

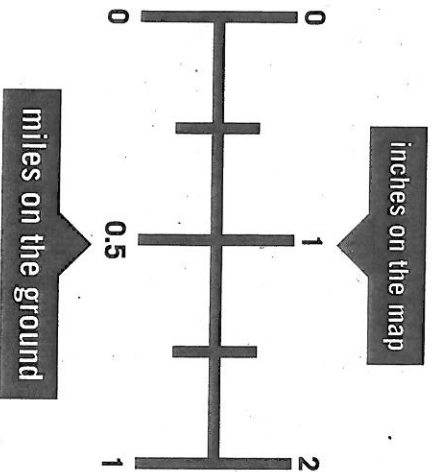
Concepts Underlying

Geographical Perspective !

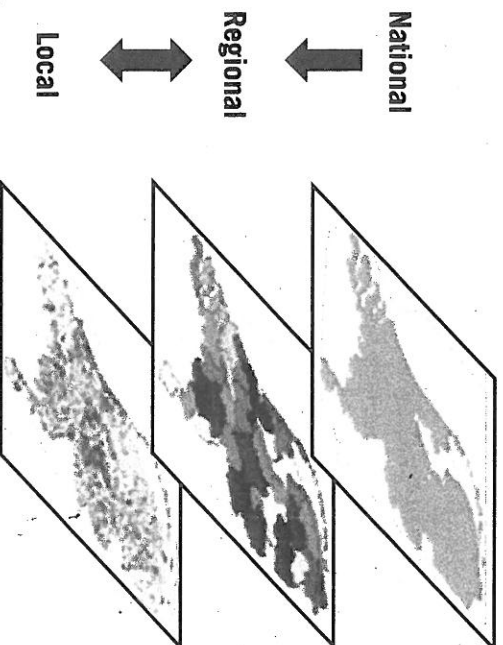
Each person's geographical perspective is unique, but concepts underlying this perspective encompass six main areas that you must know for the AP exam: scale, location, space, place, and pattern.

Scale !

Map Scale



Relative Scale



Scale is the relationship of an object or place to the Earth as a whole. Scale can be thought about two ways in geography:

1. **Map scale:** the ratio of distance on a map and distance in the real world in absolute terms.
2. **Relative scale,** or what can also be referred to as the **scale of analysis.** This describes the **level of aggregation**, or in other words, the level at which you group things together for examination. Relative scales can range from the individual or the local, from city to county and state, from regional to national to continental, or to the international and global scales.

Oh, Scaaaaaale No!

Be careful not to compare different scales of analysis or places at different scales. For example, it would be wrong to just visit Atlanta and assume the rest of Georgia had the same characteristics as that one city. Likewise, if you examined economic data from Wyoming and assumed the rest of the United States had the same median income, types of businesses, or unemployment rates, you would be incorrect.



Did You Know?

Worth Its Weight In Points: Remember that free-response questions are carefully graded based on a metric. Specifying the scale of the items you're being asked about may earn you points for detail of example material. Specify whether a company is a transnational corporation or a local business or if you are discussing a local government, a federal regulation, or an international organization. Much of that information may be in your book, but may also be found in simply being a student of history and culture, so flip through the newspaper or read a historical nonfiction book for pleasure. ABL—Always Be Learnin'!

[Please accept our immediate and sincere apologies for that super corny joke.]

Location

The concept of location, like scale, can be considered in relative and absolute terms.

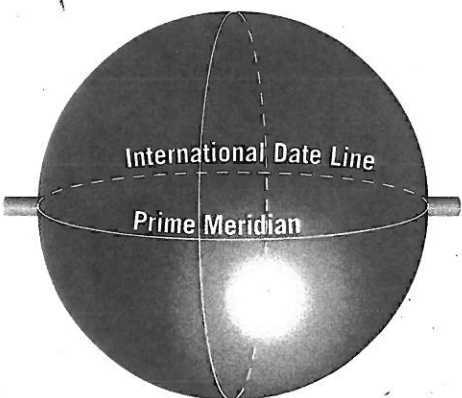
1. **Absolute location** defines a point or place on the map using coordinates such as latitude and longitude.
2. **Relative location**, by contrast, refers to the location of a place compared to a known place or geographic feature.

Absolute Location

Keeping latitude and longitude straight (pun intended)

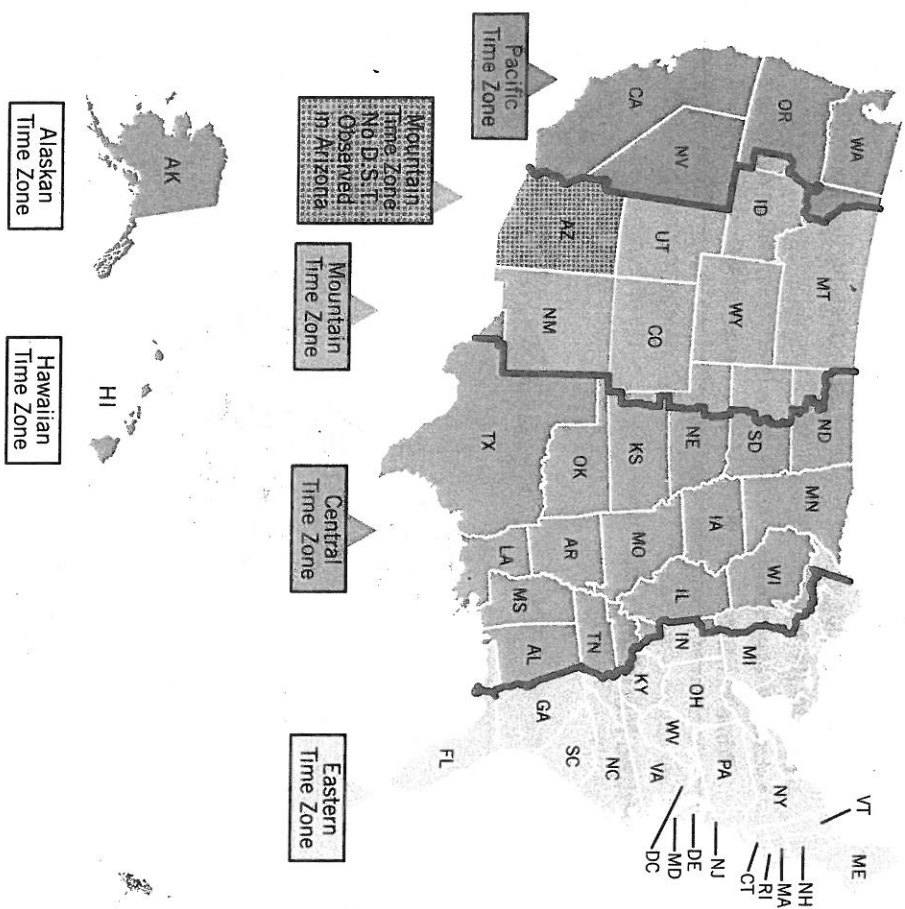
- Lines of latitude measure distance, in degrees, north or south of the equator (latitude = ladder).
- Lines of longitude measure distance, in degrees, east or west of the Prime Meridian (longitude = how long the ladder is).

Prime Meridian



The Prime Meridian is 0° longitude. On the opposite side of the earth is the 180° line of longitude. Parts of this line compose the **International Date Line** that also meanders around a number of international boundaries.

Time Zones



Time zones are divided up in 15-degree-wide longitudinal zones around the world (with some exceptions). This is because 360° divided by 24 hours a day equals 15°. One exception to this rule comes from China, where leaders established one time zone for the entire country. Another exception is North Korea, whose leaders decided in 2015 to create their very own spiffy time zone that is—get this—thirty minutes behind Japan and thirty minutes ahead of China. (Talk about a statement of political independence!) For practical purposes, dividing lines between

time zones often follow political boundaries, sometimes even along local area divisions. Time zones were created relatively recently, in the era of transcontinental railways, to standardize time across long east-west train lines.

Relative Location

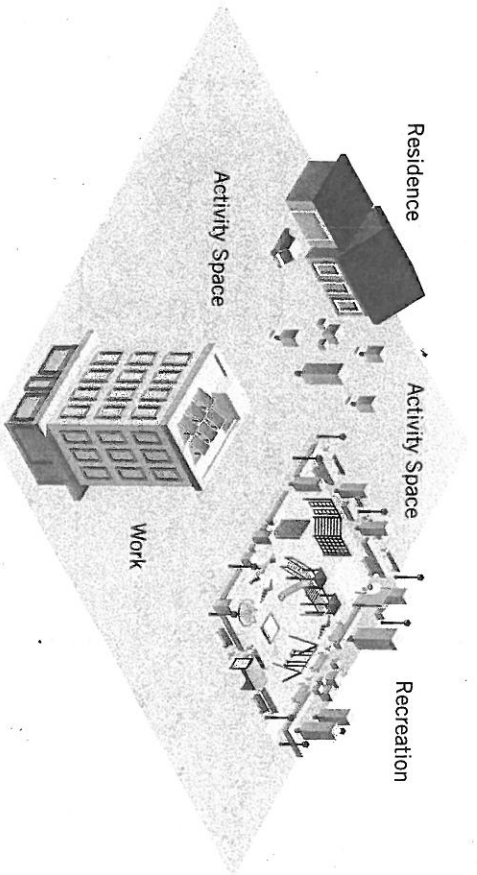
Relative location is based upon a place's relationship to other known geographic features or places. For instance, when people from Arlington, Virginia, are asked where they are from, they might say "Washington, D.C.," and people from Santa Monica, California, might say they are from Los Angeles, or simply L.A.



Did You Know?

Location, Location...Relative Location: Your relative location to a place can be highly valuable. In the early 1990s, Dublin, Ireland, became an important international business location due to its low-cost economy, English language skills, and close relative location to Great Britain, where the cost of doing business was extremely high (especially in London).

Space



When geographers talk about **space**, they're not talking about "the final frontier" or anything outside of Earth's atmosphere. Instead, geographers are referring to the surface of the Earth. Geographical space is a bit of an abstract concept. Close your eyes and think of the global surface of the earth as an empty slate.

Imagine placing objects on the Earth's **spatial** surface that are defined by their location and are separated by some degree of distance from other things. These objects could be people, trees, buildings, or even whole cities—whatever you choose to visualize. So when geographers talk about **activity space** they're referring to an area wherein activity occurs on a daily basis. "Thinking spatially" means understanding the pattern and distribution of objects and analyzing their relationships, connectedness, movement, growth, and change across space and over time.

Two locational concepts that work together are **site** and **situation**. **Site** refers to the physical characteristics of a place, such as the fact that New York City is located on a large, deep water harbor, next to the Atlantic Ocean. **Situation** refers to the place's **interrelatedness** with other places. More on all of this later.



Site and situation work together like peanut butter and jelly, like Tom and Jerry, like Abbi and Ilana.

Place

Well, that was deep! The concept of **place** is less abstract, but still important theoretically. It's important to have an open and broad concept of place. Think of place as an area of bounded space of some human importance. People don't have to live there for it to be a place (think: desert or ocean).

Toponym

This is a fancy word for a place name assigned to a location when human importance is recognized. Place names often reveal the historical interrelatedness of location places.

Area of Bounded Space

Bounded sounds small right? Well, don't be deceived: an area of bounded space could be somewhere small, such as a room, or as large as a continent.

Types of Places

Places come in a huge variety: regions, urban places, places of work, resource locations, and transportation nodes, just to name a few. When considering the importance of a location, region, town, or city, it is necessary to consider: "Why does this place matter?"

Sequent Occupancy

The attributes of a place change over time. Sequent occupancy describes the succession (or evolution) of groups and cultural influences throughout a place's history.

Place-Specificity (Say that ten times fast!)

In many places we find that there are several different historical layers that contribute to a place:
specific culture, society, local politics, and economy.

For example, the place specificity of Santa Fe, New Mexico, is a complex mix of multiple Native American, Spanish colonial, and modern American influences based upon the sequence of past and current societal influences.

Pattern !

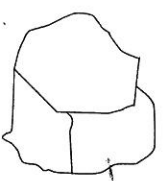
Now let's talk about how geographers use special terms to describe different types of **spatial patterns**; we'll present that information in a format that you might call a—wait for it—PATTERN.

Cluster When things are grouped together on the earth's surface, the pattern is referred to as a cluster.	Agglomeration When clustering occurs purposefully around a central point or an economic growth pole, it is referred to as agglomeration.	Sinuous If it's wavy, the pattern is sinuous, like the graph of your heartbeat at the doctor's office.
Random When there is no rhyme or reason to the distribution of a spatial phenomenon, it is referred to as a random pattern.	Scattered Objects that are normally ordered, but appear dispersed, can be referred to as scattered.	Linear If a pattern is in a straight line, it is linear.

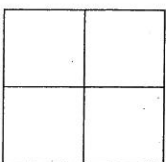
Land survey patterns have an effect on the property lines and political boundaries of states and provinces. There are three main types of land survey patterns used in North America:

- East of central Ohio and Ontario, land surveys until the 1830s used natural landscape features to divide land on a system of **metes and bounds**, which had been developed in Europe centuries earlier.
- After the 1830s, when new techniques to accurately determine longitude were transferred from sea navigation to land survey, surveyors in the United States and Canada used a rectilinear **township and range** survey system based upon lines of latitude and longitude. This produced the block-shaped property lines and more geometric shape to many western states and provinces.
- Former French colonial areas such as Québec and Louisiana have **long-lot patterns**. These have a narrow frontage along a road or waterway with a very long lot shape behind.

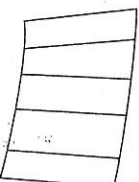
Land Survey Patterns in North America



Metes and Bounds



Township and Range



Long lots



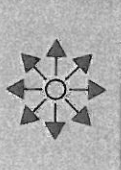
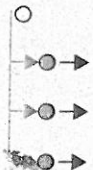
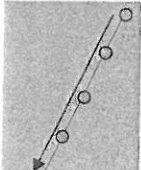
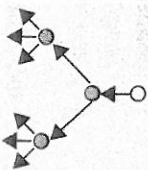
Ask Yourself...

What are some more examples of cities or regions that showcase these land survey patterns? What are the pros and cons of each? Can you think of historical incidents or trends or movements that were helped or hurt by how that region's land is surveyed?

Diffusion Patterns

There are a number of different ways and patterns in which human phenomena **diffuse** spatially or spread across the earth's surface. Most often we examine how culture, ideas, or technology spread from a point of origin to other parts of the world. Sometimes that point of origin or place of innovation is called a **hearth**. Here's a quick rundown of the different types of diffusion.

Type of Diffusion	Description	Example
Hierarchical	Originates in a first-order location; moves down to second order locations; so on and so forth at increasingly local scales.	Spread of fashion trends from leaders/celebrities to ordinary citizens.
Contagious	Moves outward from point of origin to nearby locations.	Communication of disease, or distribution of news in rural regions.
Stimulus	Underlying principle diffuses, then stimulates creation of new products/ideas.	When gluten-free eating habits (principle) influence restaurants to offer more gluten-free dishes (new products).
Expansion	Pattern expands outward from central origin in all directions.	The spread of spices from India to many other countries all over the world.
Relocation	Begins at point of origin; crosses significant physical barrier; relocates on other side.	A population crossing a large mountain range and making its home on the other side.



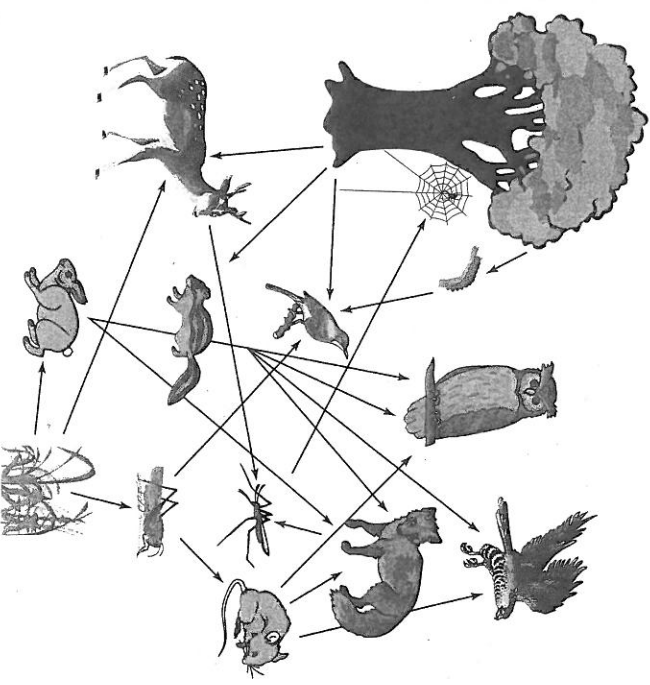
Using Landscape Analysis to Examine the Human Organization of Space

Humans and the land we live on are interconnected in a wide variety of ways. The AP Human Geography test will ask you about specific concepts surrounding the human-environment relationships and place relationships.

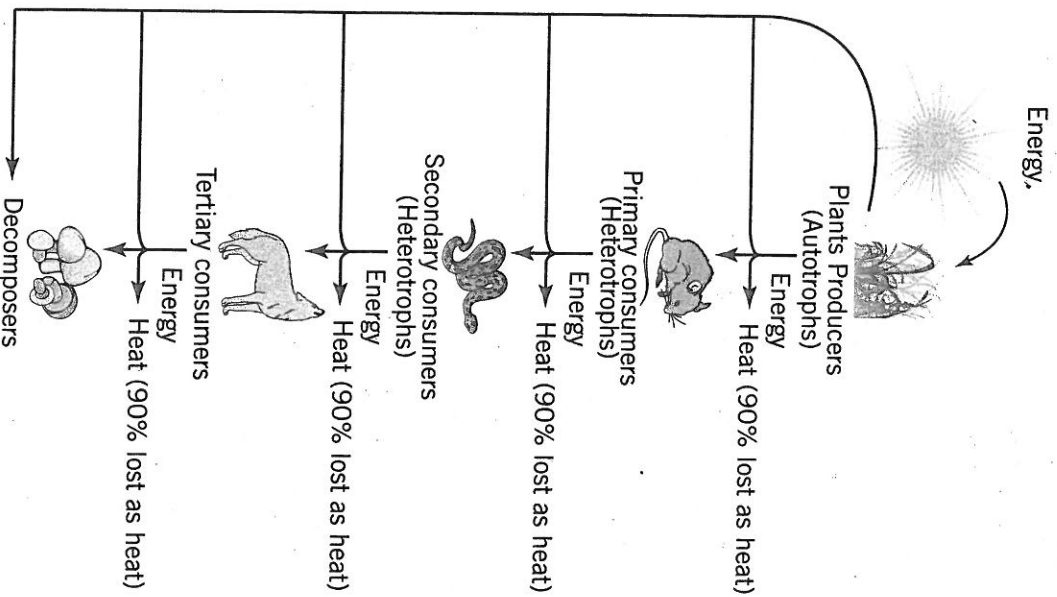
Human-Environment Relationships

The term **human-environment relationships**, or **human ecology**, is used to describe human interactions with nature. This includes farming practices, forestry techniques, fisheries, and environmental regulation.

Our ecological relationship to the land can be conceived of as a **food web** in which each type of crop and animal is dependent on a number of human inputs, soil and climate conditions, and other crops.

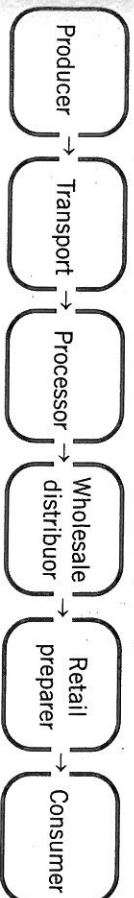


The term **food chain** can be used to detail the order of predators in the animal world.



Some food chains you will NOT see on the test? Taco Bell, Ruby Tuesday, Applebee's, Subway, Pizza Hut, Starbucks... but feel free to study AT any of these.

In a more modern sense, **food chain** can also describe several integrated human and mechanical inputs, from developing seeds to planting, fertilizing, harvesting, processing, packaging, and transporting food to market...all the way to your dinner plate.



Segments of the modern-day food chain



Did You Know?

Much of what you need to know for the Human-Environment Relationships portion of the exam has to do with specific farming practices, so don't skip this section!

Sustainable Agriculture

Farming practices can be criticized for their dependence on external inputs such as fuel, agricultural chemicals like pesticides and fertilizers, and the effects of farming on soil erosion and local water usage. As soils become depleted and water becomes the earth's most precious commodity, a new movement has grown and spread to conserve and protect these resources.

Conservation is the practice of preserving and carefully managing the environment and its natural resources. A new method of farming, **conservation agriculture**, has become increasingly important as a way of providing a sustainable farming system without sacrificing crop production.

Here are some examples of conservation agriculture as practiced on today's farms:

Conservation method	What it is	How it helps
No-tillage	Not plowing (or tilling) soil	Reduces soil erosion and increases fertility by retaining natural vegetation
Crop rotation	Growing a different crop on the same land in different seasons	Replenishes soil nutrients, discourages pests from sticking around, and strengthens soil by growing varying root structures
Interplanting crops	Planting fast-growing crops alongside slow-growing crops, so farmers can harvest fast-growing crops before slow-growing crops shade them out	Similar to crop rotation: Increases soil fertility and discourages pests

Sustainable yield describes the quantity of crops or animals that can be raised without endangering local resources such as soil, irrigation, or groundwater; it can also describe what can be raised without too many expensive inputs that would make farming unprofitable. Thus, **sustainability** can be viewed in both environmental and economic terms. Either way, by reducing inputs and using ecologically sound methods, farmers can reduce the risk that their farming practices may lead to long-term environmental or economic problems.

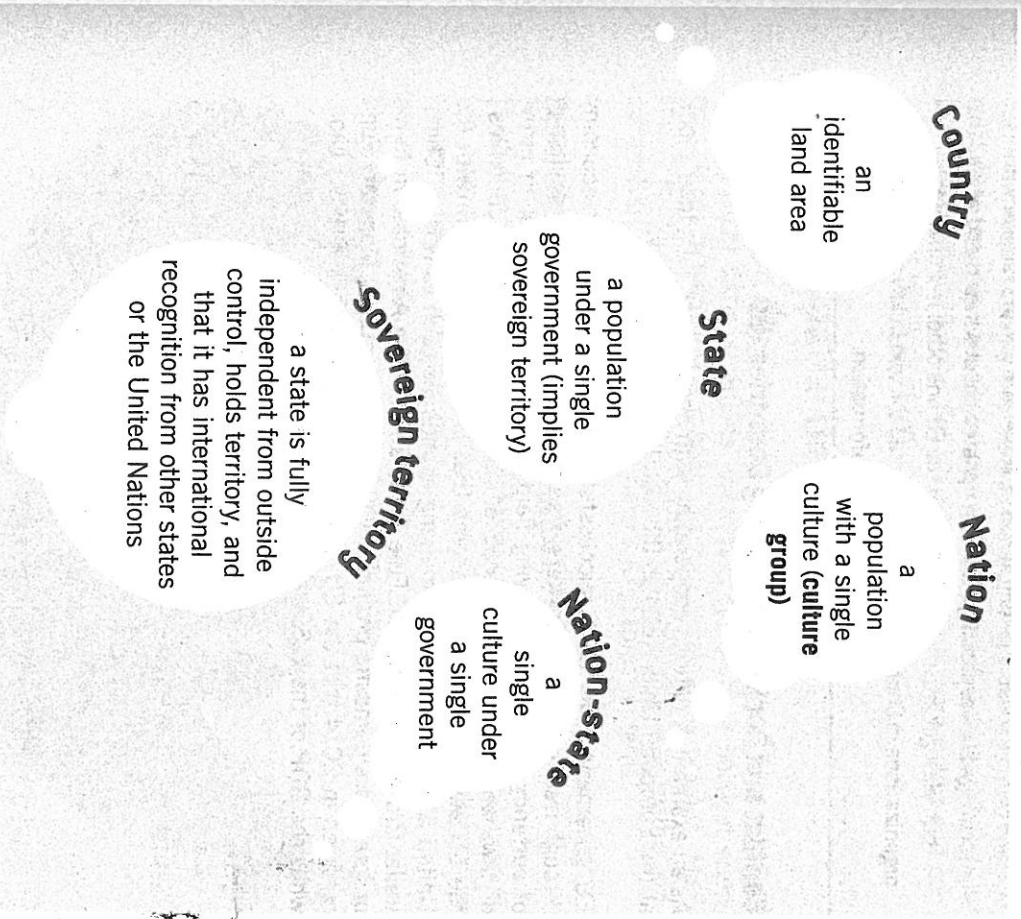
Interconnections Between and Among Places and Regions

Every place on Earth is related in some way, and we have specific terminology to describe those relationships. There are a number of political geography terms such as nation and state that we use in



Apparently it *doesn't* take a tillage to conserve natural resources! HDNK!

everyday speech as synonyms. However, the technical definitions of these terms have specific and important meaning in the geography of politics. Here's how to keep them straight:



We'll take a deeper dive into these topics in Chapter 4, Political Organizations of Space.

You Need to Know the EU

The European Union (EU) is a common topic in both the multiple-choice and free-response question sections. Make sure you are familiar with all things EU—especially the latest updates about who's in and who's out. We'll get into more detail about the EU and other multinational organizations in Chapter 4, so be sure to read the text below and also head over there for more information.

Conflict and Cooperation Among Countries

As an example of nations cooperating with one another, let's take a look at the European Union (EU) as the world's largest economy:

EU governance has been successful in creating a singular economy through free trade, open borders, free movement of labor, free exchange of currency, and a level playing field for business and labor in terms of laws and regulations. Instead of more than 25 small economies,* the EU acts as one state economy that is highly competitive with the United States, Japan, and emerging economies such as Russia, China, India, Brazil, or a proposed Free Trade Zone of the Americas. In terms of total gross domestic product (GDP), the International Monetary Fund reported in 2014 that the EU had an economy of nearly \$18.5 trillion, while the GDP of the U.S. was approximately \$17 trillion.

Key Geographical Skills

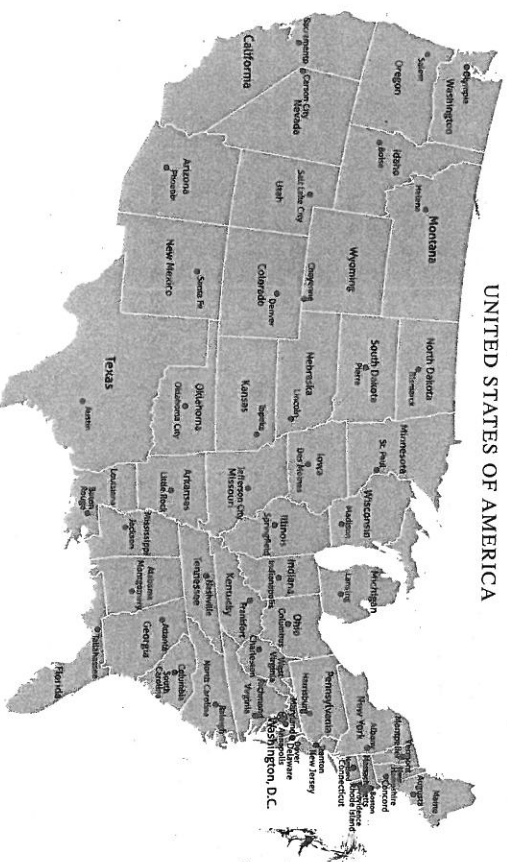
When you think of geography, maps are probably the first things that come to mind. There is a lot to know about maps—what types of maps exist, how they represent data, how regions are defined—and lots more! In this section, we'll cover the most important map properties and geographical skills you'll be asked about on the exam.

Maps and Spatial Data

For geographers, maps are important because they are what separate us from other social scientists, such as sociologists or political scientists. Maps are not just a graphic art form; they are a science. Many scientific maps are the results of spatial data analysis—the mathematical analysis of one or more quantitative geographic patterns.

Reference Maps: Let's Get Physical, Political

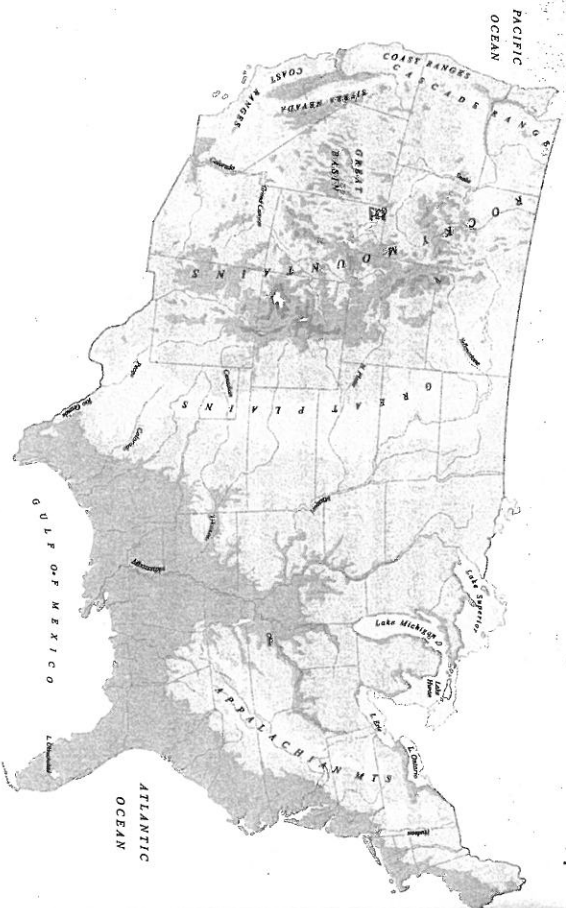
The two main types of maps are **political** and **physical**. Nowadays, you'll see many maps, particularly globes and other 3-D representations, that are some creative hybrid of the two.



Political maps show human-created features, such as boundaries, cities, roads, and highways. Political maps often use vibrant, distinct colors to help our eyes easily distinguish boundaries between places.



*See? It's true—the farmer and the cowman CAN be friends!

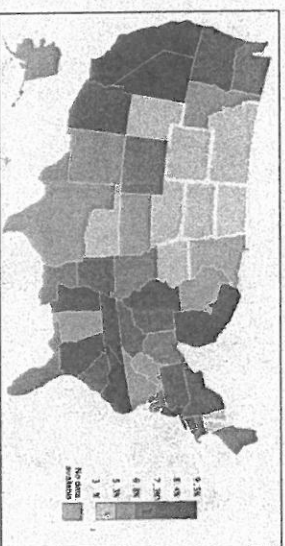


Physical maps display the geography of a place, or the natural features of the Earth. These maps often use shaded relief to show the configuration and height of land surface features, such as mountains, rivers, valleys, and deserts.

Thematic Maps

A number of different map types can be grouped under the heading **thematic maps**. Remember that each one expresses a particular subject and does not show land forms for other features. The theme could be something like a **dot-density map** showing the distribution of population within a country. It could also be very complex, showing multiple related subjects, such as a weather map that shows temperature contour lines (isotherms), wind patterns, pressure zones, and areas of precipitation. The table on the following page details a few common types of thematic maps.

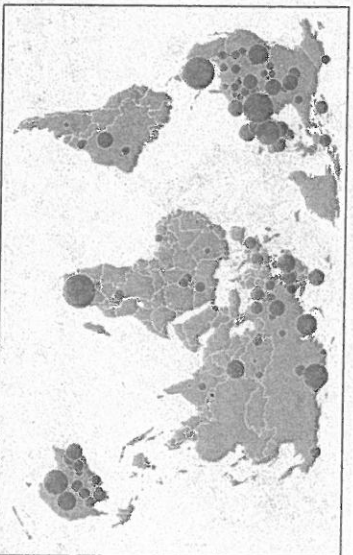
Thematic Map	Expression	How it works	Example
Choropleth	Uses color variations to indicate the geographic variability of a particular theme.	Colorized symbols, contour areas filled with different colors, or polygons denoting country boundaries are filled with different colors.	Population density map with each country shaded with a color representing the number of people it contains.



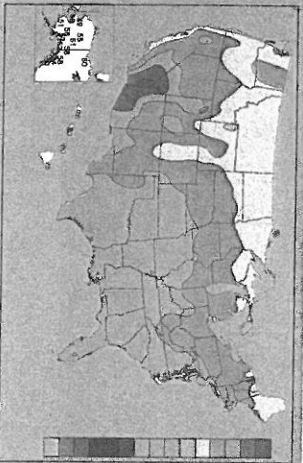
Dot-density	Uses dots to express the volume and density of a particular geographic feature.	Dots can represent the number of people in an area, or can express the number of events or phenomena that occurred in an area. Each dot may represent one event or multiple occurrences.	Heart Attack Density Map with dots representing the number of people who suffer heart attacks on a state-by-state basis. Each state would have a number of dots inside its boundary polygon representing the number of heart attacks.
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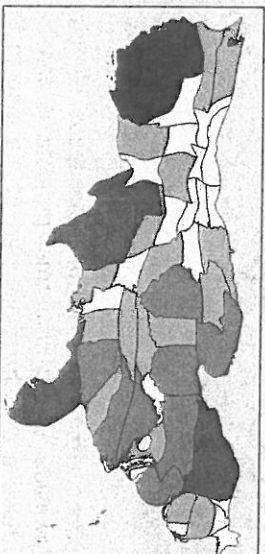
Thematic Map	Expression	How it works	Example
Graduated Symbol	Uses the visual variable of size to represent differences in the magnitude of spatially changing phenomenon.	Similar to a dot map, but may use a different symbol that resembles what the data represent (for example, a tree symbol to represent forest density across a state or country).	A map of the U.S. with varying-sized Twitter logos representing the density of Twitter users by state.



Isoline	Calculates data values between points across a variable surface and expresses lines of constant value, using isoline contours.	Data is labeled with a value at each measured point. Then these points are interpolated with neighboring points to create a continuous surface of isoline contours.	Weather maps showing temperature contours (isotherms) are the most common isoline maps.
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Thematic Map	Expression	How it works	Example
Cartogram	Uses a thematic variable (population, time, participation) as a substitute for distance or land area in a map.	Maps become distorted (but still recognizable) as they showcase the convey population data by information.	A map of the United States features all 48 contiguous states sized to population.



Map Projections

A map projection is a mathematical method by which one transfers the Earth's sphere onto a flat surface. That is, making a map, and as we just saw, there are many types of maps that one can make! There probably won't be a question that asks you to differentiate between the projections on the AP Human Geography Exam, but they could ask you about the practical issues behind certain projections. Each given projection creates different levels of accuracy in terms of size and shape distortion for different parts of the earth.



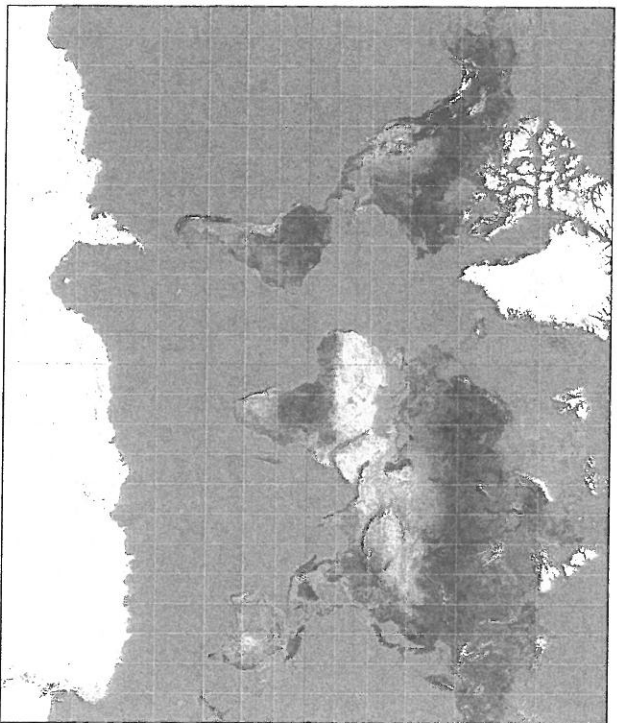
Remember!

Decisions, Decisions: A map projection's level of accuracy is based upon two concepts: **area preservation** and **shape preservation**.

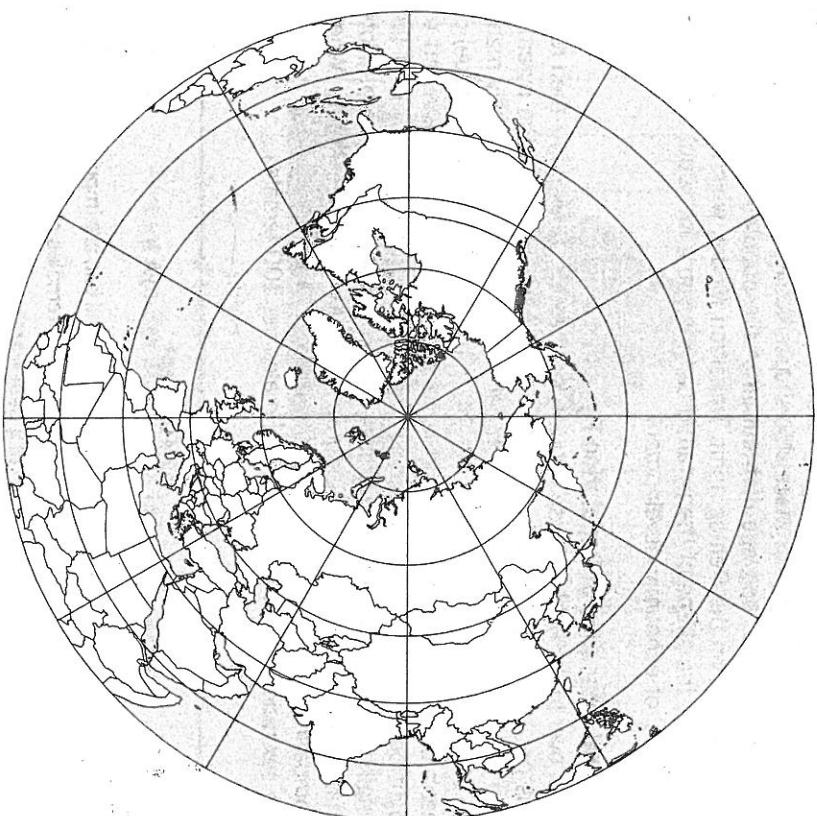
Equal-area projections attempt to maintain the relative spatial science and the areas on the map. However, these can distort the actual shape of polygons, such as the **Lambert projection** bending and squishing the northern Canadian islands to keep them at the same map scale as southern Canada on a flat sheet of paper.



Conformal projections attempt to maintain the shape of polygons on the map. The downside is that conformal projections can cause the distortion of the relative area from one part of the map to the other. For instance, in the commonly used **Mercator projection**, the shape of Greenland is preserved, but it appears to be much larger than South America, when in reality it is much smaller.



The **azimuthal equidistant projection**, or **polar projection**, maintains proportionately correct distances for all points on the map from the center point (pole). This map is useful because all lines of longitude are straight, facilitating global communication by making it easy to aim directional antennae between locations.



Interpreting Scales/Relationships Among Patterns

Population Pyramids

Population pyramids are a graphical way to visualize the **population structure** of a country or place. More specifically, population pyramids reveal the **gender** and **age distribution** of the population. Like a country's position on the Demographic Transition Model, which you'll see in Chapter 6, the shape of the pyramid can tell you a lot about that country's level of economic development.

General Principles of Population Pyramids

Look over to the right at those population pyramids. Soak it in—then read this paragraph. Ready? OK. Males are always on the left of the pyramid and females are on the right. Each bar is an **age cohort**, generally made up of five-year sets: 0–4, 5–9, 10–14, and so on. The origin (O-value) of each bar graph is the center and increases in value as you move left or right outward from the center. The single colored bar right or left of the origin is an **age-sex cohort**, with just one gender of that age group. (Note that age-sex cohorts may not always be colored on the exam.) When comparing the number of males and females in a population of cohort, the sex ratio tells you the number of males per 100 females.

Mind the Gap!

Gaps, where there is an unexpectedly small bar, are important to recognize. A gap in a male cohort but not in females of the same age group is most commonly a sign of a past war that was fought *outside the country*. A gap in data for both males and females is likely a sign of past war *inside that country*, epidemic disease, or famine.

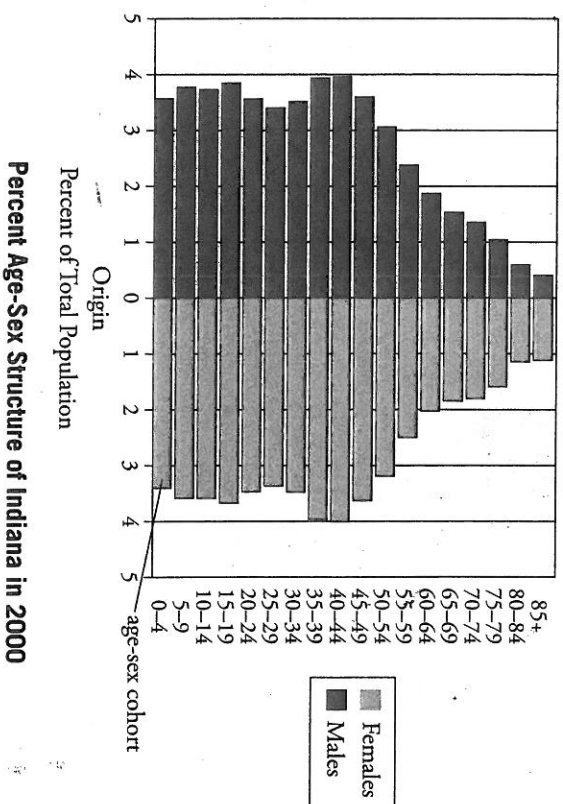


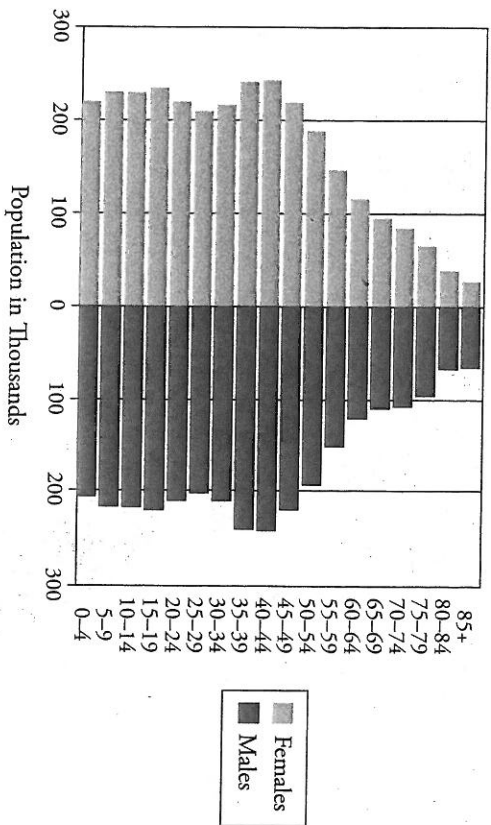
AP Human Geography calling! The population pyramid is one pyramid scheme that you can get into without annoying your friends....

Not all population pyramids look the same. Depending upon who drew them, there may or may not be a column down the middle. Seeing the overall shape of the pyramid is what's important. We'll use both methods here so that you are used to seeing it both ways. You never know what they are going to put on the exam.

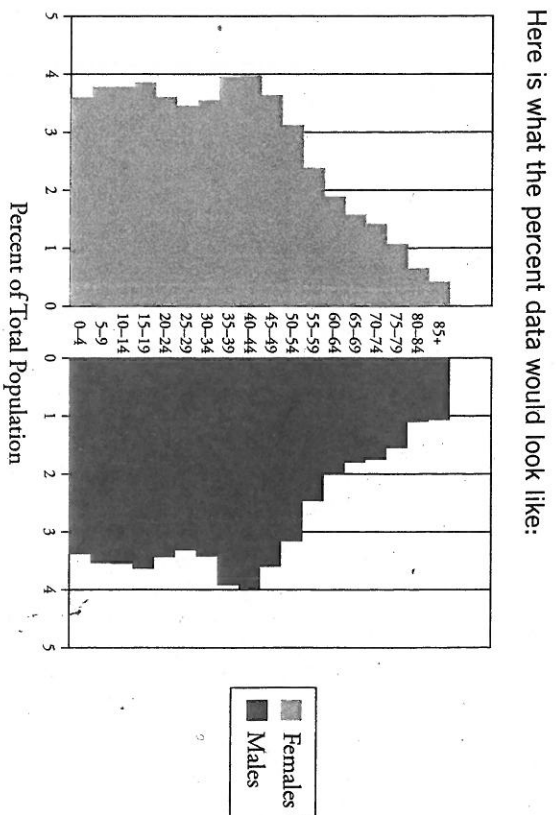
Check the Type of Data

Be aware of whether the bars on the graph show the *percent* of the total population or the total *number* of people in the age-sex cohort.





While those two pyramids look the same, we need to be sure when referring to the data that we recognize what kind of numbers (percent or total) we are talking about—this is especially important if asked on the essay section. What about those pyramids with the column down the middle? Those are showing the same data—they just have the number line located in a different place.



Shape as Shorthand

The general shape of the pyramid is what tells you about the character of the country, state, province, or city that is being diagrammed. In the case of countries, pyramid shapes are indicators of growth rates and of the level of economic development. Look at the diagram below to see the generalized differences:

Shape:	Triangular	Extended Triangle	Column	Reduced Pentagon
Growth:	Fast-Growing	Moderate Growth	Slow Growth	Shrinking
Examples:	Laos Mozambique	Mexico Brazil	United States Uruguay	Germany Hungary

Regions—Brass Tacks

When geographers talk about regions, they're talking about **space** and **place**. Space meaning, the geometric surface of the Earth and place meaning an area of bounded space that has some importance. **Regions** are a type of place and a city, for example, can be part of multiple regions all at once. Example: Boston is considered part of New England, is also the heart of Red Sox nation, and is part of the eastern seaboard region. Another region is the **Corn Belt**—a few Midwestern states where corn has been the predominant crop since around 1850. These towns boast many family farms, many jobs in farming, and many powerful farm organizations with lobbying power.

Gimme a Hint(erland)

Note that suburban Boston and much of Massachusetts can be seen as a **hinterland** of the port in Boston. Hinterland is the area behind a port where provisions and supplies are delivered to be distributed in that area. It sounds like an old timey word, hinterland, but you should be familiar with it for the AP Human Geo Exam.

Types of Regions

There are three categories of regions that you should know for the AP Human Geography Exam:

formal

functional

vernacular

Keep in mind that there are many different types of regions, and a single place can exist in several regions simultaneously. For example, the Everglades in Florida exist within the Southern U.S. region and are also considered a wetland region. Regions exist at many different scales and can overlap. Keep an open mind about what can be considered a region.

Formal Regions

A **formal region** is an area of bounded space that possesses some **homogeneous characteristic** or **uniformity**—across the region there is at least one thing that is the same everywhere within the regional boundary.

Types of Formal Regions

The defining homogeneous character can be as simple as a common language. In a **linguistic region**, everyone speaks the same language, but groups in that region can be very different culturally. Example: The United States and Australia are in the same linguistic region, but the two countries share little else in culture, economy, or landscape. Regional concepts can also be very complex. The American South or "Dixie" is one such region; a multitude of factors define the region (dialect, vocabulary, food, architecture, climate, ethnicity, religion). Because these defining characteristics are imprecise, people disagree over whether states like Virginia, West Virginia, and/or Maryland are parts of Dixie.

Regional boundaries differ based upon the type of region. **Culture regions** tend to have fuzzy borders. It's hard to tell where one region ends and the other begins, such as the border between Dixie and "the North" in the United States. Boundaries between **political regions** are finite and well-defined. Some political boundaries are porous, such as those between Canada and the United States, and other boundaries are protected, such as that between the United States and Mexico.

Environmental region boundaries are transitional and measurable. The environmental transition zone between two **bioregions**, or **biomes**, is known as an **ecotone**. Example: The ecotone between the Sahara Desert and the tropical savanna of Africa is a dry grassland region known as the Sahel.

Functional Regions

Functional regions or **nodal regions** are areas that have a **central place** or **node** that is a focus or point of origin that expresses some practical purpose. The influence of this point is strongest in the areas close to the center, and the strength of influence diminishes as distance increases from that point.



Did You Know?

Hey There, Sports Fans!

Market areas are a type of functional region. A professional sports team will have the strongest fan base and intensive media network coverage in areas close to the team's home city. There are fans and media viewing in the larger region around that city, but they diminish as you get farther and farther away. Eventually you reach a point where the fans transition to another team's functional region and the media networks are oriented in that direction.

Vernacular Regions

The **vernacular region** is based upon the perception or collective **mental map** of the region's residents. The overall concept can vary within the region due to personal or group variations. Looking again at the American South, or "Dixie," some residents define it by the location of country music bands or fans, where others recognize the numbers of Southern Baptist church congregations or NASCAR races as the defining statistic. There are those who consider Dixieland only as the states of the Civil War—era Confederacy or the part of the country where it never (or almost never) snows. No matter what is used to spatially define the regional concept, the reason tends to be a point of pride for residents.

Jumping to Conclusions Doesn't Score You Points (or Burn Calories)

Be careful with your vernacular definitions. There are country music radio stations in all fifty U.S. states and throughout Canada (ever heard of Shania Twain? She's from Ontario!). Some of NASCAR's events with the largest attendance are in decidedly un-Southern states like Wisconsin, California, and New Hampshire.

Geographic Technology



Geographic Information Systems (GIS)

Geographic Information Systems (GIS) became practical with the onset of the desktop computer in the 1970s. GIS incorporate one or more **data layers** in a computer program capable of spatial analysis and mapping. Data layers are numerical, coded, or textual data that is attributed to specific geographic coordinates or areas. As all data is geographically tied to specific locations, data between layers can be analyzed spatially. Each layer can show a different type of geographic feature.

Global Positioning System (GPS)

Global Positioning System (GPS) utilizes a worldwide network of satellites, which emit a measurable radio signal. When this signal is available from three or more **Navstar** satellites, a GPS receiver is able to triangulate a coordinate location and display map data for the user. In addition, there are handheld GPS units for outdoor sporting use, GPS units on delivery trucks and emergency vehicles that notify supervisors of their location, and units that land surveyors use to locate property lines, and buried utility lines, and accurately lay out new construction sites.

Remote Sensing

Large-scale aerial photographs are commonly used by local governments to record property data and set tax assessments. Aerial photographs can also be used to revise topographic map data without having to send out a survey team to update old maps. Remote sensing is currently used to monitor the loss of wetlands and barrier islands on the Gulf Coast of Louisiana. Each year, satellite data are collected and compared with GIS to show the areas and patterns of wetland and beach loss. is analysis is used by engineers and environmental planners to develop wetland and beach restoration projects.

Chapter 1 Key Terms

rate of natural increase (RNI)	cluster
immigration	agglomeration
emigration	sinuous
Demographic Transition Model	random
rank-size rule	scattered
distance decay	linear
relative distance	land survey patterns
Tobler's Law	metes and bounds
friction of distance	township and range
The Isolated State Model	long lots
Latin American City Model	diffusion patterns
Theory of Industrial Location	hearth
Central Place Theory	human-environment relationships
Von Thunen's Land Use Model	(human ecology)
Central Business District (CBD)	food web
Industrial Location Theory	food chain
central place theory	conservation
market areas	sustainable yield
hinterlands	sustainability
Christaller's Central Place Theory	country
urban hierarchy	state
scale	nation
map scale	nation-state
relative scale	sovereign territory
scale of analysis	European Union (EU)
level of aggregation	political maps
location	physical maps
absolute location	thematic maps
relative location	dot-density map
International Date Line	choropleth map
space	dot map
activity space	graduated symbol map
place	isoline map
toponym	cartogram map
area of bounded space	area preservation
types of places	shape preservation
sequent occupancy	equal-area projections
pattern	Lambert projection

Chapter 1 Key Terms

conformal projections	regional boundaries
Mercator projection	culture regions
Azimuthal Equidistant Projection (Polar Projection)	political regions
population structure	environmental region
cohort	bioregions (biomes)
age-sex cohort	ecotone
regions: formal, functional, vernacular	functional regions (nodal regions)
linguistic region	vernacular region
	mental map

CHAPTER 2

Population and Migration

This chapter is intended to help you better understand the dynamics, growth, and change of populations. First, we'll go over some population patterns and different ways to describe them. Then, we'll review some basic math tools to help you recall many of the complicated statistics and numerical indicators. Finally, we'll discuss how population moves, including types and implications of migration.