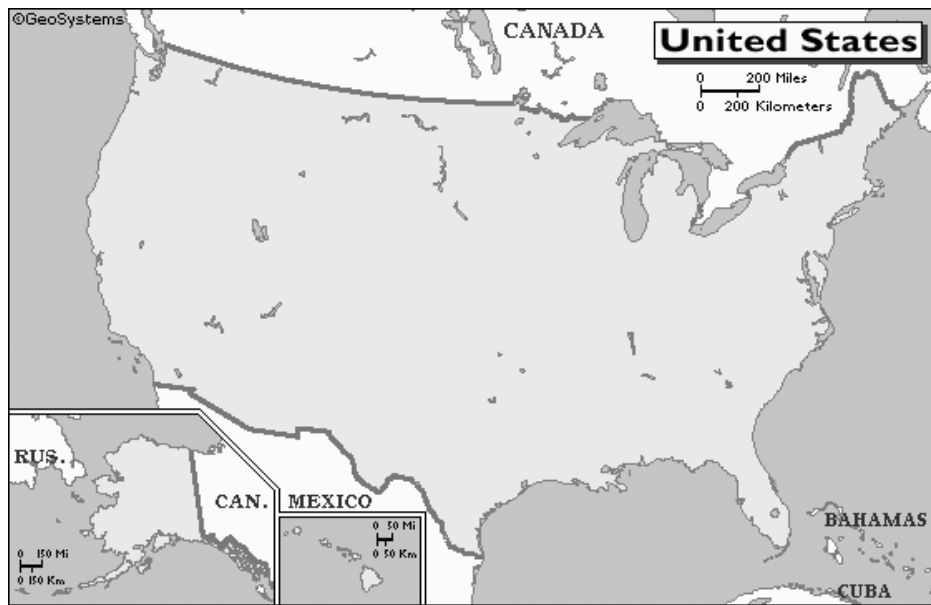
The World

Social Studies School Service

Atlanta, Georgia to Seattle, Washington

Social Studies School Service

What states would you travel through to get from Atlanta to Seattle? Can you draw a mental map of the United States that shows your route between these two cities?



Where are the population centers in the United States?

Social Studies School Service

(Geography Standard 3)

Imagine a picture of the United States taken from a satellite at night. Some parts of the country would be brightly lit, while others would be dark. The areas of bright light would correspond to heavily populated areas (urban areas); the dark parts would show rural areas. Perhaps you've already seen a map like this.

What would this map look like? Where would the population centers appear?



Los Angeles: City and Suburbs

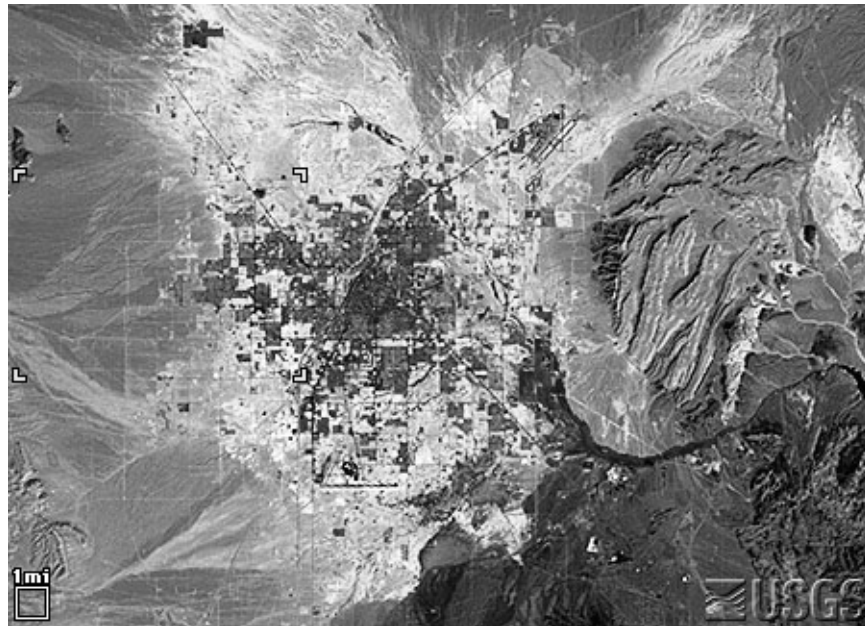
Social Studies School Service

Cities have centers, suburbs, and “exurbs,” which are towns located on the farthest outskirts of the cities. This partial map shows Los Angeles and some of its suburbs.

Although American suburbs have existed since the 19th century, they really began to expand after World War II, when many young families wanted their own houses and yards outside of crowded cities. In the traditional city-suburb relationship, the city functioned as the center and business hub while the suburbs acted as “bedroom communities” from which workers commuted into the cities for their jobs. During the last part of the 20th century, however, many businesses relocated to the suburbs, and increasing numbers of people both lived and worked in the suburbs. This phenomenon created a “reverse rush hour” in many metropolitan areas with highways congested both to and from the city.

Some metropolitan areas, such as Los Angeles, incorporated this late 20th-century suburban model into the early stages of their development, with significant suburban business hubs spread out over a large area. This pattern of development resulted from planning that emphasized automobile transportation rather than the mass transit-based pattern prevalent in older metropolitan areas.

What is the city-suburb relationship in the metropolitan area closest to where you live? Do many people work in the suburbs? Are there some “mega-burbs” that seem like suburbs but actually function as cities on their own? If you live in the suburbs, how often do you go into the city? If you live in the city, how often do you go to the suburbs?



Las Vegas, Nevada, 1972

Social Studies School Service

Satellite maps can help us trace the progress of urban expansion and suburbanization. This slide shows a USGS (United States Geological Survey) satellite image of Las Vegas in 1972. In a satellite image, the color red actually represents green areas of vegetation. You can see where people have planted grass and other vegetation, including golf courses, in the sparse desert landscape. The surrounding desert area appears green and gray.



Las Vegas, Nevada, 1992

Social Studies School Service

Notice the difference in this satellite image of Las Vegas taken in 1992. The red area is much larger, indicating more lawns and golf courses. Satellite images thus reveal the fact that Las Vegas represents one of the country's fastest-growing metropolitan areas.



Social Studies School Service

As time passes, cities and regional metropolitan areas change their transportation routes and methods, building additional freeways, toll roads, and public transportation systems such as subways and light rail.

How do you think these changes affect people's lives? How do they affect trade and business within and between metropolitan areas? What new opportunities arise when transportation routes change or expand? How does the availability of various types of transportation and transportation routes affect people's decisions about where to live, work, play, and shop? How do these decisions affect a region's economy?



City apartment buildings

Social Studies School Service

The next four slides show some of the different types of places where people live: city apartment buildings and townhouses, suburban houses, and country homes.

Look at each of these slides and think about why people would choose to live in each place. What factors might make people decide to live in one place instead of another? Think about economic considerations (money) and lifestyle preferences such as convenience, familiarity, being near family and friends, being near work, and being able to do a certain type of work.

Also, think about the types of housing available in your area. Do most people live where they do because they have to or because they've chosen to? If you could live in a particular type of place, where would it be and why?



City town homes

Social Studies School Service



Suburban house

Social Studies School Service



Country house

Social Studies School Service



Social Studies School Service

Earlier in this presentation, you used a map to help you decide where to open an Asian supermarket or supermarket chain. Now, imagine that you're planning to open a furniture store. You already know that it might be helpful to consult a map to help you decide where to locate your store. What other factors would you need to find out in order to make sure you locate your store in just the right place? What would you need to know about the city or town, the places people spend their time, the methods of transportation people use, and the other businesses located in the area? Can you think of anything else you'd need to take into account?



The Mall

Social Studies School Service

What would be some advantages and disadvantages of locating your furniture store in a mall? In general, what do you think are the pros and cons of locating stores in a mall?



Downtown

Social Studies School Service

What would be some advantages and disadvantages of locating your furniture store in the downtown area of either a large city or a smaller town? In general, what are the pros and cons of locating stores downtown? Does it depend on the city?

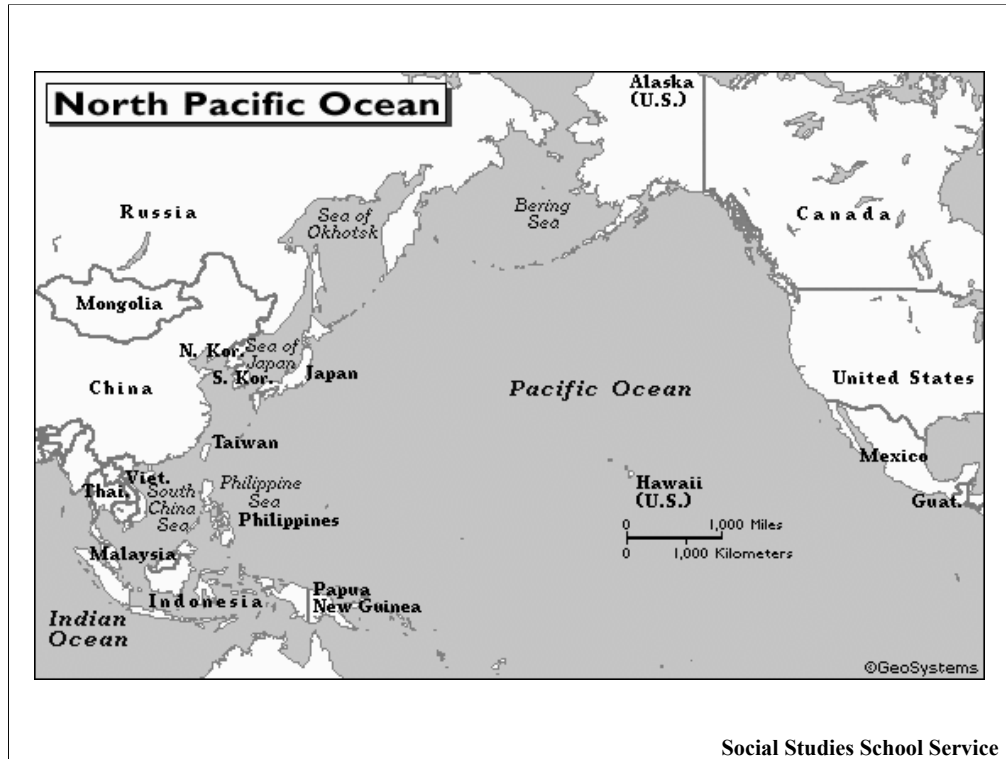


Social Studies School Service

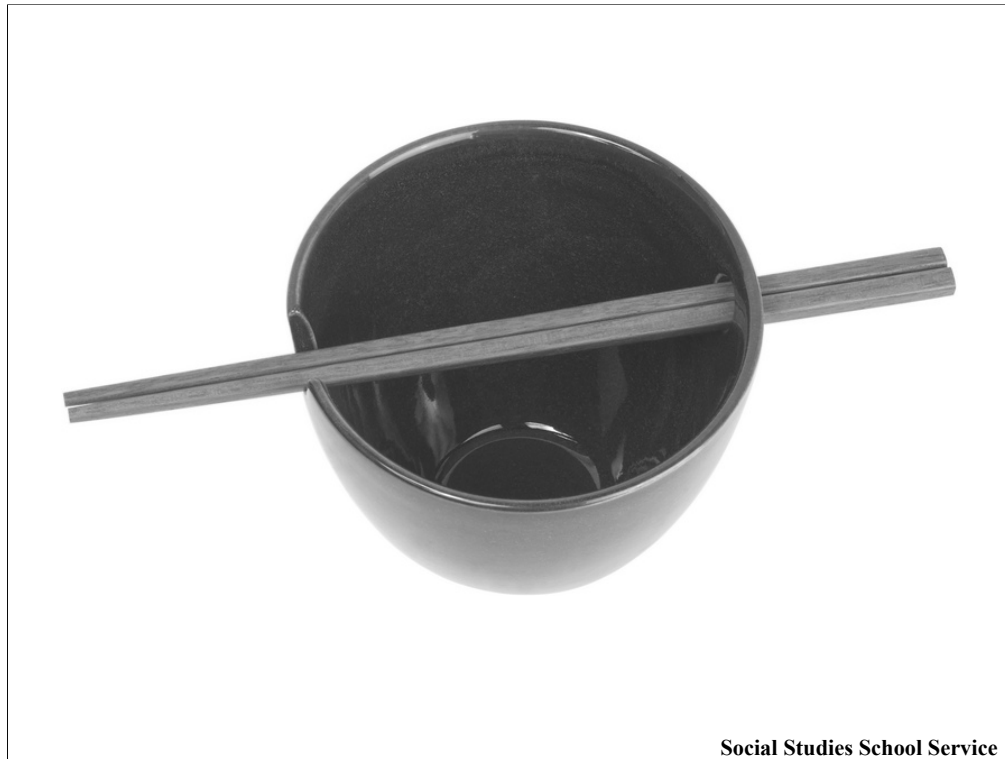
Have you ever seen two or more stores that sell virtually the same products located right next to, across the street from, or very close to one another? If so, did you wonder why a store owner would choose to locate his or her business so close to a competitor?

This practice is quite common, especially among suburban “big box” hardware/home supply stores and grocery stores. These companies often locate new stores next to competitors’ stores because market research they’ve conducted tells them that an area is busy enough to support two very similar stores. People also tend to choose where to shop based not only on what’s in the store but on how conveniently it’s located. For example, if someone has to make a left turn into a parking lot to shop in one store but a right turn to shop in another store, they’re likely to choose the latter store (unless they live in England or another country where people drive on the left!). The store that requires that person to make a left turn will stay in business because people coming from the other direction will choose it, since it only requires them to make a right turn.

Additionally, if a suburban property is deemed highly valuable, no store will want to “surrender” the opportunity to use part of that territory. If one company decided not to locate a store there, it would essentially be saying to the other store “you win.” No company wants to make that statement to a competitor.



The patterns of trade between countries are complex and depend on numerous factors, including geography, politics, and economics. Think about this complexity and the relationships between different places as you view the examples on the next five slides.



Social Studies School Service

You can find simple wooden chopsticks like these in most Japanese and Chinese restaurants in the United States. Not surprisingly, they're also widely used in Japan and China.



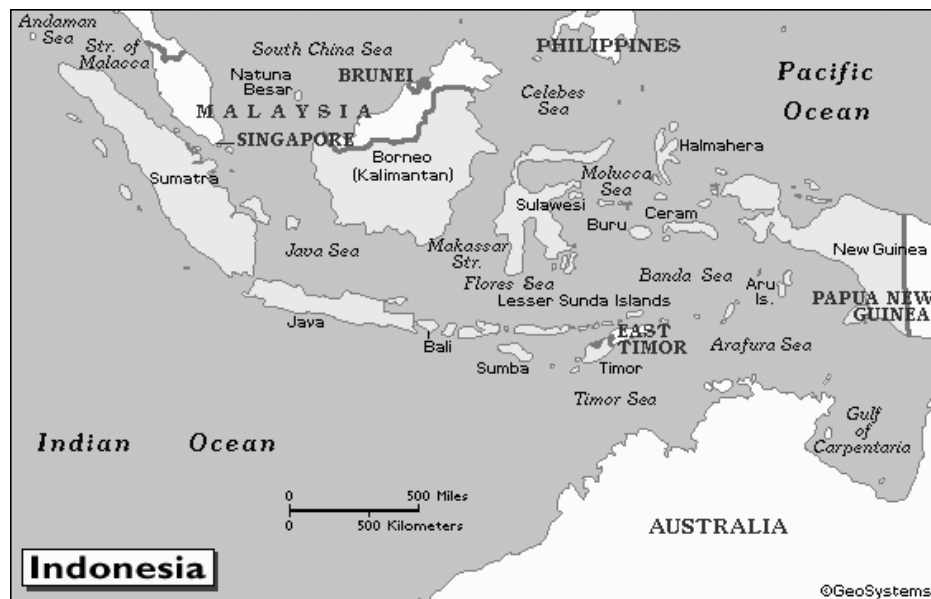
Social Studies School Service

Japan imports more tropical hardwood than any other country in the world, and it also imports a good deal of wood from temperate rainforests in the United States, such as the one shown in this slide. Much of this wood gets used to make disposable chopsticks like the ones you saw in the last slide.

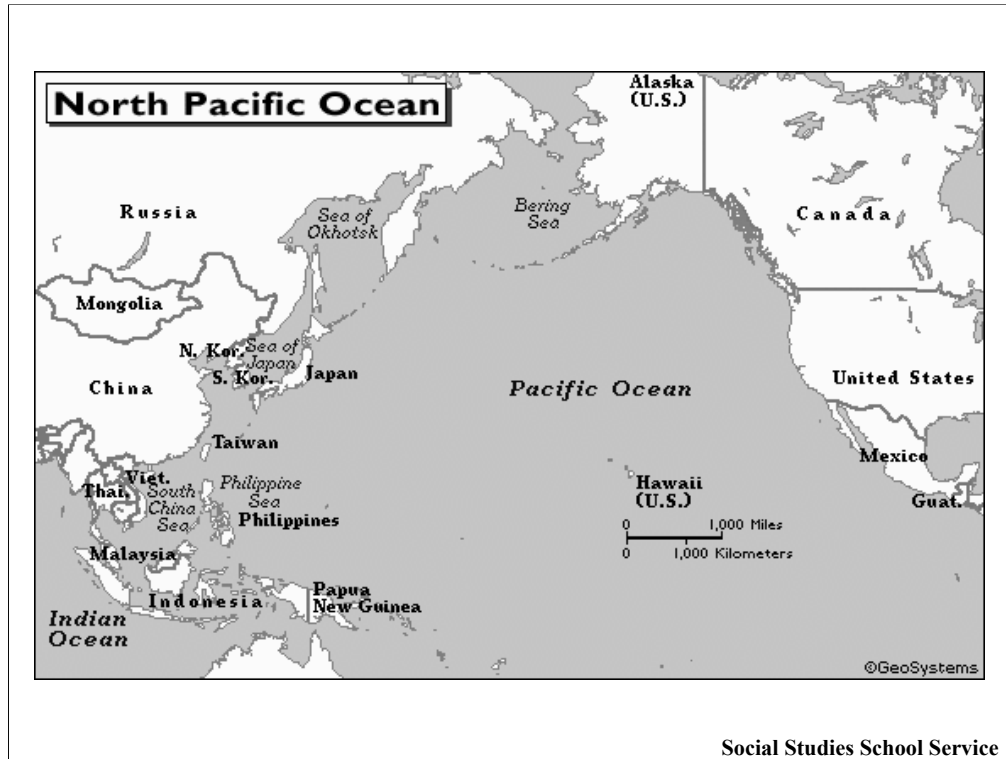


Social Studies School Service

Japan imports even more wood from Southeast Asia; it typically comes from rainforests that look the one in this slide. These rainforests are located mainly in Indonesia and Malaysia, as you'll see in the next slide.



Social Studies School Service



What routes do the raw materials for the chopsticks—and the chopsticks themselves—take?

How might these trade activities affect each of the places involved?



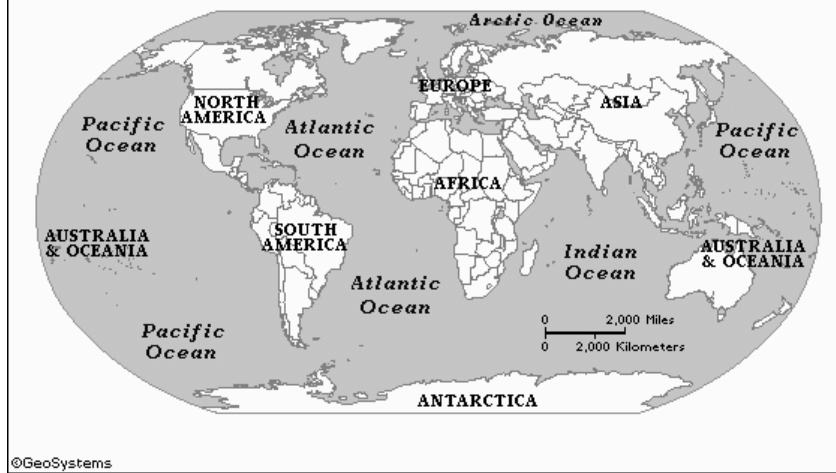
Chinatown

Social Studies School Service

In addition to trade products, people also move from place to place around the world.

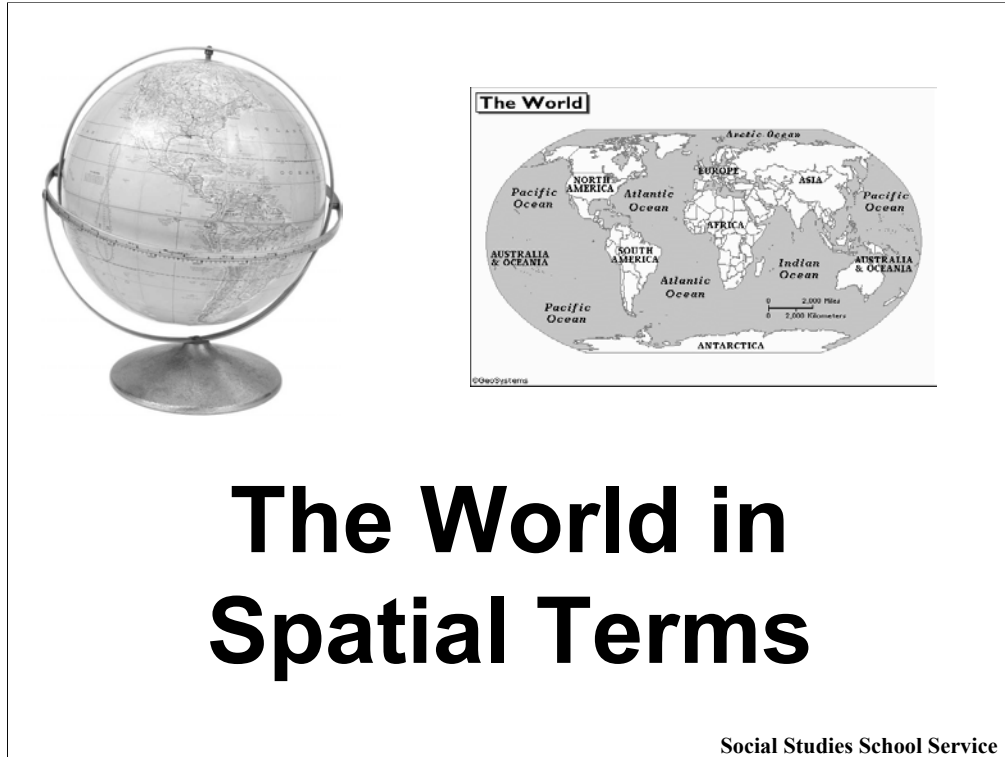
Immigrants from China have set up thriving neighborhoods (Chinatowns) in many large American cities, such as San Francisco and New York.

The World



Social Studies School Service

Today, the greatest numbers of immigrants to the United States come from Latin America and Asia. How far do they have to travel? Why do you think they come?



Reflect on the things you've learned in this presentation by discussing these questions:

In what ways can maps help you in your daily life? In what ways might they be helpful to the following people?

- Businesspeople
- Politicians
- Health workers
- Entrepreneurs

What are some reasons why different people might have different mental maps of the same place? How different are your mental maps from those of your classmates, parents, and other residents of your community?

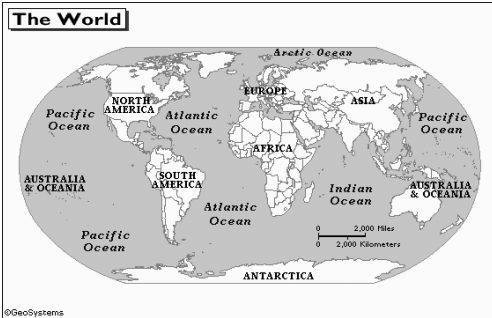
Where would you rather live: in the city, the suburbs, or a rural area? Why? What factors make you favor one type of place over another? How many of these factors have to do with location (i.e., where businesses are located)? How many of these factors have to do with convenience?

How do activities in one area affect activities in another? Think of the example of the wood trade that you just saw in the last few slides. Next, try to come up with other examples of how trade can impact diverse parts of the globe. Can you think of other types of interactions in which what happens in one location affects what happens in another location, even though they're very far away from each other?



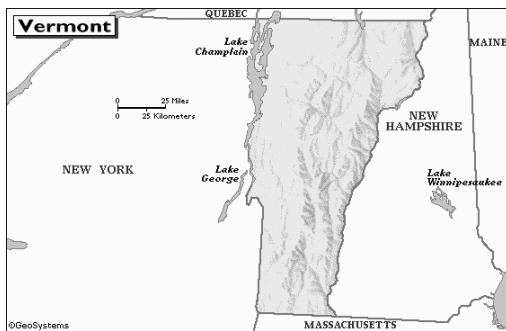
The World in Spatial Terms

Social Studies School Service

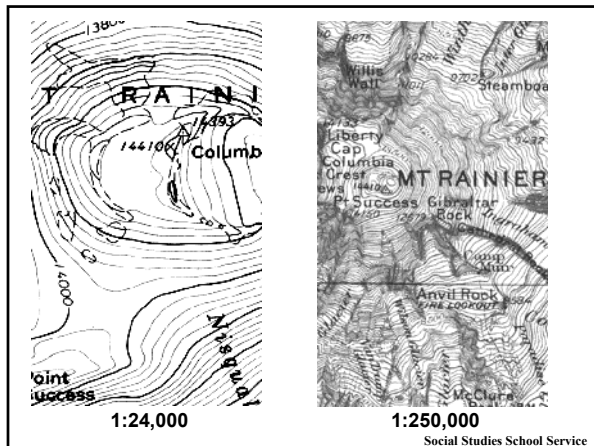


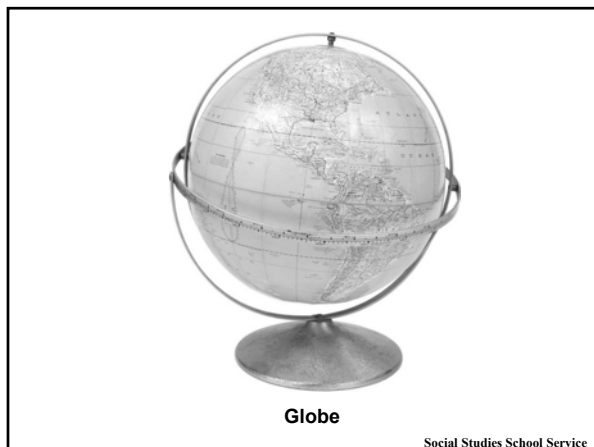
Map Scale

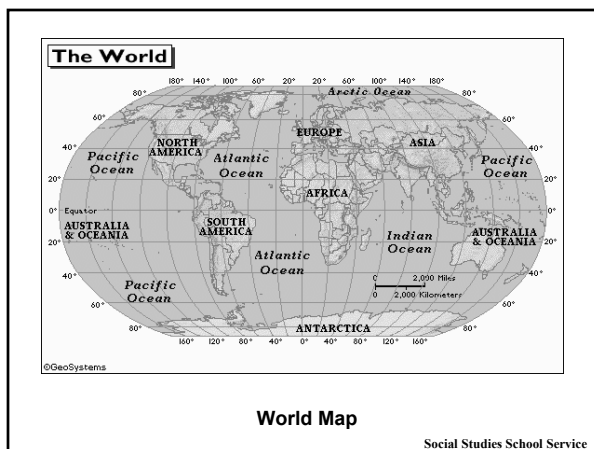
Social Studies School Service

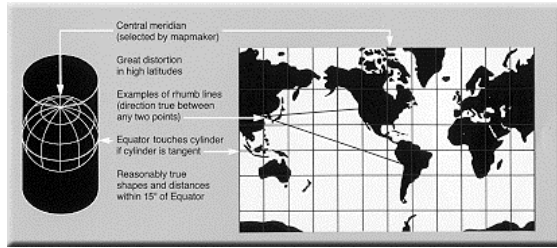


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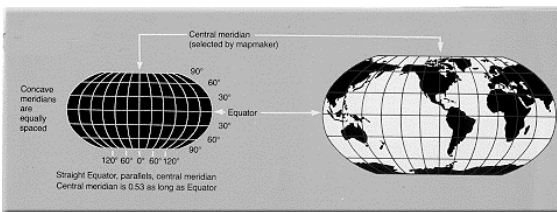






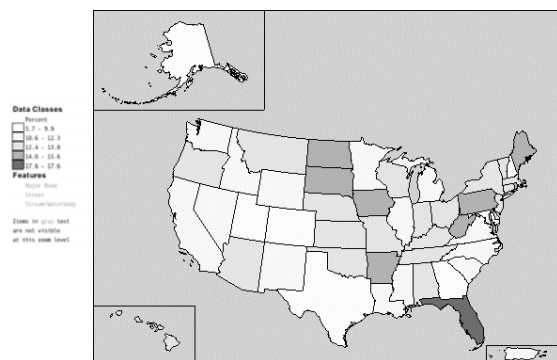
Mercator map projection

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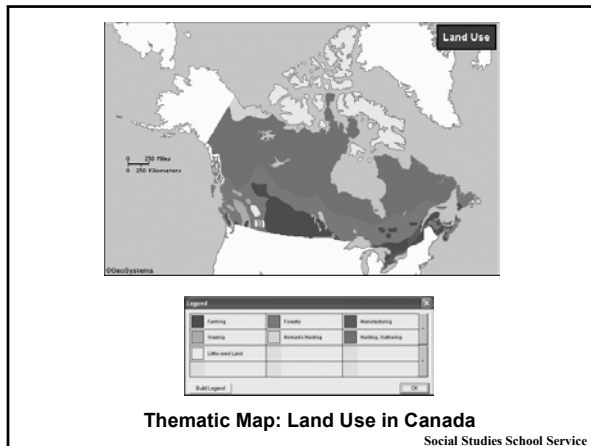
Robinson map projection

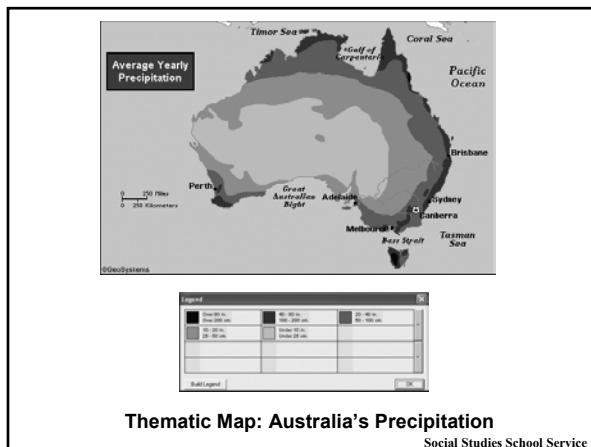
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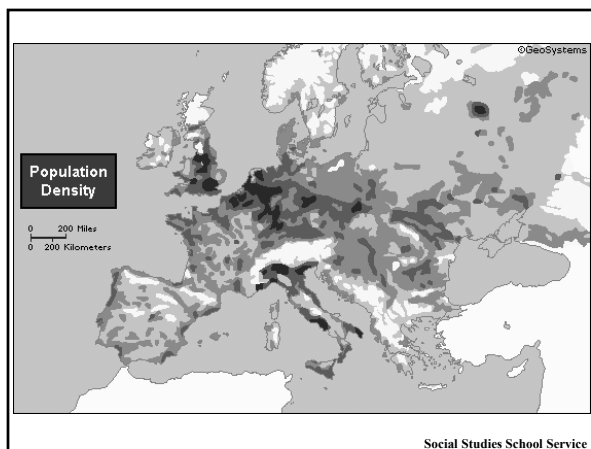


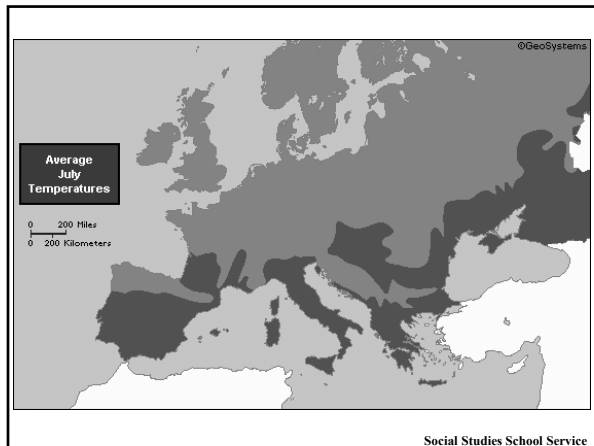
Percentage of Persons age 65 years and over (2000 census)

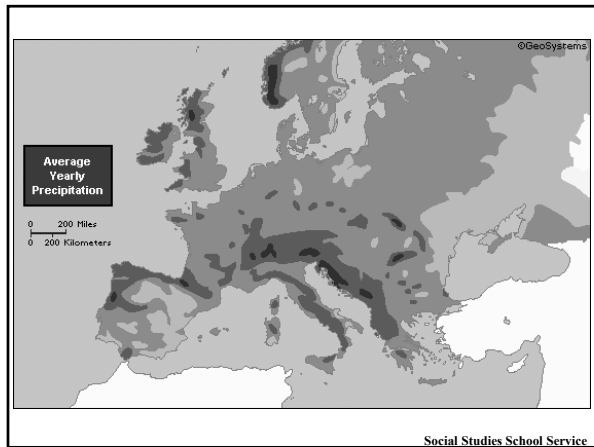
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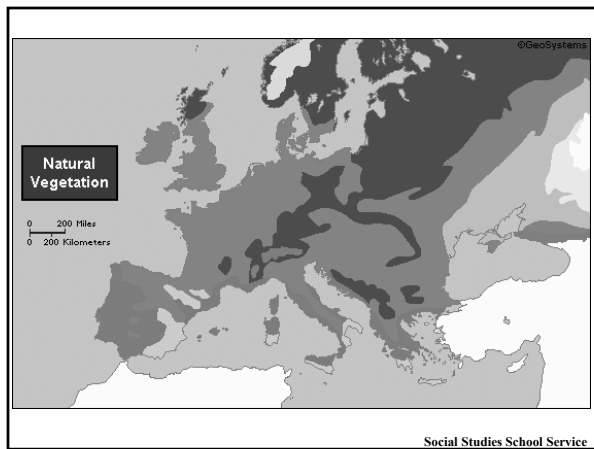












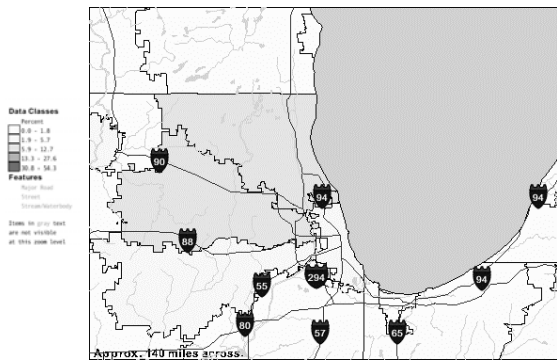


**Topographical Map:
Part of Hebgen Lake,
Montana-Wyoming-Idaho
quadrangle (from the
United States Geological
Survey)**

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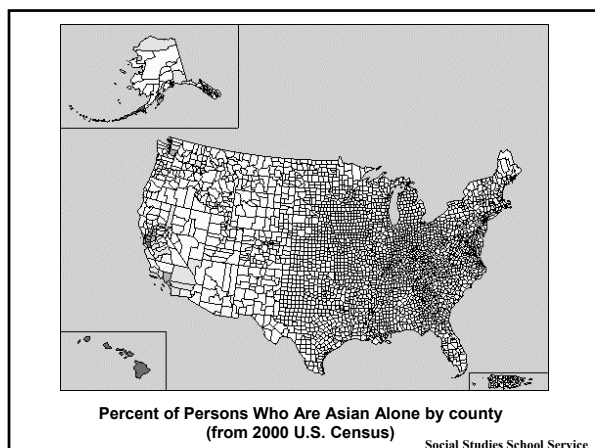


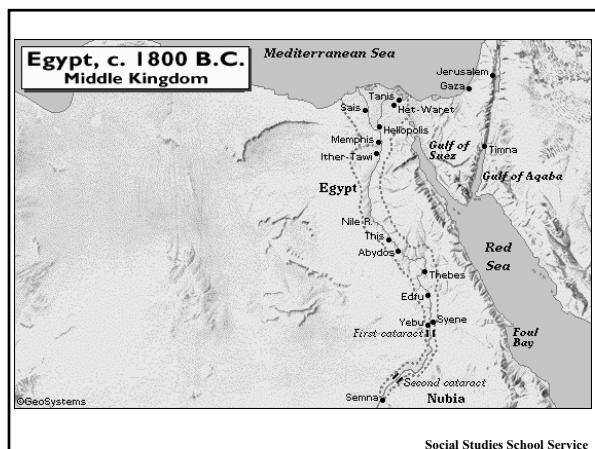
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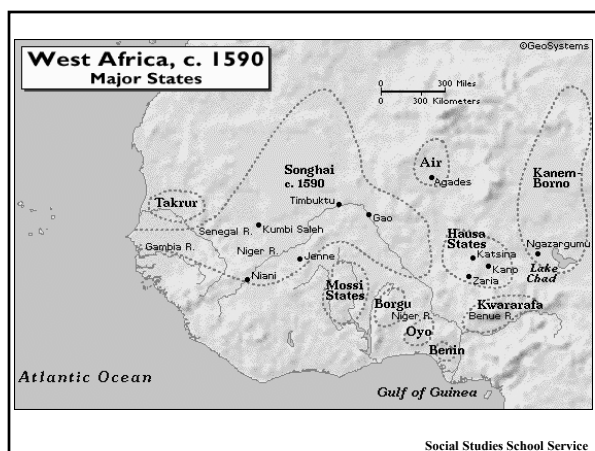


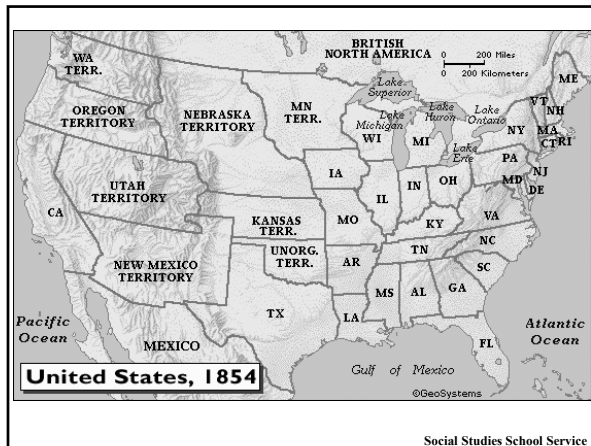
**Percentage of Persons in Northeastern Illinois Who Are
Asian (from 2000 U.S. Census)**

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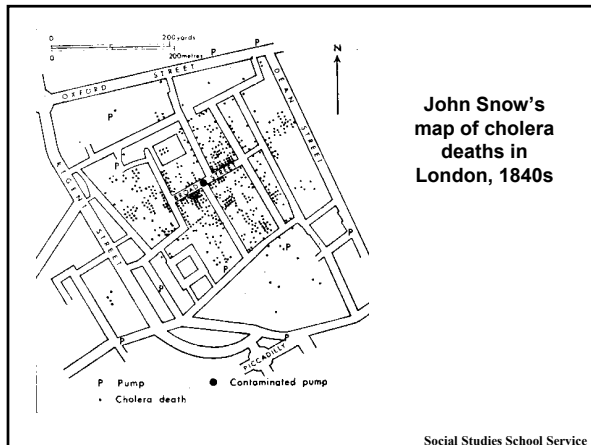








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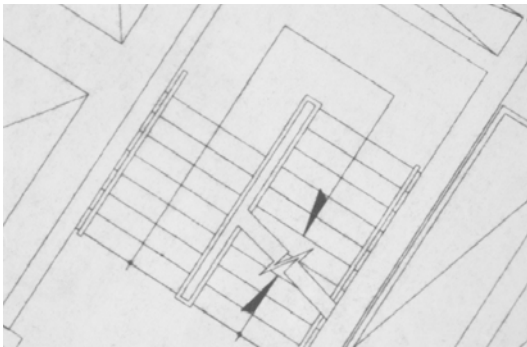


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Mental Maps



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Your State

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Africa

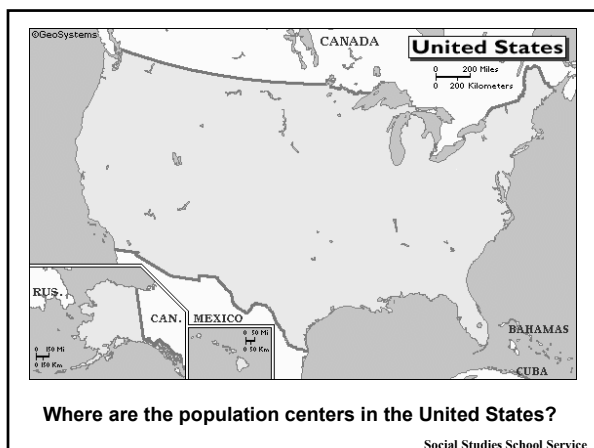
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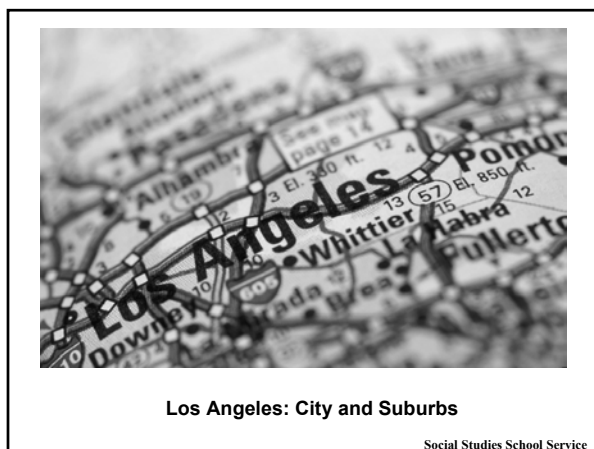
The World

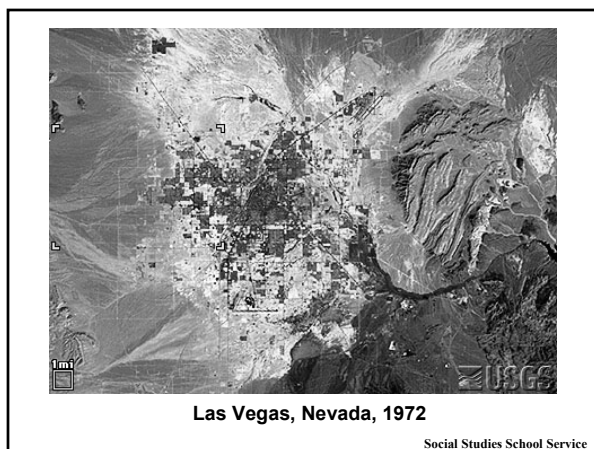
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Atlanta, Georgia to Seattle, Washington

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Las Vegas, Nevada, 1992

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City apartment buildings

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City town homes

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Suburban house

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Country house

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The Mall

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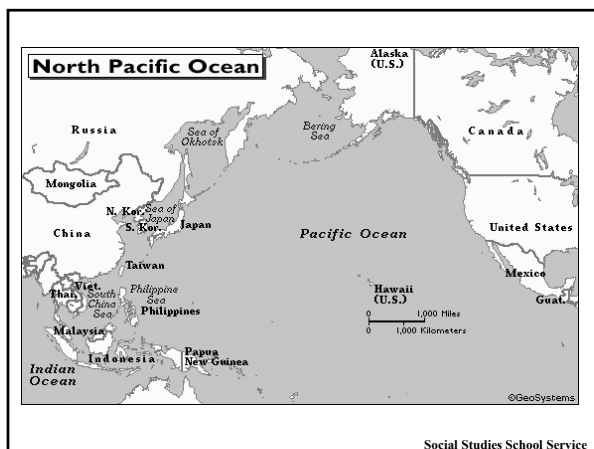


Downtown

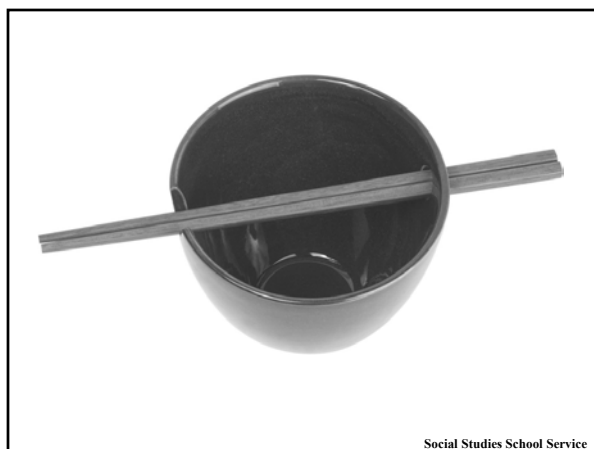
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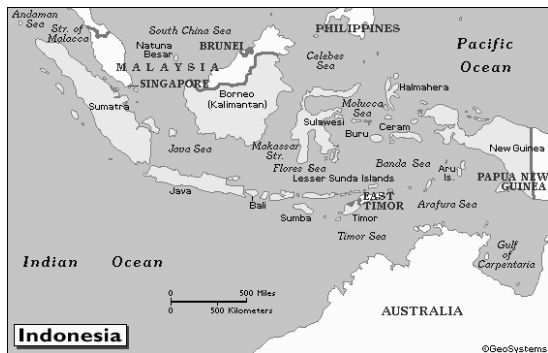
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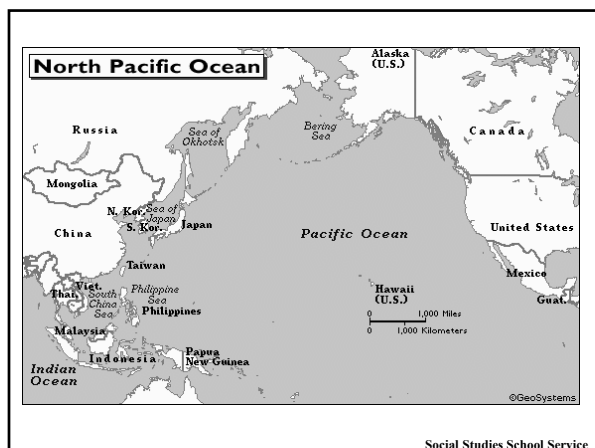
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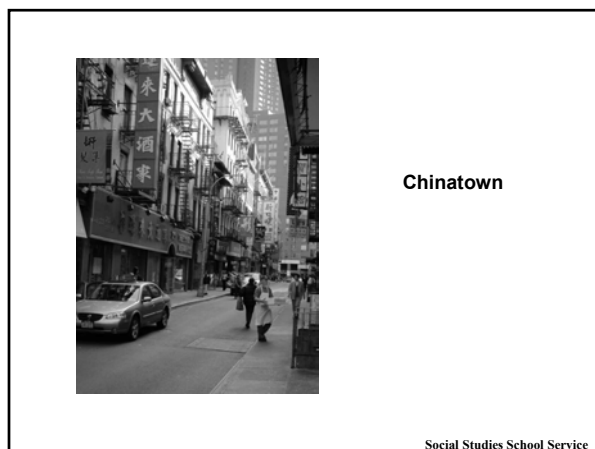
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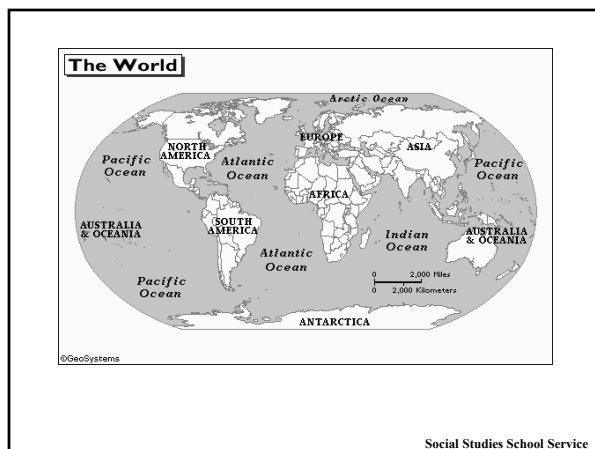


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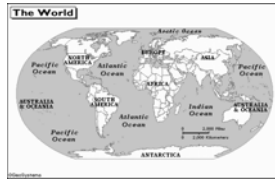


Chinatown

Social Studies School Service



Social Studies School Service



The World in Spatial Terms

Social Studies School Service

Multiple Choice Questions—The World in Spatial Terms

1. Which map provides the most close-up view of an area?
 - a. 1:100,000
 - b. 1:250,000
 - c. 1:50,000
 - d. 1:35,000
2. The Mercator projection least accurately represents which of these landforms?
 - a. Africa
 - b. Mexico
 - c. Greenland
 - d. South America
3. Which is an example of a thematic map?
 - a. a Mercator map
 - b. a map showing the political boundaries of all countries and states
 - c. a map that shows mountain ranges and rivers
 - d. a map that shows the types of crops planted in different areas
4. A topographical map is particularly useful for:
 - a. navigating
 - b. deciding where to locate a store
 - c. seeing the weather forecast
 - d. figuring out how to get to Seattle
5. If you're backpacking in the wilderness, it's a good idea to take a compass and a:
 - a. Mercator map
 - b. topo map
 - c. thematic map
 - d. census data map
6. Which of the following is a question that can be answered at least in part by looking at a map?
 - a. What should I wear on my trip to Japan?
 - b. Are there hiking trails in the mountains outside Tokyo?
 - c. neither a nor b
 - d. both a and b
7. Which is not a way in which a map of census data might be used?

- a. to help you see the distribution of different racial or ethnic backgrounds or ages
 - b. to help you figure out where to locate a business
 - c. to determine which route to take on a business trip
 - d. to see whether there's a significant Asian-American population in your county
8. Which type of map would not be helpful if you were studying ancient Greece?
- a. topographical map
 - b. historical map
 - c. thematic map
 - d. census data map
9. How can maps be helpful in studying diseases?
- a. They can show the locations of disease outbreaks.
 - b. They can show the location from which an infection is being transmitted.
 - c. They can show the type of pathogen (germ) that's causing the illness.
 - d. both a and b
10. Which statement about mental maps is not true?
- a. People tend to have different mental maps, depending on their experiences.
 - b. New Yorkers of different ages will probably have the same mental map of their city.
 - c. A person's mental maps change over time.
 - d. Mental maps of distant places can be shaped by people's impressions of those places, including information they've received from the media.
11. If you're a 15-year-old from Atlanta, which of your mental maps is most likely to resemble an actual map?
- a. a map of Georgia
 - b. a floor plan of the senior center that's two blocks from your school
 - c. a map of China
 - d. a map of Miami
12. Imagine a rapidly growing urban area. What would be a noticeable difference between a satellite image of this area in 1970 versus a satellite image of the same area in 2004?
- a. The 2004 image would have a lot more red.
 - b. The 2004 image would have a lot more green and gray.
 - c. The 1970 image would have a lot more blue.
 - d. The 1970 image would have a lot more green and gray.

13. Which of these statements is not true?

- a. Suburbs developed differently in different parts of the United States.
- b. Suburban areas expanded rapidly after World War II.
- c. In the past few decades, a “reverse rush hour” has been created in many metropolitan areas because more and more jobs are located in the suburbs.
- d. Fewer jobs are located in the suburbs today than in the 1950s.

14. Which of these statements is not true?

- a. Transportation routes and methods can have a significant impact on people’s lifestyles and on where people choose to live.
- b. The decision where to locate transportation routes in a metropolitan area can greatly affect a region’s economy.
- c. Transportation routes and methods in a metropolitan area tend to remain the same over time, with very few changes.
- d. Many people live in places that require them to drive to work rather than use public transportation.

15. Which of the following statements is true?

- a. Most people choose to live in places close to where they work.
- b. Economic factors almost never play a significant role in people’s decisions about where to live.
- c. Most cities offer only one type of housing.
- d. It’s helpful to consider a variety of factors when deciding on the best place to live.

16. What factors would be the least important to consider when determining where to locate a shoe store?

- a. availability of parking in the area
- b. the demographics (e.g., age or income level) of people who live and shop in the area
- c. whether there’s a good restaurant nearby
- d. what other types of businesses are located in the same area

17. Why would two large stores that sell exactly the same type of product be located next door to each other?

- a. They both assume there are enough customers in the area to sustain two stores.
- b. Neither store wants to allow the other store to “own” a particular territory.
- c. The property has been deemed highly valuable and desirable.
- d. all of the above

18. Which regions were most closely involved in the trade example of chopsticks that you saw in the presentation?
- a. North America, South Asia, and South America
 - b. North America, Japan, and Southeast Asia
 - c. North America, Japan, and Europe
 - d. Japan, South America, and Europe
19. Based on the chopsticks example, which of these statements is true?
- a. Deforestation of Southeast Asia's tropical rainforest is due in part to the demand for chopsticks in Japan and China.
 - b. The United States doesn't contribute to Japan's wood imports.
 - c. If you eat in a Chinese restaurant in your town, you can be certain that the chopsticks are made from wood that came from the tropical rainforest.
 - d. Wood is the main product that Japan exports to the United States.
20. Which of the following statements is true?
- a. Most immigrants to the United States come from Eastern Europe.
 - b. Most Chinese immigrants settle in New York's Chinatown.
 - c. It's impossible to determine from where the majority of today's immigrants to the United States come.
 - d. The greatest numbers of immigrants to the United States today come from Latin America and Asia.

Multiple Choice Questions—The World in Spatial Terms

Answer Key

1. Which map provides the most close-up view of an area?

- a. 1:100,000
- b. 1:250,000
- c. 1:50,000
- d. 1:35,000

answer: d

2. The Mercator projection least accurately represents which of these landforms?

- a. Africa
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- c. Greenland
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answer: c

3. Which is an example of a thematic map?

- a. a Mercator map
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answer: d

4. A topographical map is particularly useful for:

- a. navigating
- b. deciding where to locate a store
- c. seeing the weather forecast
- d. figuring out how to get to Seattle

answer: a

5. If you're backpacking in the wilderness, it's a good idea to take a compass and a:

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- b. topo map
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- d. census data map

answer: b

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answer: d

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answer: d

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answer: a

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answer: b

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answer: d

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answer: c

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answer: d

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answer: c

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answer: d

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answer: b

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- d. Wood is the main product that Japan exports to the United States.

answer: a

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- c. It's impossible to determine from where the majority of today's immigrants to the United States come.
- d. The greatest numbers of immigrants to the United States today come from Latin America and Asia.

answer: d

Discussion Questions

Slide 1

- How and why are maps created?
- How are they used?
- How do we create and store maps in our minds, and how do we use these “mental maps”?
- How are people and places organized on the Earth’s surface?
- How are people’s decisions affected by their locations and the locations of things in their environments (such as buildings, natural resources, and transportation routes)?

Slide 4

- Why is it important to figure out a map’s scale before you use it?
- Why would it help to know the scale?

Slide 6

- What are the advantages of using a globe to find information about the world?
What are the advantages of using a map?
- What are the drawbacks of each?
- Which do you use most often?
- Why?

Slide 12

Which maps would be the most helpful in answering each of the following questions:

- What types of clothing should I bring?
- Is there anywhere I can go to escape the crowds and be alone in the countryside?
- Might I get a chance to do some hiking in the forest?

Slide 20

- What purposes do you think historical maps serve?
- Do you think they’re helpful when you’re studying a historical topic such as ancient Egypt?
- Why or why not?

Slide 24

- How might mapping the locations of a disease outbreak help the government and the medical profession assist people?

Slides 33–34

- What states would you travel through to get from Atlanta to Seattle?
- Can you draw a mental map of the United States that shows your route between these two cities?
- What would this map look like?
- Where would the population centers appear?

Slide 35

- What is the city-suburb relationship in the metropolitan area closest to where you live?
- Do many people work in the suburbs?
- Are there some “mega-burbs” that seem like suburbs but actually function as cities on their own?
- If you live in the suburbs, how often do you go into the city?
- If you live in the city, how often do you go to the suburbs?

Slide 38

- What new opportunities arise when transportation routes change or expand?
- How does the availability of various types of transportation and transportation routes affect people’s decisions about where to live, work, play, and shop?
- How do these decisions affect a region’s economy?

Slide 39

- What factors might make people decide to live in one place instead of another?
- Do most people live where they do because they have to or because they’ve chosen to?
- If you could live in a particular type of place, where would it be and why?

Slides 43–45

Say you want to open a store.

- What factors would you need to find out in order to make sure you locate your store in just the right place?
- What would you need to know about the city or town, the places people spend their time, the methods of transportation people use, and the other businesses located in the area?
- Can you think of anything else you'd need to take into account?
- What would be some advantages and disadvantages of locating your store in a mall?
- What would be some advantages and disadvantages of locating your store in the downtown area of either a large city or a smaller town?
- In general, what are the pros and cons of locating stores downtown? Does it depend on the city?

Slide 46

- Have you ever seen two or more stores that sell virtually the same products located right next to, across the street from, or very close to one another?
- If so, did you wonder why a store owner would choose to locate his or her business so close to a competitor?

Slide 54

Today, the greatest numbers of immigrants to the United States come from Latin America and Asia.

- How far do they have to travel?
- Why do you think they come?

Slide 55

- In what ways can maps help you in your daily life?
- In what ways might they be helpful to the following people: businesspeople in your community; politicians; health workers; entrepreneurs?
- What are some reasons why different people might have different mental maps of the same place?
- How different are your mental maps from those of your classmates, parents, and other residents of your community?
- Where would you rather live: in the city, the suburbs, or a rural area? Why?
- What factors make you favor one type of place over another? How many of these factors have to do with location (e.g., where businesses or homes are located)? How many of these factors have to do with convenience?
- How do activities in one area affect activities in another? Can you think of other types of interactions in which what happens in one location affects what happens in another location, even if they're very far away from each other?

Extension Activities

1. Ask a variety of people, such as your friends, teachers, parents, and grandparents, to draw mental maps of the same place. Compare the maps and discuss the results with the people who drew them. What features have they emphasized, and why?
2. When people start new businesses, they often create business plans that spell out everything they're trying to accomplish and help them plan how they'll make their business successful. Work with a partner or in small groups to develop part of a business plan for a new store or other business in your state. Decide what type of business to start and where it should be located. Use your current knowledge of your state plus census data or other resources to help figure out where to locate your business. Write a paragraph or two describing your decision, and include a map showing the location of the new business.
3. Research the origins of a product that you use regularly. Find out where it was produced, where its raw materials (e.g., wood, rubber) come from, and if possible, the path it travels from the factory to your hands. Write a paragraph and illustrate a map with your findings.

Related Web Sites

National Geographic Map Machine

<http://plasma.nationalgeographic.com/mapmachine>

Create and view political, topographic, thematic, street, and other types of maps from around the world.

National Geographic Xpeditions

<http://www.nationalgeographic.com/xpeditions>

Go to Room 1 of the Xpedition Hall for some interactive activities related to map projections, mental maps, and thematic maps.

Link to the Xpeditions Atlas to download and print outline maps for every country, state, and Canadian province and several world regions. Choose whether to include cities and landscape features such as rivers.

National Geographic Round Earth, Flat Maps

<http://www.nationalgeographic.com/features/2000/exploration/projections>

Use this site to learn about planar, conical, and cylindrical map projections and other technical map features.

USGS Earthshots

<http://edcwww.cr.usgs.gov/earthshots/slow/tableofcontents>

View satellite images from various parts of the world. The images focus on such geographic topics as agriculture, cities, forests, and disasters and show changes to the earth's surface over time.

Online Map Creation

<http://www.aquarius.geomar.de/omc>

Input latitude and longitude to create maps of any place on earth.