

**Mapping Our World**



# **North America**

**Fran Sammis**

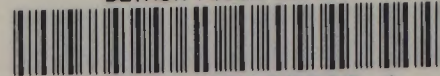


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Mapping Our World



# North America

by  
Fran Sammis

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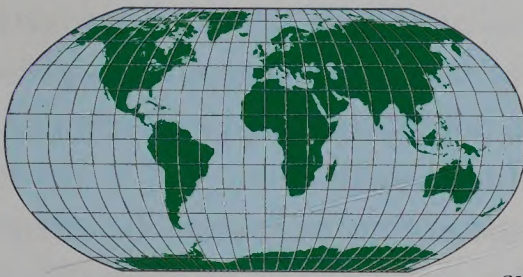
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# The Importance of Maps



As tools for understanding and navigating the world around us, maps are an essential resource. Maps provide us with a representation of a place, drawn or printed on a flat surface. The place that is shown may be as vast as the solar system or as small as a neighborhood park. What we learn about the place depends on the kind of map we are using.

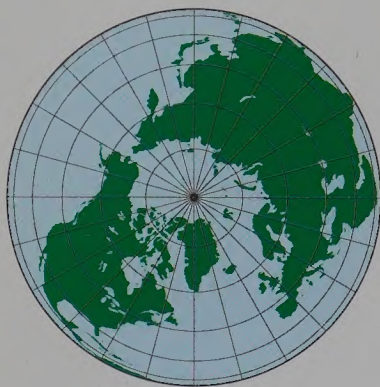
## Kinds of Maps

*Physical maps* show what the land itself looks like. These maps can be used to locate and identify natural geographic features such as mountains, bodies of water, deserts, and forests.

*Distribution maps* show where something can be found. There are two kinds of distribution maps. One shows the range or area a feature covers, such as a map showing where grizzly bears live or where hardwood forests grow.

The second kind of distribution map shows the density of a feature. That is, how much or how little of the feature is present. These maps allow us to see patterns in the way a feature is distributed. Rainfall and population maps are two examples of this kind of distribution map.





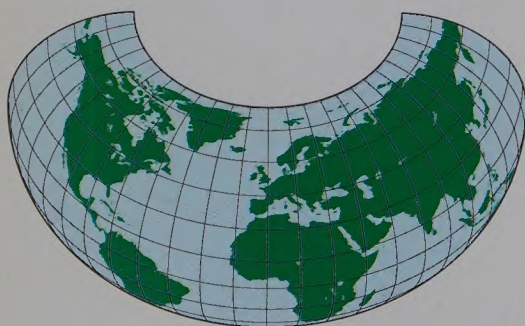
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Armadillo

*Political maps* show us how an area is divided into countries, states, provinces, or other units. They also show where cities and towns are located. Major highways and transportation routes are also included on some kinds of political maps.

*Movement maps* help us find our way around. They can be road maps, street maps, and public transportation maps. Special movement maps called “charts” are used by airplane or boat pilots to navigate through air or on water.

## Why Maps Are Important

Many people depend on maps to do their jobs. A geologist, for example, uses maps of Earth’s structure to locate natural resources such as coal or petroleum. A transportation planner will use population maps to determine where new roads may need to be built.

A map can tell us how big a place is, where one place is in relation to another, what a place was like in the past, and what it’s like now. Maps help us understand and move through our own part of the world and the rest of the world, too. Some maps even help us move through our solar system and universe!

## Terms to Know

Maps are created and designed by incorporating many different elements and accepted cartographic (mapmaking) techniques. Often, maps showing the exact same area will differ from one another, depending upon the choice or critical elements, such as scale and projection. Following is a brief listing of some key mapmaking terms.

**Projection.** A projection is a way to represent the round Earth on a flat surface. There are a number of different ways to project, or transfer, round-Earth information to



a flat surface, though each method results in some distortion. That is, areas may appear larger or smaller than they really are—or closer or farther apart. The maps on page 6 show a few varieties of projections.

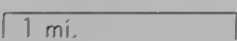
**Latitude.** Lines of latitude, or parallels, run parallel to the equator (the imaginary center of Earth's circumference) and are used to locate points north and south of the equator. The equator is 0 degrees latitude, the north pole is 90 degrees north latitude, and the south pole is 90 degrees south latitude.

**Longitude.** Lines of longitude, or meridians, run at right angles to the equator and meet at the north and south poles. Lines of longitude are used to locate points east and west of the prime meridian.

**Prime meridian.** An imaginary line that runs through Greenwich, England; considered 0 degrees longitude. Lines to the west of the prime meridian go halfway around the world to 180 degrees west longitude; lines to the east go to 180 degrees east longitude.

**Hemisphere.** A half circle. Dividing the world in half from pole to pole along the prime meridian gives you the eastern and western hemispheres. Dividing the world in half at the equator gives you the northern and southern hemispheres.

**Scale.** The relationship of distance on a map to the actual distance on the ground. Scale can be expressed in three ways:

1. As a ratio—1:63,360 (one inch equals 63,360 inches)
2. Verbally—one inch equals one mile
3. Graphically—

Because 63,360 inches equal one mile, these scales give the same information: one map-inch equals one mile on the ground.

Large-scale maps show a small area, such as a city park, in great detail. Small-scale maps show a large area, such as an entire continent, in much less detail, and on a much smaller scale.

## The Art and Process of Mapmaking

Maps have been made for thousands of years. Early maps, based on first-hand exploration, were some of the most accurate tools of their

◀◀ *Opposite: The maps shown here are just four of the many different projections in which the world can be displayed.*



225 million years ago

1



180 million years ago

2



65 million years ago

3



present day

4



time. Others, based on guesses about what an area was like, were often very beautiful, but were not especially accurate.

As technology—such as photography and flight—evolved, cartographers (mapmakers) were able not only to map most of Earth in detail, they were also able to make maps of our solar system.

To make a map today, cartographers first determine what a map is to show and who is most likely to use it. Then, they assemble the information they will need for the map, which can come from many different kinds of experts—such as meteorologists, geologists, and surveyors—as well as from aerial photography or satellite feedback.

## Mapping a Changing Earth

If you traced around all the land masses shown on a world map, then cut them out and put them together like a jigsaw puzzle, the result would look something like map 1 at the top of this page. Scientists think this is how Earth looked about 225 million years ago.

Over time, this single continent, Pangaea (Pan-JEE-uh), slowly broke apart into two land masses called Laurasia and Gondwanaland (map 2). Maps 3 and 4 show how the land masses continued to break up and drift apart over millions of years, until the continents assumed the shapes and positions we recognize today. Earth has not, however, finished changing.

Scientists have established that Earth's surface is made up of sections called tectonic plates. These rigid plates, shown in the map on page 9, are in





- ◀ *Left: The tectonic plates that lie beneath Earth's surface are in a slow but constant motion.*
- ◀◀ *Opposite: The continents of our planet were once clumped together but have spread apart over millions of years in what is called continental drift.*

slow, constant motion, moving from 1/4 to 1 inch a year. As they move, they take the continents and sea floors with them. Sometimes, their movements cause disasters, such as earthquakes and volcanic activity.

After many more millions of years have passed, our Earth's continents will again look very different from what we know today.

## Reading a Map

In order for a map to be useful, it must be the right kind of map for the job. A small-scale map of Illinois would not help you find your way around Chicago; for that, you would need a large-scale map of the city. A physical map of North America would not tell you where most of the people live; you would need a distribution map that shows population.

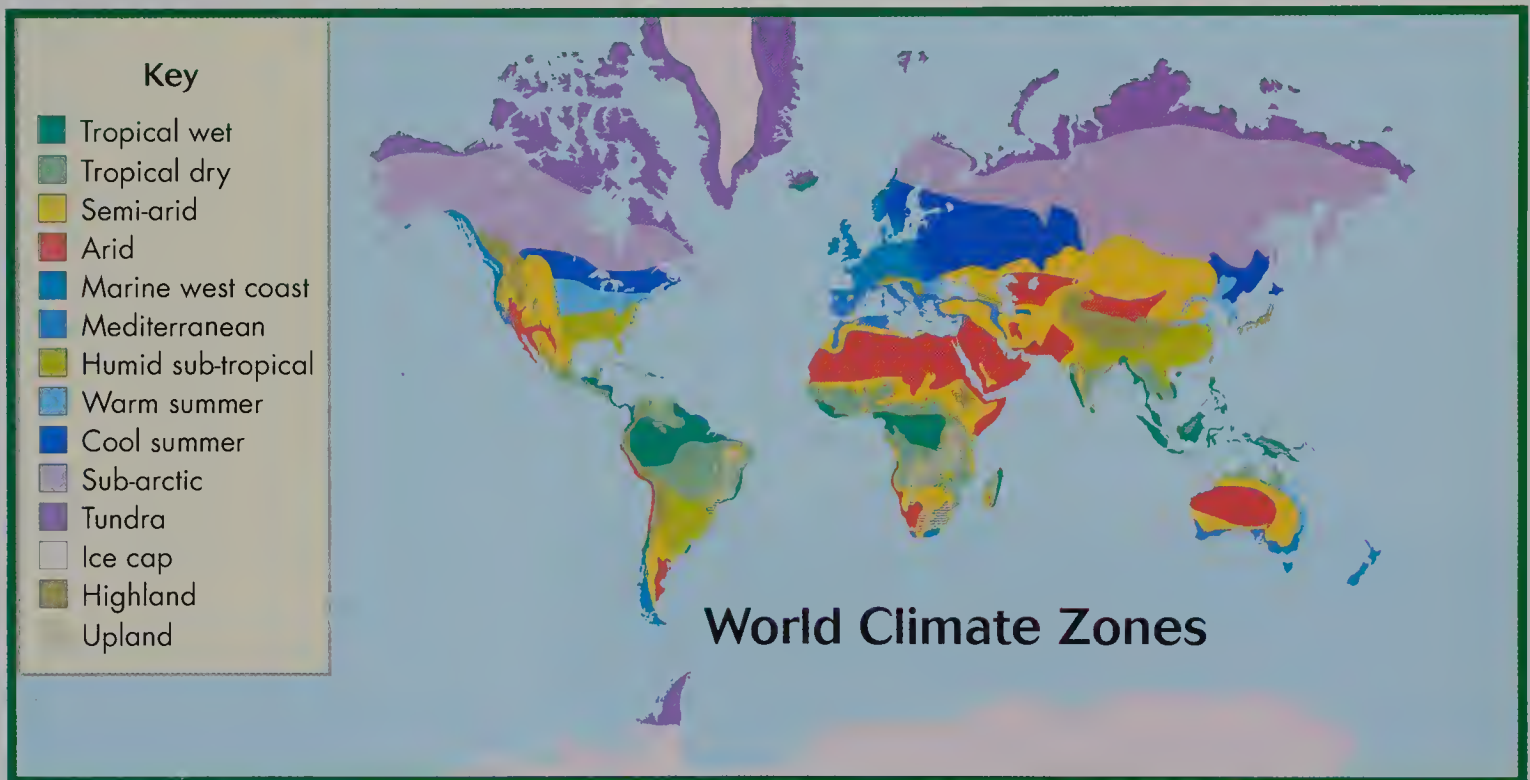
Once you have found the right map, you will need to refer to the map legend, or key, to be sure you are interpreting the map's information correctly. Depending on the type of map, the legend tells the scale used for the map, and notes the meaning of any symbols and colors used.

In their most basic form, maps function as place finders. They show us where places are, and we use these maps to keep from getting lost. But as you have begun to see, maps can tell us much more about our world than simply where places are located. Just how much more, you'll discover in the chapters ahead.





# Mapping Natural Zones and Regions



North America covers about 9,360,000 square miles (24,242,400 square kilometers), making it the third-largest continent in area. (Asia and Africa are larger.) North America's widest stretch is to the north. From Newfoundland in the east to Alaska's Aleutian Islands in the west, the continent is about 5,400 miles (8,690 kilometers) wide. Its narrowest point is in Panama, where it measures only 30 miles (48 kilometers) across.

▲ *Above: The northern regions of North America, Europe, and Asia all have similar climates.*

◀◀ *Opposite: Mountain ranges run the length of North America's west coast.*

North America is bordered by three oceans and a continent. To the north lies the Arctic Ocean; to the south, South America; to the east, the Atlantic Ocean; and to the west, the Pacific Ocean. Canada, the United States, and Mexico are the continent's three largest countries and make up almost the entire North American mainland. The rest of the continent consists of the countries of Central America, located between Mexico and South America; the island of Greenland; and the islands of the Caribbean Sea.

To learn about what North America is like, you might start by referring to maps that show its physical features (topography), climate, land use, and other natural characteristics.

## **The Topography of North America**

Several well-defined physical regions make up North America. Look at the physical map on page 10. Among the first things you'll notice are the large mountain chains running along the coasts.

The Appalachian Mountains, in the east, extend from Canada's northeast coast southward into Alabama. This chain of low, rounded mountains is the oldest on the continent. Broad plateaus and narrow, winding valleys are scattered throughout this mountain range.

In the west, several ranges combine in a stretch of rugged mountains that reaches from Alaska in the far northwest all the way down into Central America. The Pacific Mountain Ranges run along the Pacific Ocean. Mt. McKinley, the highest mountain in North America at 20,320 feet (6,194 meters), is found in Alaska, part of the United States. The Pacific Ranges also include active and dormant volcanoes. Volcanic peaks are found in Alaska, Washington, Oregon, and California. Mt. St. Helens, in the Cascade Range of southwestern Washington, erupted in 1980. Its volcanic gas and ash killed plant and wildlife within a 154-square-mile (400-square-kilometer) area.

The Rocky Mountains, or Rockies, run from Alaska through Canada's British Columbia, south to New Mexico, and into Mexico, where they are called the Sierra Madre Oriental range. The ridge



along the top of the Rockies is called the Continental Divide because it divides the way the rivers of the continent flow. Rivers west of the Rocky Mountains flow into the Pacific Ocean or the Gulf of California. Rivers east of the Rockies flow into the Arctic Ocean, Hudson Bay, the Atlantic Ocean, or the Gulf of Mexico.

Covering about half of Canada is the Canadian Shield, a vast rocky region of low hills, lakes, and bogs that forms a wide ring around the southern part of Hudson Bay.

The Interior Plains lie in the area between the Rockies and the Canadian Shield in Canada, and between the Rocky and Appalachian Mountains in the United States. It spreads out to cover the central region of the United States. The five Great Lakes—Erie, Huron, Michigan, Ontario, and Superior—are in this region. Lake Superior is the largest freshwater lake in the world.

North America's longest river system, made up of the Mississippi, Missouri, and Ohio Rivers, is located in the Plains region of the United States. Other important North American rivers are the Fraser and Mackenzie in northwestern Canada; the Yukon, which is mainly in Alaska; the Colorado, in the southwestern United States; and the Rio Grande, which forms the eastern half of the border between the United States and Mexico.

Between the two western mountain systems, and extending south into central Mexico, is a mostly dry region of plateaus and basins. Here is where you'll find most of North America's deserts, as well as the lowest point in the Western Hemisphere—Death Valley, California. Death Valley is 282 feet (86 meters) below sea level.

▼ *Below: Joshua Tree National Park is in Death Valley, the lowest point in the Western Hemisphere.*



A band of coastal plains borders North America along the Atlantic Ocean and Gulf of Mexico. The plains stretch from Cape Cod in the north to the Yucatan Peninsula of Mexico. Narrow coastal plains are also found along the eastern and western edges of Central America. Much of the interior, however, is filled with volcanic mountains.

## **Climate and Weather**

Climate and weather are not the same thing. Weather is short-lived; it changes from day to day. Climate is the average characteristics of the weather in a given place over a long period of time. Although climates can change, they do so much more slowly than weather—over many years, rather than days.

Meteorologists use various high-tech methods to gather the information that allows them to analyze and predict the weather. Among those methods are ways of viewing and mapping the world.

## **Analyzing and Predicting Weather**

The major elements that are used to describe the weather and categorize climate are: temperature, precipitation, humidity, amount of sunshine, wind, and air pressure.

Manned and unmanned weather stations on land and at sea, weather balloons, airplanes, and satellites are all used in gathering weather information for analysis. Radar, cameras, and thermal infrared sensors monitor and record the weather conditions.

The information from these sources is sent to weather centers throughout the world by means of a worldwide satellite system, called the Global Telecommunications System (GTS). The information is fed into computers that record and analyze the data, which can then be compiled into highly detailed and informative maps. The GTS also allows weather centers to share their data.

By studying global weather patterns over a long time, climatologists can map climatic regions—areas that have similar climates. The world climate zones map on page 11 is just one example of this kind of map.

► *Right: The United States has an unusually varied climate that includes eight zones.*



# Climate Zones



## North America's Climate

North America's climate is the most varied of all the continents in the world. As you can see from the map on page 15, it includes everything from the coldest to the hottest of climatic conditions.

- The island of Greenland—contrary to its name—is almost entirely covered with ice a mile (1.6 kilometers) deep. This polar ice cap, colored pink on the climate map, never melts. Only the coastal areas of Greenland are habitable, and, even there, the climate is harsh.
- The tundra makes up the far northern reaches of North America and the coast of Greenland. In tundra regions, the weather is always cold (averaging -40 degrees Fahrenheit and -40 degrees Celsius in winter), and there is little precipitation. The short, chilly summer is the only time when the soil isn't frozen. Even then, only the topmost layer—perhaps 10 inches (25 centimeters) deep—thaws.
- The vast majority of Canada and nearly all of Alaska have a sub-arctic climate (colored light purple on the map). In these areas, summers are short and cool, and winters are long and cold. There is light to moderate precipitation, mainly in the summer.
- Bands centering on the Great Lakes (colored dark blue on the map) enjoy a moist continental climate with cool to warm summers and cold winters. In these areas, precipitation is moderate year-round.
- The majority of the southeastern United States has a humid sub-tropical climate. This climate is marked by warm to hot summers, cool winters, and moderate precipitation all year.
- Most of west-central North America, colored red and gold on the climate map, has a dry climate, with varying precipitation. The arid areas include the deserts, where there is very little precipitation. The semi-arid areas, which include the western plains and much of northern Mexico, receive irregular, light precipitation throughout the year. The daily temperature in semi-arid areas can fluctuate widely, ranging from hot during the day to cold at night.
- A tropical dry climate is typical of southern Mexico and the Yucatan Peninsula, the Pacific coast of Central America, and the large islands



of the Greater Antilles in the north Caribbean Sea. These areas are hot (reaching average daytime highs of 80 degrees Fahrenheit and 26 degrees Celsius), with both wet and dry seasons. In the wet seasons, the rain is heavy.

- The southern part of the Yucatan Peninsula, the Caribbean coast of Central America, and some Caribbean islands have a tropical wet climate. These are the rain forest areas of North America—hot areas with consistent, heavy rainfall throughout the year.

## ***Animals and Plants***

With so many climate regions, it's not surprising that North America has an abundant mix of animals and plants. No plants grow on the ice cap of Greenland, and the only animals to be found are those that occasionally migrate through, such as polar bears and arctic terns.

The tundra regions, though cold and frozen much of the year, offer much more variety. During the brief summer warm-up, lichens and mosses, grasses, and low-growing shrubs come alive. Polar bears hunt seals and walruses, and Arctic hares, lemmings, and foxes burrow into the landscape. Herds of musk oxen and caribou make the tundra their home; so do grouse (a type of game bird) and a variety of ducks.

South of the tundra regions, much of North America is covered by forest. More than a third of Canada and the United States is forest land. The colder climate of northern Canada supports sprawling evergreen forests of spruce, fir, and pine. Deciduous forests grow in more temperate climates, such as the eastern United States. Here you'll find forests of oak, maple, beech, hickory, and birch.

In the western mountain ranges of North America, mixed forests include fir, pine, and aspen trees. At the southern end of the Marine West Coast, in California, you'll find two special trees: redwoods, the world's tallest living things, and bristlecone pines, the world's oldest.

Herds of deer and moose roam the woods of Canada and the United States, while bobcats, wolves, and foxes wind through the trees on hunting expeditions. Forest streams support beavers, muskrats, and otters.



▲ ◀ *Above left: These towering redwood trees, called the Four Guardsmen, are in Sequoia National Park, in California.*



▲ ▶ *Above right: An alligator is at home in this swamp in Florida's Everglades.*

In the warm, moist swamps and coastal areas of the southeastern United States, you can find alligators, snapping turtles, and pelicans and other water birds. North America's rain forests, in Central America, are home to a variety of colorful birds such as toucans and quetzels. Other tree-dwellers include monkeys, sloths, and bats.

Cacti and succulents thrive in North America's deserts. Much of the year, the deserts look almost barren, but brief, seasonal rains cause vivid flowers to carpet the sand. Among the animals that live on the desert floor are lizards, armadillos, snakes, spiders, and scorpions. Above them fly a variety of birds, including vultures and doves. With no trees available, elf owls and woodpeckers make their homes in sturdy saguaro cacti.

Bison, prairie dogs, long-eared jack rabbits, and pronghorn antelope roam the plains, which are covered with short grasses and scrubby plants. In the craggy mountain ranges of western North America, you'll find sure-footed mountain goats and sheep roaming the ledges, as well as smaller mammals such as pikas and marmots.

## How Climate and Topography Affect People

As we have seen, climate greatly affects plant and animal life. Of course, a region's climate and topography can affect many aspects of human life as well. Among them:

**Population distribution.** More people tend to settle in areas that have a mild or moderate climate, adequate rainfall, and fairly level, open land. Population will be less densely distributed in regions



that are mountainous or thickly forested, and in regions with climates that are very cold or dry. You can see this connection if you compare the world climate zones map on page 11 in this chapter with the world population density map on page 33 in Chapter 2.

**How people live and work.** The type of housing people live in, the clothes they wear, and the kind of work they do all depend in part on the climate of their region. The physical structure of the land also can affect what work people do. For example, large-scale farming is an option in plains areas, but not in mountain regions.

**Agriculture.** To a large extent, climate dictates what crops can or can't be successfully grown in an area. Using technology, such as artificial irrigation or greenhouses, can change the impact of weather and climate to a degree. However, agriculture is most successful when crops are naturally suited to the area in which they are grown.

**Transportation.** An area's climate and topography can dictate which forms of transportation are used there. For example, dogsleds are an obvious choice in arctic areas, while camels or elephants are well suited to travel in hot, arid conditions. More roads and railroads will be built in areas that have a level terrain, as opposed to mountainous areas.

**Economy.** Some areas, such as deserts, have little or no natural resources. These areas have a climate or topography that doesn't allow for extensive agriculture or a developed transportation system. Such harsh regions will most likely be poorer than areas that can support industry, large-scale agriculture, or other means of making a living and engaging in trade.

## **The Land of North America and Its People**

Climate and topography can affect many parts of people's lives, among them, housing. In a hot climate, for instance, houses tend to be open and airy. In a cold climate, thick walls and small windows help hold in the heat. And, historically, topography mattered because people had to use the raw materials at hand to build their shelters.

For example, the Inuit (Eskimos) of northern Canada once constructed their winter homes out of carved blocks of snow. In the dry areas of the continents—the American Southwest and Mexico, for instance—homes were built of adobe, which consists of sun-dried clay bricks. European settlers in what is now the eastern United States built log cabins from the timber readily available in that region’s extensive forests. Woodland Indians, too, utilized the forests. One common style of home consisted of a pole frame covered with bark. When the settlers first moved west to the prairies, they left the forests—and their log homes—behind. Now they built shelters, called “soddies,” using blocks of the thick grassy earth of the prairie. The Prairie Indians also had different styles of shelter from the Woodland tribes. For example, they used buffalo hides rather than scarce bark to cover pole-framed dwellings.

Of course, technology has provided insulation, heating systems, and air conditioning to make climate less of a factor in designing many modern-day homes. And, extensive transportation systems allow people to build homes out of almost anything they choose, regardless of what raw materials are available where they live. However, even today, particularly in less-developed areas of the world, climate and topography still have a direct effect on the kinds of homes people build.

## **The Land of North America and the Economy**

The land of North America is rich in timber and mineral resources. Much of the land is fertile, which is why North America ranks third, after Asia and Europe, in total agricultural production. Canada and the United States, combined, export more food than any other region in the world.

► *Right: Coffee is a major crop of Mexico and Central America. Since coffee plants grow in the tropics, they are not cultivated in Canada and the United States.*

### **Crops**

Look at the land use map on the opposite page, and compare it to the physical map on page 10. You will see that the majority of North America’s cropland is concentrated in the Interior Plains, particularly



# Land Use





▲ *Above: Most bananas grown in Central America and the Caribbean are exported.*

the central United States. Wheat is a major crop in the western Plains region—from Canada in the north to Mexico in the south. Corn is the primary crop throughout the midwestern United States, and it is the staple crop in Mexico and Central America. Other important Mexican crops include beans, wheat, and coffee.

In the mid-Atlantic region of the United States, you'll find tobacco. Peanuts are an important Georgia product, and cotton is grown throughout the southern United States. Potatoes are a major crop in Idaho as well as in the Atlantic provinces of Canada.

Citrus fruits are grown in Florida and in California, where there are also enormous vegetable farms. If you look at the land use map, you'll notice that grapes are cultivated just north of San Francisco, California. These grapes are used to make many fine wines, including some that are world-famous. Apples and other fruit, such as pears, are grown in the Pacific Northwest of the United States.

In Central America and the Caribbean, crops for export—such as bananas, coffee, and sugar cane—are grown on large plantations that employ many people.

### ***Livestock***

Cattle, sheep, and hogs are the major income-producing livestock raised in North America. Huge beef cattle and sheep ranches are located in the western plains of the United States. The northern part of Mexico's central plateau is another place you'll find beef cattle and sheep.



In the Midwest, hogs are an important commodity, as are dairy cattle, which are also raised in the New England states. Poultry is another important North American livestock. It is raised in the mid-Atlantic and south-central United States.

### **Timber**

The huge forests that stretch across British Columbia in western Canada and the Pacific Northwest in the United States supply lumber for the building industry and wood pulp for manufacturing paper.

### **Mineral Resources**

As you can see from the mineral resources map on page 24, North America contains a variety of minerals, distributed throughout the continent in a roughly Y-shaped pattern. These include petroleum and coal, which are discussed under the heading Energy Production and Consumption on page 25.

North America produces about two fifths of the world's silver, most of which comes from the central part of Mexico. Other major deposits are found in Arizona and Idaho. Nickel is another important mineral product. Approximately a third of the world's supply of nickel comes from North America. The major deposits are in Canada—especially in the province of Ontario—and in Cuba. Ontario is also a major supplier of uranium.

About one fourth of the world's copper comes from mines in North America, the majority of them in Arizona.

▼ *Below: Although most of North America's oil comes from fields and basins near the Gulf of Mexico, this oil well is on Huntington Beach, in California.*



# Mineral Resources





Other major producers in the United States are Utah and New Mexico and in Canada, Ontario and British Columbia.

Zinc, another major mineral resource in North America, is found throughout the continent, but primarily in Canada and Mexico. Bauxite, the ore from which aluminum is made, is mined on the Caribbean island of Jamaica.

### ***Energy Production and Consumption***

Looking at the energy production map on page 26, you can see that gas and coal are the primary sources of energy produced in North America. Natural gas fields are found heavily clustered in an area around and south of the Great Lakes, and in a band slanting from the Gulf of Mexico northwest into Canada. Major coal fields are also located in these same general areas, as are oil fields and basins. Additional supplies of oil, or petroleum (they mean the same thing), come from the Canadian province of Alberta; Alaska and Texas, in the United States; southern Mexico; and the island of Cuba. A fourth major source of energy production in North America is nuclear power, which is used to generate electricity. Nuclear plants are located primarily in the eastern, southern, and midwestern regions of the United States.

Although North America produces a lot of energy, it consumes even more. As you can see from the map on page 28, the heaviest area of consumption includes all of Canada and the United States. Industry, transportation, and heating account for a major portion of this use. To see how North America compares to the rest of the world in energy production and consumption, see the maps on page 27.

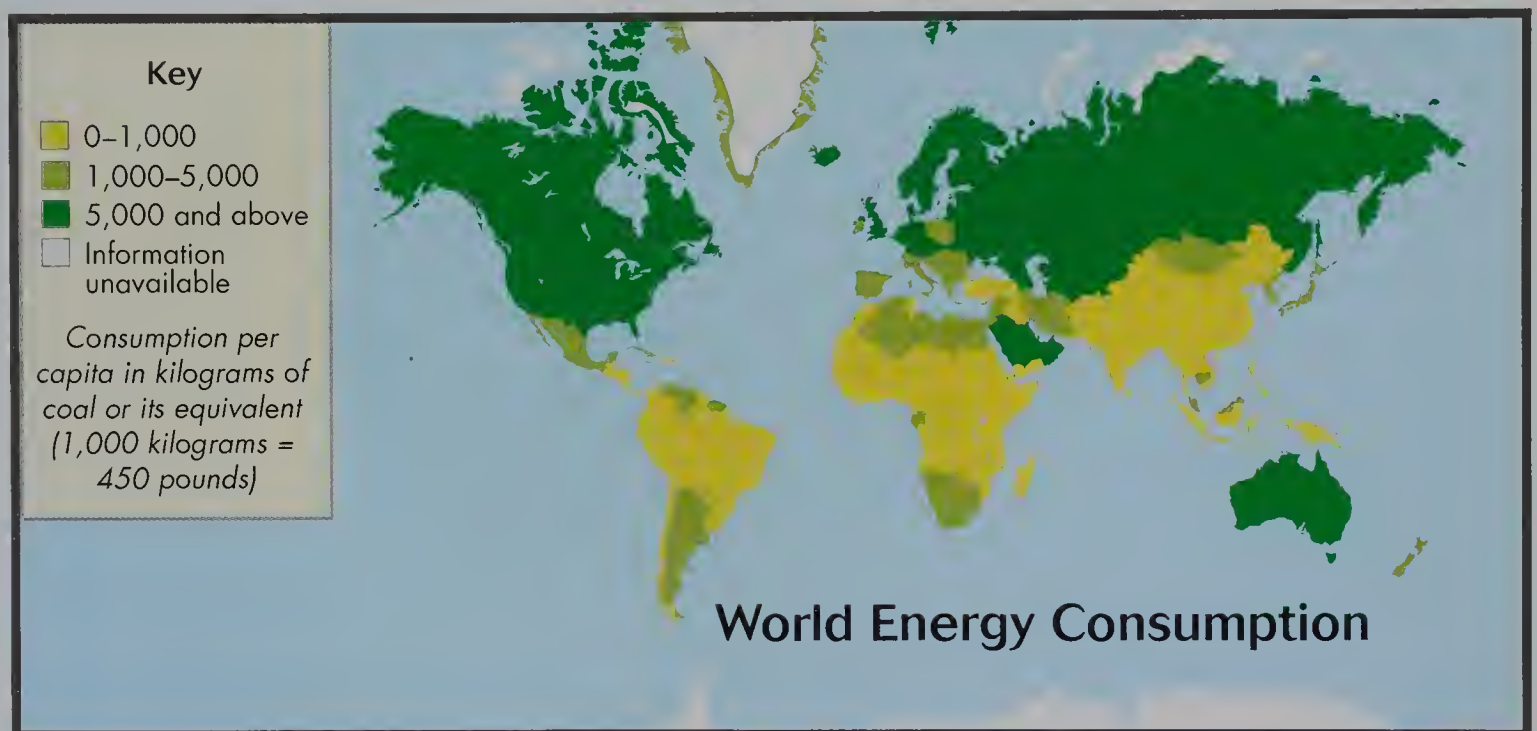
Finally, take a look at the map on page 29. Here you can see how North America is affected by the burning of coal and oil, and compare it to other areas of the world. Harmful emissions from the burning of fossil fuels contribute to environmental problems such as global warming, destruction of the ozone layer, and acid rain.

◀◀ **Opposite:** North America is rich in minerals, which are scattered around the central and southern regions of the continent.

# Energy Production







## The Environment

A look at the environmental damage map on page 30 will tell you that one of the biggest problems in North America is acid rain. The gases in the atmosphere that produce acid rain come mainly from burning coal, oil, and gas for fuel or in factories. The acid rain region shown on the map includes the northeastern United States and Ontario, Canada. Both areas have, for a long time, been major manufacturing centers.

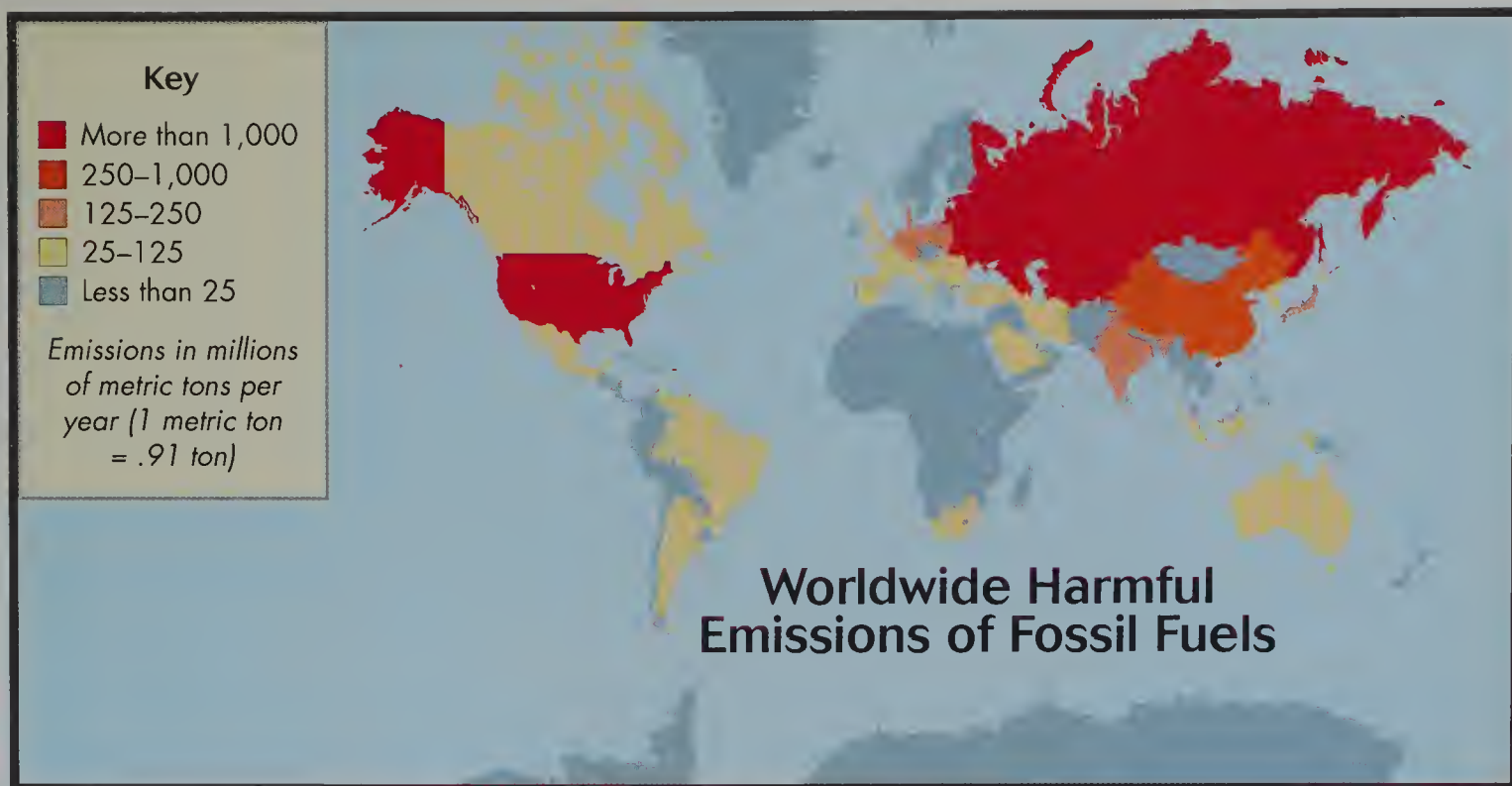
▲ *Above: Central America is a light producer and user of the world's energy supplies.*

◀◀ *Opposite: Most of North America's coal deposits are in the United States.*

# Energy Consumption







Some urban areas in North America that contribute to acid rain also have polluted air, or smog, shown as black dots on the map. In some cities, this is mainly because there is a lot of industry in or near the city. Other cities do not have much industrial pollution, but they have so many residents with cars that automobile exhaust pollutes the air. For example, a lot of people with cars moved to Denver to enjoy the city's once-fresh mountain air. Now smog is a problem.

Coastal pollution is another North American environmental problem that is caused by a variety of factors. Factory waste, large numbers of tourists, and—especially on the inland waterway of the Great Lakes—shipping are responsible for much of this pollution. If you compare the energy production map on page 26 with the environmental damage map you will see that oil and gas production also contribute to the problem of coastal pollution, particularly around the Gulf of Mexico.

The points of human-induced salinization show areas where too much irrigation is damaging the land. There, intensive irrigation is washing the nutrients from the soil, leaving it salinized, or encrusted with salts. Salinization is a problem in the western United States and northwestern Mexico.

▲ *Above: The United States is a major producer of harmful fossil fuels.*

◀◀ *Opposite: It appears that a great deal of energy is consumed in northern Canada. Although it takes a lot of fuel to keep one person warm, very few people (or industries) are there. So the total amount of energy consumed is not great.*

# Environmental Damage







◀ *Left: Heavy urban traffic pollutes the city's air.*

◀◀ *Opposite: The east coast of North America and the Great Lakes suffer from coastal pollution.*

Desertification can result from either intensive grazing by livestock or overcultivation of the land to increase agricultural production. Intensive farming methods, including the increased use of chemicals, deplete the soil.

Finally, as in other parts of the world that contain rain forests, deforestation is a problem in North America. Lumbering and clearing land for agriculture have destroyed large sections of the rain forest in southeastern Mexico, Central America, and a number of Caribbean islands. Lumbering also takes place in the forests of Canada and the Pacific Northwest of the United States. In these areas, however, planned cutting and replanting efforts help conserve the forests.

### A Closer Look

You can learn a lot about what a place is like by looking at different kinds of maps, one at a time. However, by comparing the information presented in two or more maps, you can discover something about how and why it got that way.

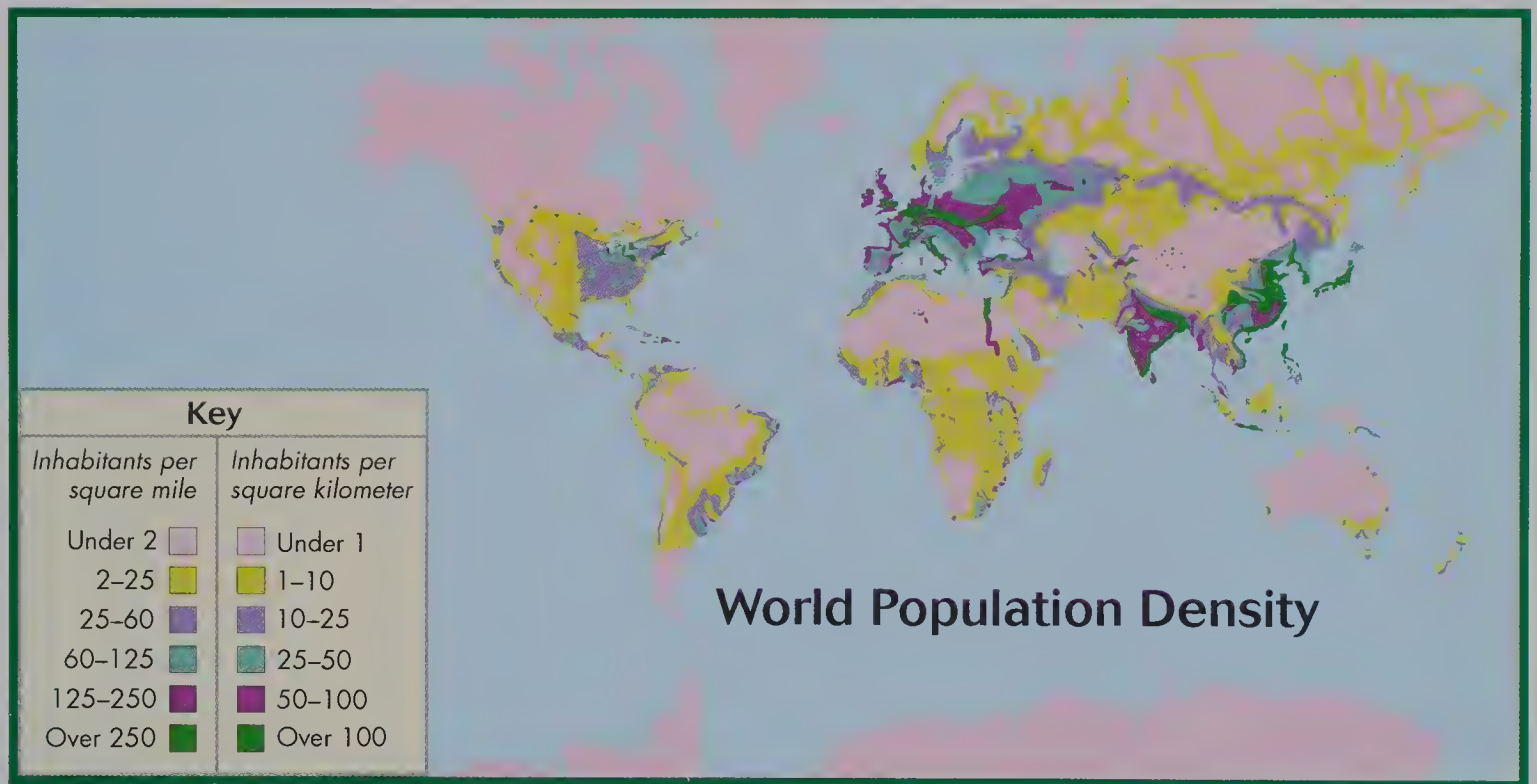
Compare the physical map of North America on page 10 and the climate map on page 15 with the land use map on page 21. How do the physical map and the climate map help explain the way land is used?

# Political Map





# Mapping People, Cultures, and the Political World



Maps can reveal much more about a place than simply what it is like physically. They can also tell you a great deal about the political divisions of the area. Maps can inform you about the cultures and customs of the people who live there as well. They can show the languages spoken in a region, the religions people identify with, and the places where most people live.

▲ *Above: Like northern Asia, northern Canada has vast stretches of land with few or no inhabitants.*

◀◀ *Opposite: By the mid 1800s, the countries of North America had nearly all of their current political boundaries.*

## **The Political World: Dividing the Land**

Political maps such as the one on page 32 are familiar to everyone. In these, there is no attempt to show what an area physically looks like. Rather, a political map shows the boundaries that separate countries (or states and provinces). Colors are used to distinguish one country from another. A political map may also show capitals and major cities, as the map on the opposite page does.

Boundaries are artificial; that is, they are created, set, and changed by people. Conquests, wars, and treaties have all caused boundary changes. Political maps can, therefore, also be a guide to the history of a region.

Geographers keep track of boundary changes, and country and city name changes, as they occur, so that new, up-to-date political maps can be created as soon as possible.

### ***Nature's Influence***

The political world is not entirely separate from the natural world. Rivers or mountains may dictate where boundaries are set. Also, if there is a wealth of natural resources in one location, people may try to set boundaries that put all or most of those resources within their own country's borders. Cities, too, are often located according to natural features. Comparing climate and major city maps will show that cities tend to cluster along coastlines or major waterways, and in areas that have less severe climates.

## **North America's History and Political Divisions**

Long after Europeans conquered and settled other parts of the world, North America remained unknown to anyone other than the natives who lived there.

### ***Native Americans***

Great Native American civilizations existed in North America before the time of European exploration. In what was to become the United

▶▶ *Opposite: The oldest cities in the United States are on the east coast, the first region in the country settled by Europeans.*



# Capitals and Major Cities



States and Canada, many Native American tribes settled the region long before the Europeans arrived. Several cultures, such as the Mississippian, established great settlements.

In Central America, the Maya Indians ruled from about 400 B.C. to A.D. 900. The last and greatest Mexican empire belonged to the Aztec Indians, who ruled all of south-central Mexico from around 1325 to 1521. The capital of this territory was Tenochtitlan, located on an island in Lake Taxcoco—the future site of Mexico City.

Native Americans all made maps of one sort or another. Most of them concentrated on their own local area, rather than an entire country. European explorers later relied on these Native American maps to add to their own knowledge of the New World.

### ***Columbus and the New World***

In 1492, Christopher Columbus, an Italian explorer sailing for Spain, set out to find a trade route to Asian lands, rich in spices and other goods, by traveling west. The regular, eastward trade route between Europe and Asia was long and complicated. Columbus looked at maps prepared by the famous mapmaker Ptolemy and decided that it would be a simple matter to sail west and meet up with the coast of Asia.

Unfortunately, Ptolemy didn't know that the Americas existed. On his maps, there was no land between Europe and Asia. The shores of the two continents looked to be close together. Columbus set sail across the Atlantic, expecting that the next land he would hit would belong to the known Eastern world. He was wrong.

Columbus found land, but it was the island of San Salvador, in the Bahamas. Although Columbus didn't realize that he had discovered an unknown world, an Italian sailor did. Amerigo Vespucci, who sailed for Spain in Columbus's footsteps, claimed that he and Columbus had found a "New World." Later, a German mapmaker was the first to name the new lands (both the north and south continents) "America," after Vespucci.





◀ *Left: Christopher Columbus landed in the New World on October 12, 1492.*

## ***Colonization and Independence in Central America and Mexico***

Spanish *conquistadors*, or conquerors, overran Central America between 1502 and 1525, subduing the native population. By 1570, they had established an administrative center in Guatemala called the Audencia of Guatemala, which ruled most of Central America.

Since the region had less minerals than Mexico, Spain largely ignored it. In 1821, the Audencia of Guatemala declared itself independent. By the late 1830s, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua declared themselves separate and independent republics. In 1903, Panama—a province of Colombia, South America—became an independent nation. The new republic granted the United States a narrow strip of land to build the Panama Canal. It will finally revert to Panamanian control at the end of 1999.

The gold, silver, and other riches of the Aztecs in Mexico made the region much more tempting to Spanish explorers than Central America. Beginning in 1519, Hernando Cortés waged war on the Aztec Empire. Within two years he had totally destroyed the Aztec civilization, bringing Mexico under Spanish rule. This lasted until 1821, when Mexicans gained independence. In 1824, the Republic of Mexico was established. It took up all of present-day Mexico and extended into the western and southwestern United States, including Texas.

### ***The French and the English Settle Canada***

While Spain explored and colonized the southern regions of North America, France and England ventured into the northern ones. In 1497, John Cabot, an Italian navigator serving England, discovered the rich fishing grounds off Canada's southeast coast. He was followed, in 1534, by Jacques Cartier, who sailed into the Gulf of St. Lawrence and claimed the area for France.

From the mid to late 1500s, France pursued a valuable fur trade with Native Americans in the region. This eventually led to the establishment of a New World empire the French called New France. By 1682, the empire stretched south from the Labrador Sea, through the Great Lakes region, to the Gulf of Mexico and west from Montreal to Saskatchewan. It took in the entire Mississippi and Missouri river valleys—most of the center of what was to become the United States. This central area was called Louisiana. North of the Great Lakes, the empire was divided into Canada and Acadia (present-day Nova Scotia).

During this time, the British laid claim to the area around Hudson Bay—which the French also claimed—and started their own fur-trading business, the Hudson Bay Company. The Newfoundland area was claimed by both countries as well.

Conflicts between Britain and France led to a series of wars between the two countries that took place from 1689 to 1763. By 1763, Britain gained control of most of New France. This included the Louisiana region east of the Mississippi and south almost to the Gulf of Mexico. The British named their new Canadian territory Quebec.

### ***British Canada Expands Westward***

The end of America's Revolutionary War in 1783 affected Britain's fur trade and prompted the western expansion of Canada. After the war, Britain had to give America most of the land between the Allegheny Mountains and the Mississippi River. This area had been Britain's main source of furs. In an effort to find new sources, explorers moved



west, mapping the regions that were to become British Columbia, and the Yukon and Northwest Territories.

In 1867, the Dominion of Canada was formed and the boundaries of today's Canadian map face began to take shape. The Dominion included four provinces: New Brunswick, Nova Scotia, Ontario (formerly Upper Canada), and Quebec (formerly Lower Canada).

It was not until 1949, however, that Canada's provinces and territories took on the boundaries you see on the political map on page 32. In that year, Newfoundland became a province, and the Northwest Territories was reduced in size. On April 1, 1999, the boundaries of the Northwest Territories will change again. The larger, eastern section will be turned over to the Inuit people. It will be called *Nunavut*, which means "our land" in the Inuit language.

### ***From European Colonies to the United States***

At various times in its history, portions of what is now the United States have been claimed by England, France, Spain, and Mexico. The first permanent European settlement in what is now the United States was St. Augustine, Florida, which was founded by the Spanish in 1565.

The first permanent British settlement in North America was Jamestown, which was founded in 1607 and grew into the colony of Virginia. Other colonies followed until by 1733 there were 13: Virginia, Massachusetts, New Hampshire, New York, Connecticut, Maryland, Rhode Island, Delaware, Pennsylvania, North Carolina, New Jersey, South Carolina, and Georgia.

The Revolutionary War, which lasted from 1775 to 1783, ended British rule of the 13 original colonies and established the United States of America. In addition to gaining its independence, the United States also gained the British territory east of the Mississippi River.

During the 1600s and 1700s, European cartographers paid close attention to the establishment of European settlements in North America and the shifting dominance of these lands. They wanted to

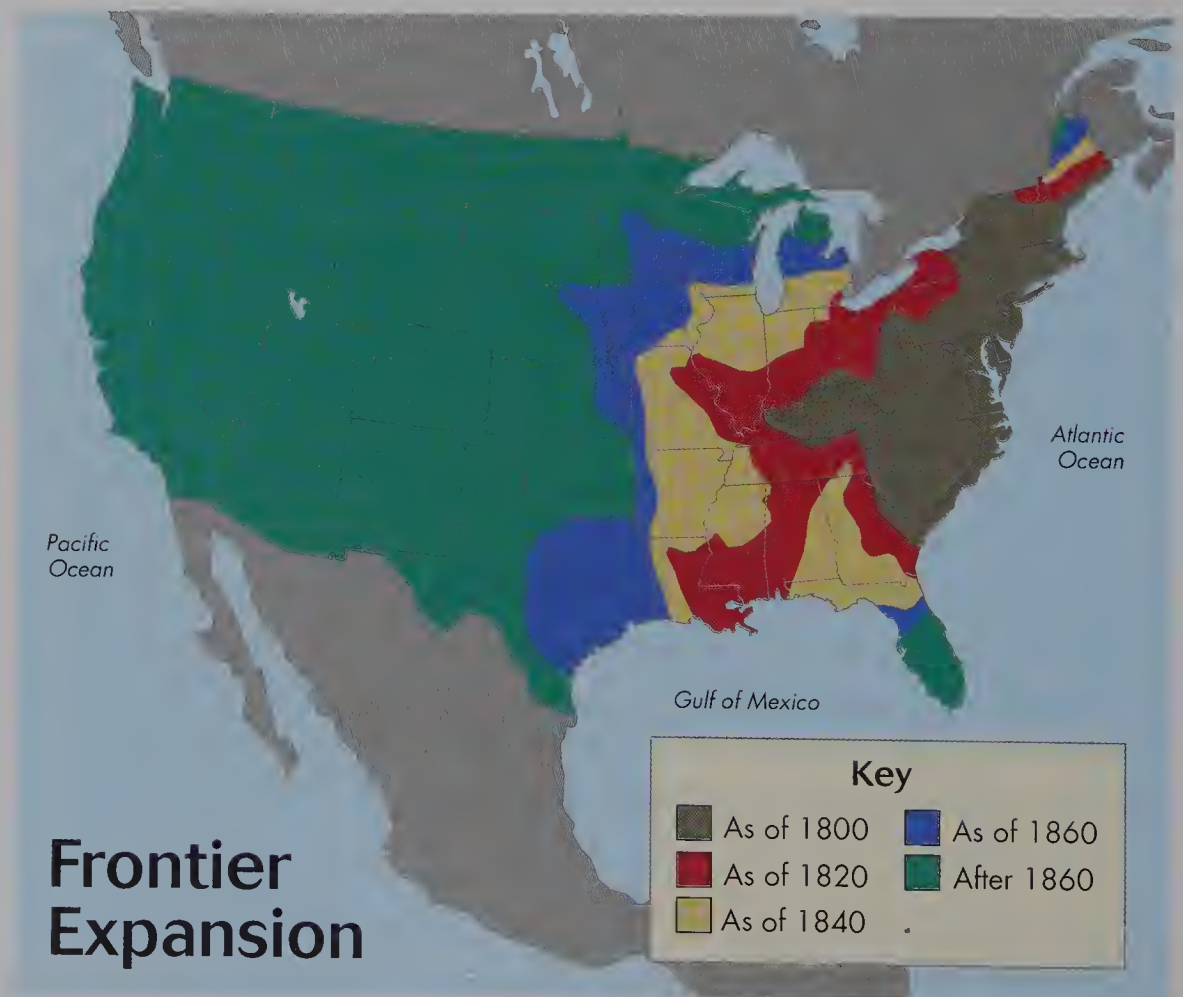
be sure that their countries' claims were properly recorded on their maps. During wartime, maps of battles were popular, but by the time a map was made and distributed, the country marked as the winner of a battle sometimes had become the loser!

### ***Louisiana Purchase***

The next boundary shift for the United States was a large one. In 1803, the new republic purchased the Louisiana Territory from France, nearly doubling the size of the United States. Some of this land had never been explored by a non-native. A British map published in 1804 showed a lot of detail east of the Mississippi River, but the vast area from there to the Pacific lay blank. The Lewis and Clark expedition changed that for all time.

Americans Meriwether Lewis and William Clark left St. Louis, Missouri, in 1804 and traveled through northern Louisiana to Oregon Country. There they followed the Columbia River to the Pacific

► *Right: As you can see from this map, the boundaries of the western frontier were irregular.*





Ocean. The detailed maps and journals they brought back provided a clear and useful picture of the country for future travelers.

### ***From Sea to Shining Sea***

In the first half of the nineteenth century, the United States gained the rest of its mainland territory. In 1819, Florida was purchased from Spain. Texas was annexed in 1845. And in 1848, after the Mexican War, which was fought between the United States and Mexico, the United States gained most of the remaining western and southwestern lands. By 1853, the United States claimed all the land between Canada and Mexico, from coast to coast.

### ***Westward Ho!***

As the United States added territory, settlers moved west too, expanding the frontier of their new country. If you look at the map on page 42, you will see that the frontier's boundaries were irregular. In some areas, the land wasn't suitable for farming, and it was passed over. Settlers also "hopscotched" to regions that had valuable resources, such as coal.

### ***Indian Relocation***

As the settlers moved away from the Atlantic coast and headed west, they took over more and more of the Native Americans' land. In 1830, Congress passed the Indian Removal Act. This act declared that the government had the right to move all Native Americans out of the eastern half of the United States. An area that was to become Oklahoma was set aside as Indian Territory. Throughout the mid to late 1830s, Indians were forced into a long march from their homelands in the east to the new territory. Many Indians died on the way. The Cherokee called this route the Trail of Tears, and a portion of it is shown on the map on page 42. The map also shows the location of some of the larger Indian reservations that exist today. These are areas that have been set aside solely for Native Americans. About 75 percent



## Trail of Tears

▲ Above: The Trail of Tears began in Chattanooga, Tennessee, and ended at Fort Gibson, Oklahoma. The red dots on the map indicate large Indian reservations.

of the Native Americans in the United States choose to live outside the reservations, however.

### ***The Civil War***

For four years, from 1861 to 1865, the United States was divided into the North and the South. America had become two countries: the United States of America and the Confederate States of America. The Civil War was fought for a number reasons, but slavery was the key issue. The Confederacy—the South—supported slavery. Eleven states made up the Confederacy: Virginia, Arkansas, Tennessee, North Carolina, South Carolina, Florida, Georgia, Alabama, Mississippi, Louisiana, and Texas. When the Civil War ended, the Confederacy had lost. The nation was once again a single country.

### ***The United States Today***

In 1912, New Mexico and Arizona were the last mainland states to be admitted to the Union—numbers 47 and 48. The United States had purchased Alaska from the Russians in 1867, but the territory did not become a state until 1959. That same year, Hawaii became the fiftieth state.

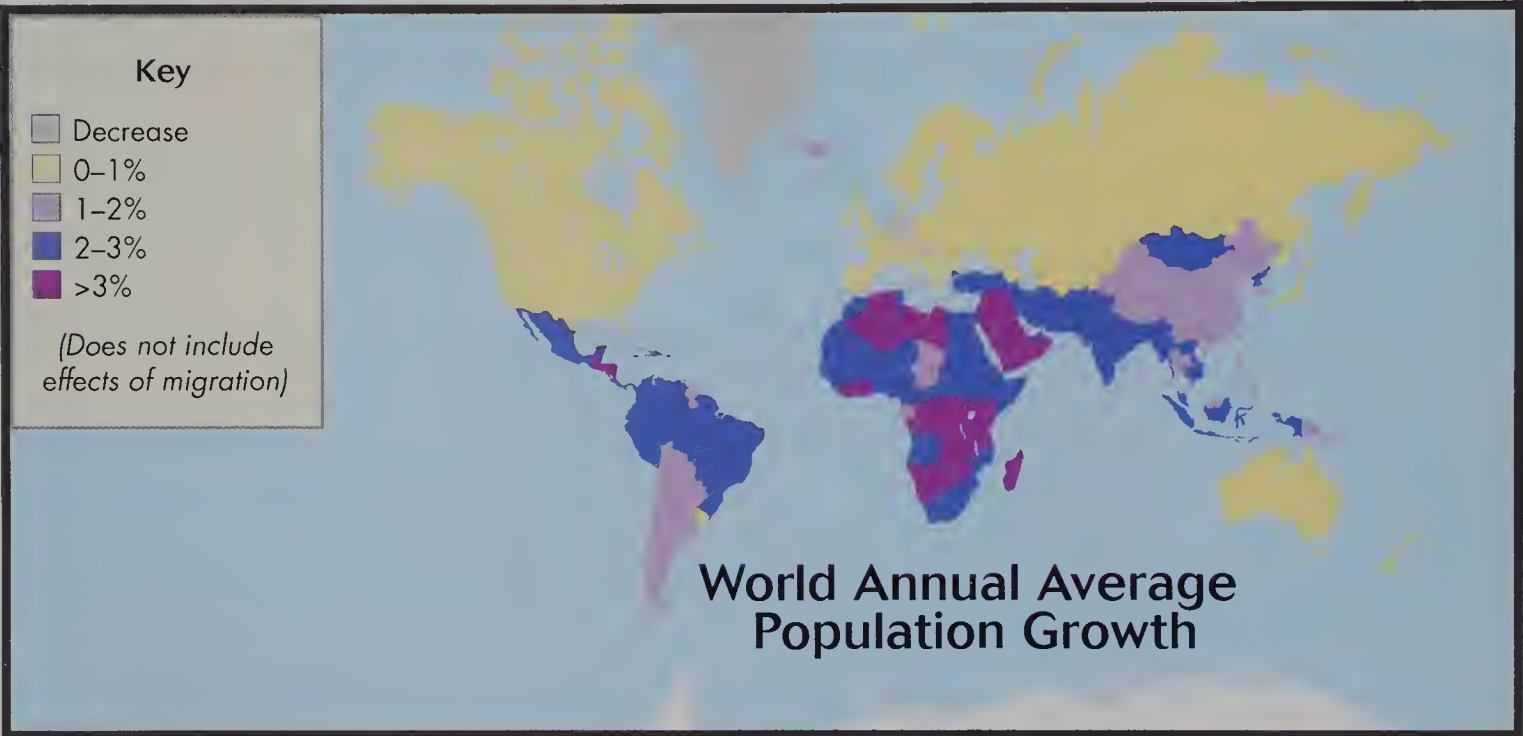


# Population, Language, and Religion

Political maps tell us about the boundaries of a nation, but not about the lives of its inhabitants. Maps that focus on population, language, and religion tell us more about a country's people. Most countries' governments conduct a census (population count) on some sort of regular basis. The United States, for example, has conducted a regular ten-year census since 1790.

▼ *Below top:* Most populations with slow growth rates are in the Northern Hemisphere.

▼ *Below bottom:* Many more language families are represented in Asia than in North America.





▲ *Above: Most people in North America and Europe belong to Protestant or Catholic faiths.*

Census figures are used to make maps that show how population is distributed. The world population density map on page 33 is one such map. By compiling statistics over a period of years—from census and birth and death records—geographers can make predictions regarding population growth, as shown in the map on page 43.

Because many different languages may be spoken in any one country, it is difficult to map language distribution precisely. However, large areas that represent language families can be mapped, as shown in the map on page 43. In the same way, predominant religions of an area can also be mapped, as shown in the world religions map above.

## The Religions of North America

As you can see from the map on the opposite page, Christian religions are dominant in North America. The southern part of the continent—Mexico, Central America, and the Caribbean—are Roman Catholic. This reflects the influence of the early Spanish explorers and settlers in these areas. There is a second concentration of Roman



Catholics in eastern Canada and the Northeast and Great Lakes regions of the United States. This reflects the ethnic background of the people in these regions: the Canadians' ancestors are predominantly French; the Americans have mostly Italian and Eastern European ancestors.

Most of the rest of the United States, as well as southern and western Canada, is either largely Protestant or else "mixed Christian," which means that the people of that region worship in one of a variety of Christian faiths. Utah, which is predominantly Mormon, is the exception.

Alaska and the vast northern reaches of Canada are populated primarily by Native Americans and Inuit, who often practice indigenous, or native, religions.

## Religions



◀ *Left: While Protestant religions are dominant in the United States and parts of Canada, Roman Catholicism is the chosen faith of most Mexicans and Central Americans.*



## The Languages of North America

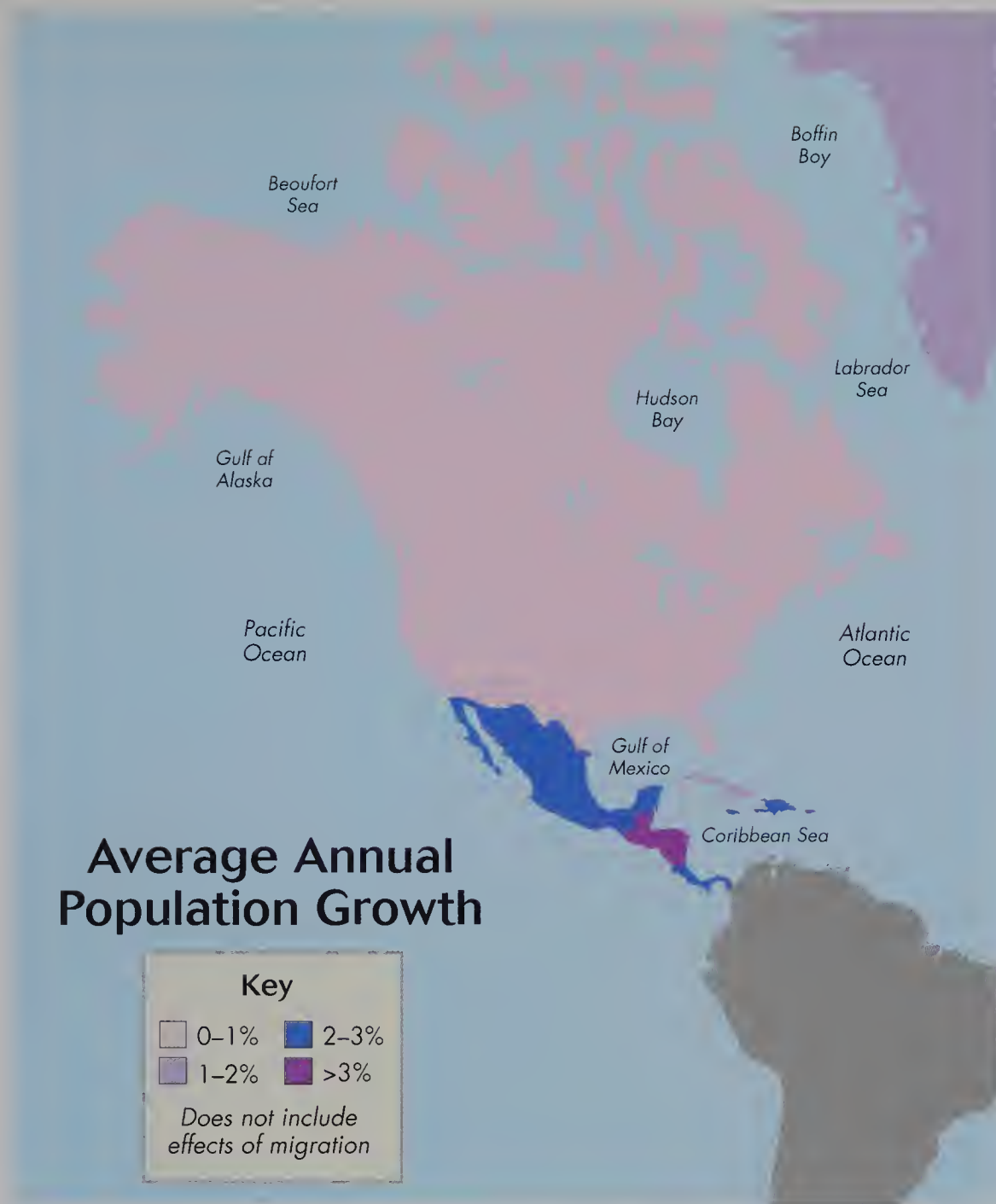
As the languages map below shows, most North Americans speak Indo-European languages. While these include many different ethnic languages, the primary languages spoken in North America are English, Spanish, and French. English is spoken in the United States and most of Canada; Spanish in Mexico, Central America, and the Caribbean; and French is the official language of the Canadian province of Quebec. American Indian and Inuit languages are spoken in much of the northern part of the continent.

▲ *Above: This stop sign is written in two languages—French and English—so that both the French- and English-speaking populations of Quebec will understand.*

► *Right: The primary languages spoken in North America—English, Spanish, and French—belong to the Indo-European family.*







◀ *Left: The populations of Mexico and Central America are growing at a much faster rate than those of the United States and Canada.*

## North American Population Growth and Density

In 1996, the estimated population of North America was approximately 458 million. The United States has the highest population of any country in North America, approximately 265 million. As a continent, North America ranks fourth in population after Asia, Africa, and Europe.

If you look at the population density map on page 48, you'll see that very few people live in the northern half of the continent. The heaviest concentrations of people are found in the New England and Great Lakes regions of the United States, as well as in south-central Mexico.

# Population Density

Arctic Ocean

Baffin Bay

Beaufort Sea

Labrador Sea

Hudson Bay

Gulf of Alaska

Pacific Ocean

Atlantic Ocean

Gulf of Mexico

Caribbean Sea

## Key

*Inhabitants per square mile*

Under 2

2-25

25-60

60-125

125-250

Over 250

*Inhabitants per square kilometer*

Under 1

1-10

10-25

25-50

50-100

Over 100



As the population growth map on page 47 shows, Mexico is one of the fastest-growing countries on the continent. This growth is due to its high birth rate and recently reduced death rate. The country's population was 81,249,645 in 1990. In 2001, it is expected to be 104,145,000—a 25 percent increase.

### ***Per Capita GDP***

Gross Domestic Product (GDP) is the total output of a country—all products and labor. Dividing the value of a country's GDP by its population gives the per capita (per person) GDP. This figure represents the average annual income of that country's people. Generally speaking, more industrialized countries have a higher GDP—and a better economy—than less industrialized countries.

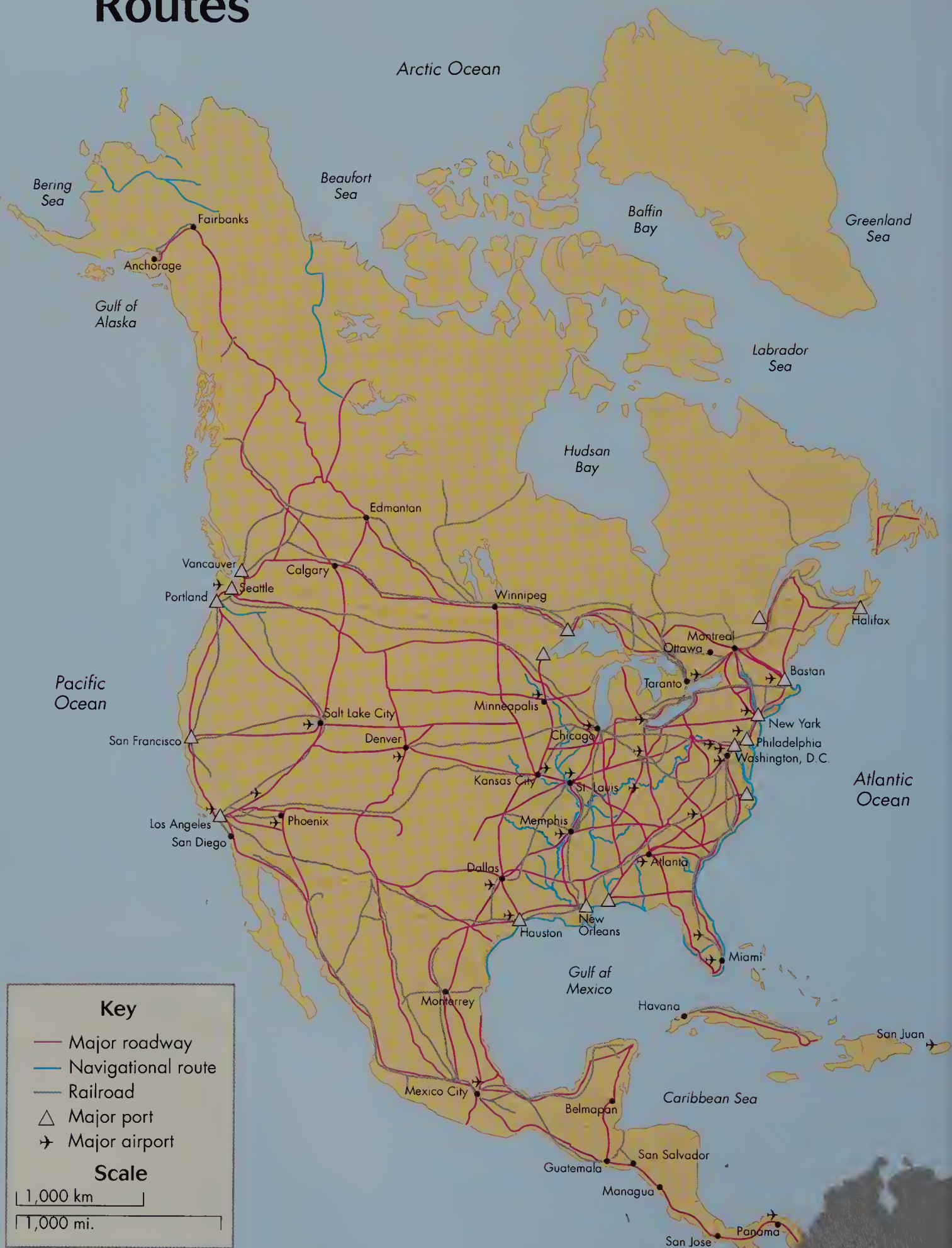
For example, the United States, the most industrialized country in North America, had a 1995 per capita GDP of \$27,541. Contrast this with Mexico, which has only recently begun developing a range of industry, and which has only three industrial centers. Mexico's estimated 1994 per capita GDP was \$7,900.

◀◀ **Opposite:** By looking at this map, you can see why the western United States is known for its wide open spaces. There are far fewer people, and therefore buildings, than in the eastern half of the country.

### **A Closer Look**

Look at the political map of North America on page 32 and the physical map on page 10. You have read about the setting of the boundaries between Canada and the United States and between the United States and Mexico. Part of the borders follow natural geographic features. Find three states in different parts of the United States whose boundaries follow natural features.

# Transportation Routes





# Mapping the World Through Which We Move

In addition to showing us the physical and political characteristics of the world, maps can also have a more practical, “hands on” purpose: They can assist us in moving through our world. Whether that world is an entire continent, a single city, or the second floor of an art museum, different maps provide us with the information we need to get from one point to another.

## Maps Show the Way

Whenever we want to get from one place to another, maps can help us plan our routes by showing the options that are available. Maps show where roads are located and what kind of roads they are. They can also tell us whether we can take an airplane, train, bus, or other form of transportation to get there. Once we reach our destination, maps again can help us plan how best to get around—on foot, by car, or by some kind of public transportation.

## Creating Road and City Maps

To create road maps and city maps, mapmakers (cartographers) look first for base data maps that accurately position points to be included on the new map. These base maps might be acquired from the federal

◀◀ *Opposite: The roads of North America are dense where the continent’s population is dense, for example, in the eastern half of the United States.*

government, states, or cities. Aerial photographs may be taken to show if, and how, any areas may have changed since the base map was made.

Then, cartographers contact agencies that can provide specific information about street names—the names that will be the most help to a person traveling in the area. Other agencies are contacted to determine which buildings or other points of interest are important and should be included on the map of the area. Field work—actually visiting the area being mapped—adds useful first-hand information.

Scale also plays an important part in determining what is shown on a map. The smaller the scale, the more carefully cartographers must pick and choose the details that are being included. Careful selection is needed in order to keep a map from becoming too cluttered.

## **Transportation in North America**

A look at the map on page 50 shows a network of major roads and rail lines extending into most parts of the continent. Compare this map to the population density map on page 48. It is easy to see that in general, the density of the transportation routes mirrors the density of the population.

### ***Roads***

The United States and southern Canada have the best-developed road systems in North America. Major highways link important cities within and between each country, as you can see by comparing the transportation routes map with the major cities map on page 35. Major roadways also link the east coast to the west coast in both countries and, in the United States, connect north to south. A dense network of secondary roads fills in the areas between the major highways, especially in urban areas. In northern Canada, where settlements are few and far between, there are very few roads, and many of them are unpaved.

Unpaved roads are also common in the rural areas of Mexico and Central America. Mexico's main highways are modern and connect the major cities and towns. The road system is most dense in south-



central Mexico and around Mexico City—again, mirroring the population distribution. In southern Mexico and Central America the major roadways hug the coastline. This is because the interior of that region consists of rugged mountains and dense forests.

### ***Railroads***

The majority of the rail lines in North America are now used mainly to carry freight. Railroads run between major cities, and from manufacturing and harvesting centers to distribution points. In some urban areas, such as Chicago and New York, people use trains to commute from their homes in the suburbs to work in the city.

### ***Waterways***

The principal waterways of North America are in the eastern half of the United States. The Mississippi River system, the Ohio River, the St. Lawrence Seaway (a waterway of locks and dams developed by the United States and Canada), and the Great Lakes make up one of the world's greatest inland waterways. Ships carry freight between manufacturing, mining, or collection points throughout the system, linking Canadian and U.S. ports with each other and with foreign ports.

Look again at the transportation routes map. It shows one navigational route running along the Atlantic coast of the United States and another running along the northern Gulf coast. These two routes are the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway. Canals connect these routes with nearby lakes and rivers, offering convenient shipping access from the interior to coastal ports.

### ***Airlines***

All of the big cities of North America can be reached by air, and many of the smaller ones as well. Domestic air service is used extensively in North America both for business and pleasure travel. In some areas, such as northern Canada, airplanes provide the only way of reaching a destination.

► *Right: The lights of Baltimore Washington International Airport glow against the night sky.*



Major airports, such as those indicated on the transportation map, offer international as well as domestic flights. As you can see from the map, the majority of these airports are located in the United States. And, in fact, some are the busiest in the world.

### ***Other Transportation***

Buses are an especially common form of transportation throughout all of Mexico. Cars, buses, and taxis provide transportation in North American cities. In addition, some cities—such as New York, Mexico City, and Chicago—have subway and elevated train systems. San Francisco, California, is famous for its cable cars, which are pulled by moving overhead cables on some of the city's hilliest streets. Ferries provide transportation between islands and the mainland in areas such as the city of Vancouver on Canada's west coast, and the Maritime Provinces in the east.

In the arctic regions of Canada, dogsleds and snowmobiles provide swift transportation during the long winters. Many people in the rural areas of Mexico and Central America travel from place to place on foot.

### **The Cities of North America**

Take a look at the capitals and major cities map on page 35. You will notice that nearly all of the cities are located on the coast or on a river. This can be explained in several ways.



The first explorers and settlers arrived by sea. It was natural that they would establish bases—forts or towns—close to their landing points, rather than pushing farther inland. These locations were easiest to reach, of course, but, equally important, they were easy to defend. Many of these settlements, particularly in Canada, the United States, and the Caribbean, then gained importance because of their ports. They became trading centers—hubs of activity on the valuable North American–European trade routes.

## Toronto

The largest city in Canada, Toronto was called York when the British chose the site to be the capital of present-day Ontario. Toronto is the major port city on Lake Ontario. The most prominent landmark, located near the harbor, is CN (Canadian National) Tower—the world's tallest free-standing structure. Outside elevators take sightseers up to the 1,815-foot (553-meter) observation deck. Next to CN Tower is the SkyDome, where Toronto's baseball, basketball, and Canadian Football League teams play. The city's hockey team plays in Maple Leaf Gardens. And, since ice hockey originated in Canada, it's no wonder that the Hockey Hall of Fame is located in Toronto as well!

▼ *Below: Toronto's water-side location on Lake Ontario and its many parks make it a very attractive city.*





▲ *Above: The CN Tower is the world's tallest free-standing structure.*

▶▶ *Opposite, bottom: The Paseo de la Reforma, running diagonally through Mexico City, is a wide boulevard that was inspired by the Champs-Élysées in Paris.*

Toronto is a city of parks—there are more than 100, and several are marked on the map on page 55. Toronto Islands Park, to the south of the harbor, is the city's largest park. The Parliament Buildings, to the north, are in Queen's Park. Now look to the south. The Art Gallery houses Canada's second-largest collection of Canadian paintings. Nearby is the very modern-looking City Hall—an interesting contrast to the Romanesque style of the Parliament Buildings, which were built in the 1800s.

### ***Mexico City***

Turning to the map of Mexico City on the opposite page, you'll immediately notice the main street running through the city at an angle from northeast to southwest. This wide boulevard, the Paseo de la Reforma, was built by the Spanish emperor Maximilian in 1865. He modeled it

after the famous Champs-Élysées in Paris. Spaced along the street are a number of roundabouts—major intersections—each with a statue commemorating an important person or persons. The one with a monument to Christopher Columbus (Cristobal Colón in Spanish) has been marked on the map.

The yellow area, Alameda Park, was once filled with Indian markets, and, during the Spanish Inquisition, victims were burned at the stake there. To the west of the park is a museum housing a mural by Diego Rivera, one of Mexico's most famous painters. To the east of the park is the beautiful, white marble Palace of Fine Arts, where the country's famous Ballet Folklórico performs.

Cities and towns with a Spanish heritage share a common design trait—they are built around a public square that is surrounded by government and church buildings. Mexico City is no exception.



The heart of the downtown is Constitution Plaza, better known as the Zócalo. You can find it on the far right side of the map. This huge plaza, the largest in the Western Hemisphere, was built by the Spanish on the site of the Aztec's main religious and governmental center. On the east side of the square is the National Palace. The president's office is here, as well as several museums. On the south side is the City Hall, and on the north is the Metropolitan Cathedral. The cathedral dates back to 1573, and is the oldest and largest cathedral in Latin America. Just to the north you'll find the Great Temple of the Aztecs, an archaeological site and museum.



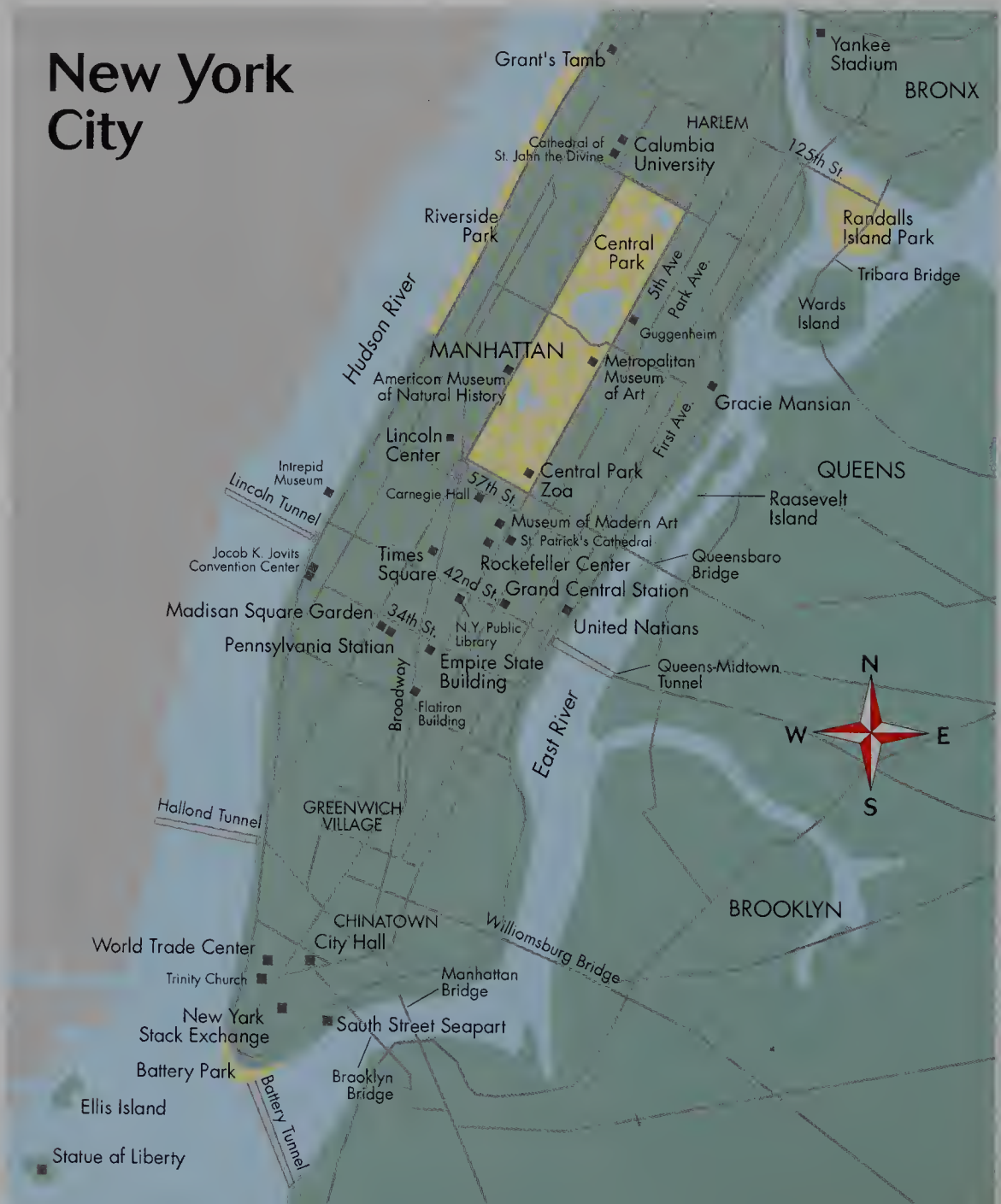
▲ Above: Tucked in among Mexico City's modern buildings are reminders of its ancient past.



## New York City

New York City includes five areas called boroughs: Manhattan, Brooklyn, the Bronx, Queens, and Staten Island. When people talk about New York City, however, they are usually referring specifically to Manhattan. This island, shown on the map below, is the original site of the city and the location of its most important landmarks. One of the most famous sights of New York is the Statue of Liberty, located on Liberty Island, in the southwest corner of the map. The statue has come to symbolize the freedom that the United States offers its citizens. To the northeast is Ellis Island, part of the Statue of Liberty National

► *Right: Many of New York City's landmarks—such as the Statue of Liberty and the United Nations—are world famous.*





Monument. The island was the official immigration center for the thousands of Europeans who came to the United States during the 1800s.

Near Ellis Island, at the southern end of Manhattan, lies New York's financial district, one of the world's most important. Within the district are the New York Stock Exchange and the World Trade Center, with its matching 110-story twin towers. South Street Seaport, in the same vicinity, is an area of restored historic ships, restaurants, and shops that celebrates New York's history as a major port city.

Moving north, you'll find the 102-story Empire State Building, one of the city's many architectural landmarks, and once the world's tallest building. Over by the East River stands the headquarters of the United Nations. West of the river is Madison Square Garden, where New York's basketball and hockey teams play. The Yankees baseball team plays at Yankee Stadium, in the Bronx.

New York is famous for its live theater performances. The center of the city's theater district is Times Square, at Broadway and Seventh Avenue. Northeast of Times Square you'll find Rockefeller Center, a huge business and entertainment complex. In the winter, the lower level of the plaza is turned into an ice skating rink.

Many of the country's most famous museums are located in New York City, including the American Museum of Natural History on the west side of Central Park and the Metropolitan Museum of Art, the largest art museum in the United States, on the east side. Central Park was the first major American park. This 843-acre haven of greenery in the middle of Manhattan was designed by Frederick Law Olmsted in 1858. Olmsted, a landscape architect, went on to design many other parks and building sites, including the site of the U.S. capitol in Washington, D.C.

## **Other Maps and Guides**

In addition to road and city street maps, there are many other maps and guides that are useful to us in moving through our world. There are navigational charts for boaters and maps that show special points

of interest, such as all the caves in a state or all the parks or monuments in a city. Floor plans that guide you through famous buildings and museums are another kind of map. And, there are trail guides for hikers, bikers, skiers, and horseback riders.

However you choose to get around our vast and complicated world—and wherever you choose to go—you will always find that maps will help you do it much more easily.

### Chicago's "El"

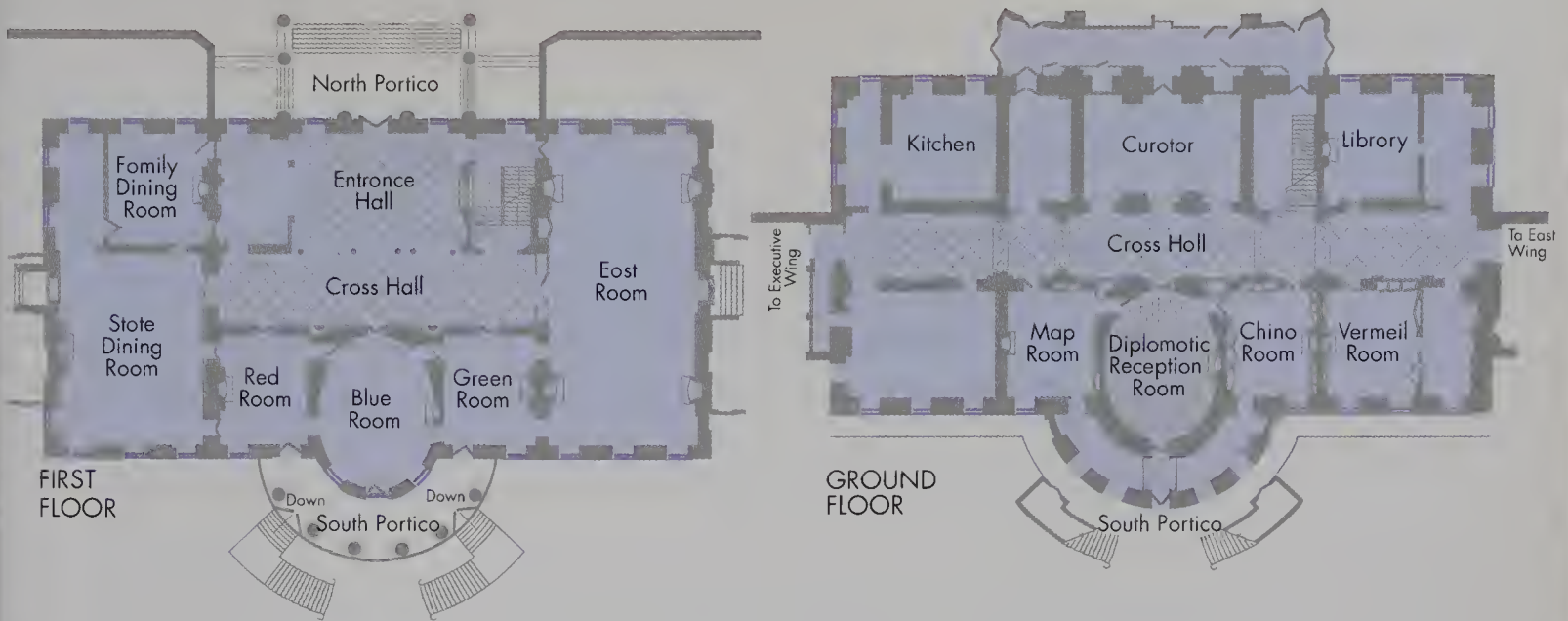
The map below gives still another view of a North American city. This map shows how to get around Chicago using the elevated train system, known as the "El." This kind of map—usually used for city subway or bus routes—is known as a linear map. It doesn't try to show things as they are; it makes them simpler. In real life, these routes do not all travel in straight lines, and the stops are not evenly spaced. But a map such as this, using straight lines and different colors for the different routes, helps you to easily see which train goes where.

▼ *Below: In reality the "El" stops shown on this linear map are not so evenly spaced.*





# Partial Floor Plan of the White House



The first map of this kind was developed in 1933 by the Englishman Henry Beck who took the true-to-life, but very confusing, London subway map and simplified it. He put all stops an equal distance apart, and used only straight lines and 90- or 45-degree angles to indicate direction. Beck's map style was so useful and popular that it soon was adopted worldwide.

▲ Above: As you can see from this map, if you entered the first floor of the White House and went down the stairs, you would reach the library.

## The Floor Plan of the White House

The floor plan of the White House, the U.S. president's home in Washington, D.C., is still another kind of locator map. Like a linear transportation map, this type of map does not try to show every detail of a building. Instead, it provides the information you need to move from one point to another, and to understand where you have been and where you are going.

### A Closer Look

Look at the map of the Chicago "El" on the opposite page. O'Hare Airport is at one end of the Blue Line. If you got on the train at Western Avenue, how many stops away would the airport be? Midway Airport is also at the end of a line. Which line would you take to go to Midway? All the lines meet in and around the central city. Find a map of the Chicago area and compare that map to the "El" map. What direction from the city is Skokie (at the end of the Yellow Line)?

## Glossary

- acid rain** Rain that has collected waste gases from the atmosphere and is damaging to the environment.
- colonization** Occupying another country to use its resources.
- deciduous forest** Forest made up of trees that lose their leaves once a year.
- deforestation** Large-scale clearing of forested land, which may die as a result.
- delta** A triangle-shaped area where a river deposits silt (fine grains of soil) before entering a sea or ocean.
- desertification** The creation of desert conditions as a result of long droughts, overgrazing, or soil erosion.
- drought** A long period without rainfall.
- erosion** Wearing away by the action of wind or water.
- evergreen forest** Forest made up of trees that stay green all year.
- export** Something sold to another country.
- gross domestic product (GDP)** The total output of a country; all products and labor.
- hardwood** Deciduous trees with dense trunks (see **softwood**).
- indigenous** Original to a particular place.
- Inuit** The preferred name for the Eskimo people of North America.
- per capita** Per person (literally, “per head”).
- plateau** A large, mostly level, area of land that is higher than the land surrounding it.
- salinization** The process by which nutrients are washed from the soil by over-irrigation, leaving the soil encrusted with salts.
- softwood** Coniferous, or cone-bearing, trees.



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