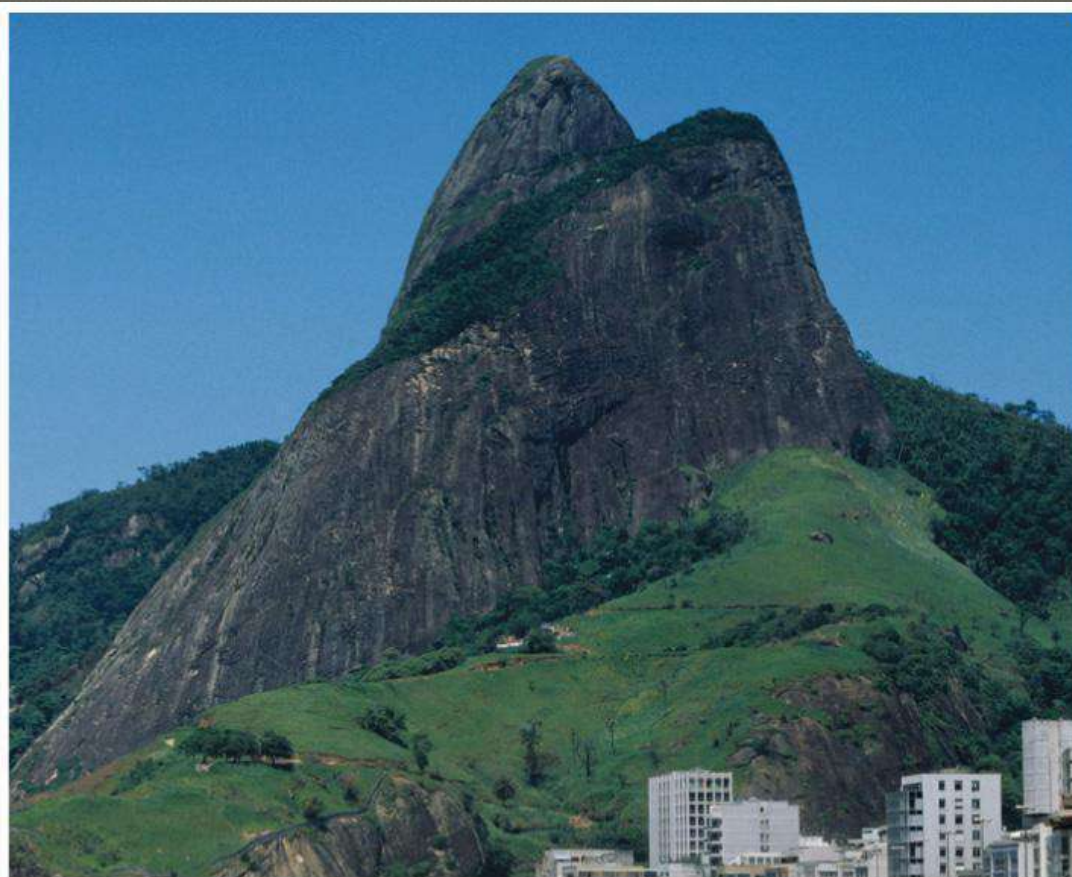


# Human Geography

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## ● Chapter 1: Thinking Geographically





## ● Geography combines natural and social science

- Human geography
  - Associated with cultural features such as economic activities and cities.\*\*
- Physical geography
  - Associated with natural features such as landforms and vegetation.



# 1.1 Welcome to Geography

- **Geographers explain** *where* things are, *why* they are unique, **and** *significance* places have.
- To explain why every place is unique, geographers have two basic concepts:
- **Place**- a specific point on Earth distinguished by a particular characteristic
- **Region**- an area of Earth distinguished by a distinctive combination of cultural and physical features.
  - Regions are situated on a **node**- a place where lines in a network cross or meet.



## 1.1 Welcome to Geography

- To explain why different places are interrelated, geographers have three basic concepts:
- **Scale**- the relationship between the portion of Earth being studied and Earth as a whole.
- **Space**- refers to the physical gap or interval between two objects.
- **Connection**- refers to relationships among people and objects cross the barrier of space.



## ● Cartography

---

- The science of mapmaking

## ● Maps

- Scale models of the real world
- Maps are reference tools
- Maps are communication tools
- **Map scale-** the relationship of a feature's size on a map to its actual size on Earth
- Map scale is presented in 3 ways:
  - **Ratio or fraction-** Shows the numerical ratio between distances on the map and Earth's surface. (1:10,000,000)
  - **Written-**describes this relationship between map and Earth distances in words. For example: 1 centimeter equals 10 kilometers.
  - **Graphic-**usually consists of a bar line marked to show distance on Earth's surface.



# 1.3 Reading Maps



1 centimeter on the map equals  
100 kilometers on Earth; 1:10,000,000.

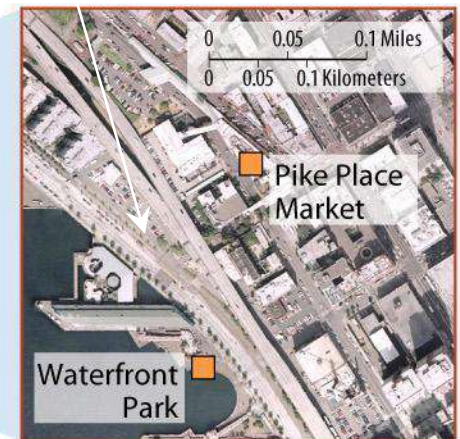


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1 centimeter on the map equals  
10 kilometers on Earth; 1:1,000,000.



1 centimeter on the map equals  
1 kilometer on Earth; 1:100,000.



1 centimeter on the map equals  
100 meters on Earth; 1:10,000.

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- 
- **Map projections-** The scientific method of transferring locations on Earth's surface to a flat map.
    - Cylindrical
    - Conic
    - Azimuthal
    - Projections are necessary because a spherical surface is represented on a two-dimensional plane.
    - When the Earth's surface is represented on a two-dimensional map through a projection, distortion occurs.



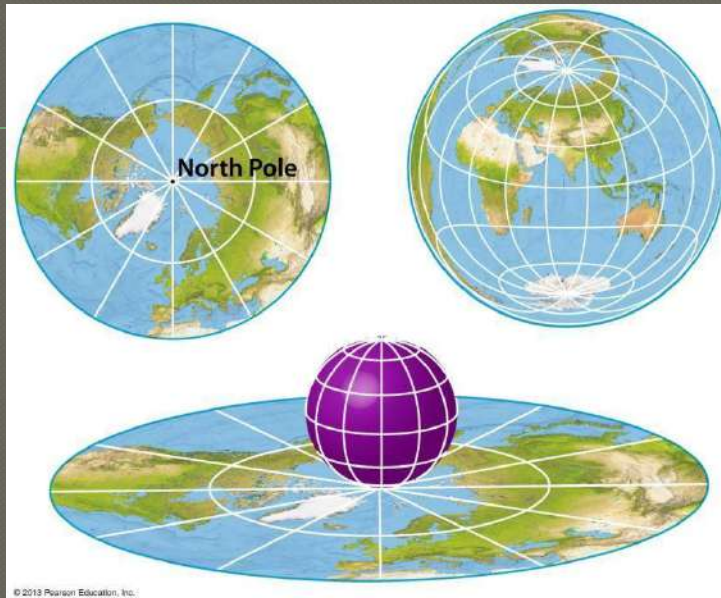
## Chrome book Activity

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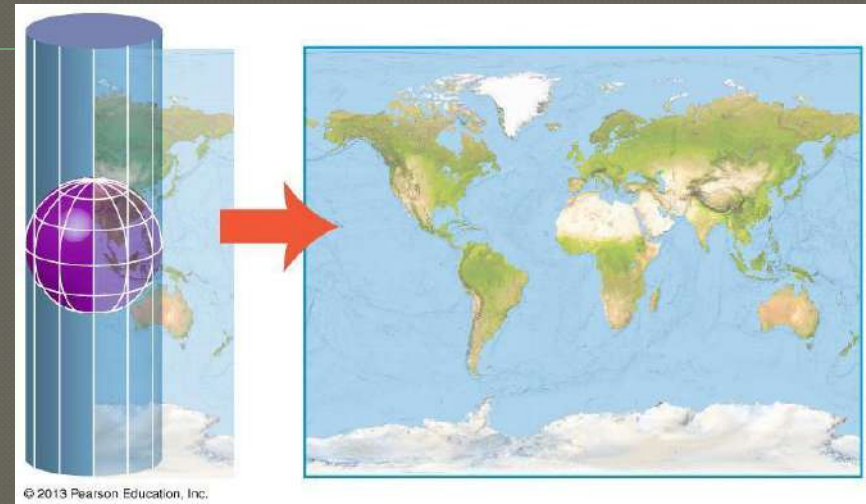
[http://media.pearsoncmg.com/bc/bc\\_0media\\_geo/map\\_projections/noqzs/main.html](http://media.pearsoncmg.com/bc/bc_0media_geo/map_projections/noqzs/main.html)



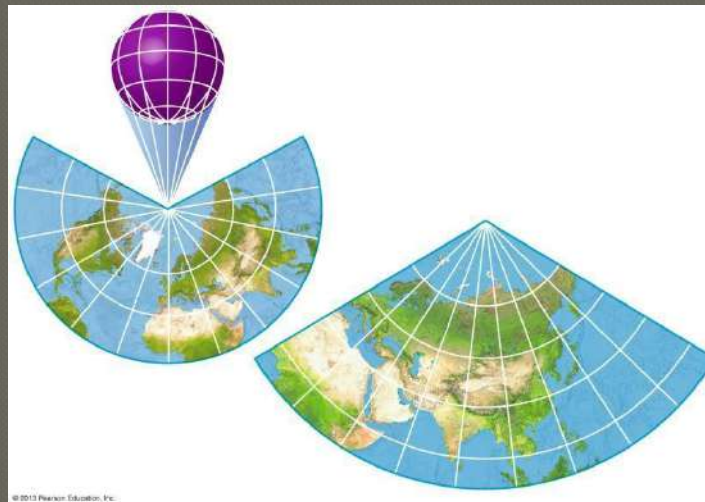
# 1.3 Reading Maps



AZIMUTHAL PROJECTIONS



CYLINDRICAL PROJECTIONS



CONIC PROJECTIONS





## ◀ **WORLD MAPS**

The Winkle II pseudo-cylindrical projection.



## ◀ **CONTINENTS**

The Lambert azimuthal equal area.



## ▲ **COUNTRIES**

The Lambert conformal conic projection.

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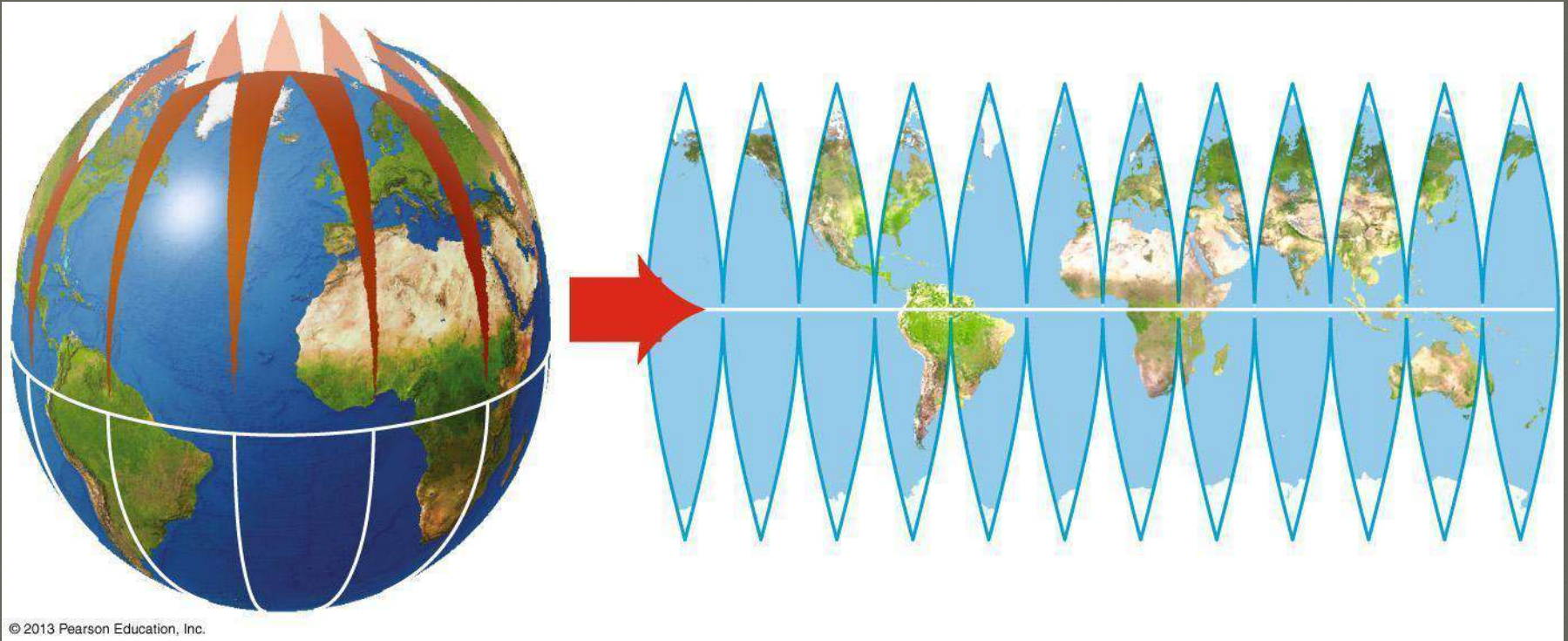
## PROJECTIONS USED IN THIS BOOK



- **The problem of distortion is especially severe for maps depicting the entire world.** A projection can result in four types of distortion:
  - The **shape** of an area can be distorted, so that it appears more elongated or squat than in reality.
  - The **distance** between two points may become increased or decreased.
  - The relative **size** of different areas may be altered, so that one area may appear larger than another on a map but is in reality smaller.
  - The **direction** from one place to another can be distorted.



## DISTORTION





# 1.4 The Geographic Grid

## ● Longitude

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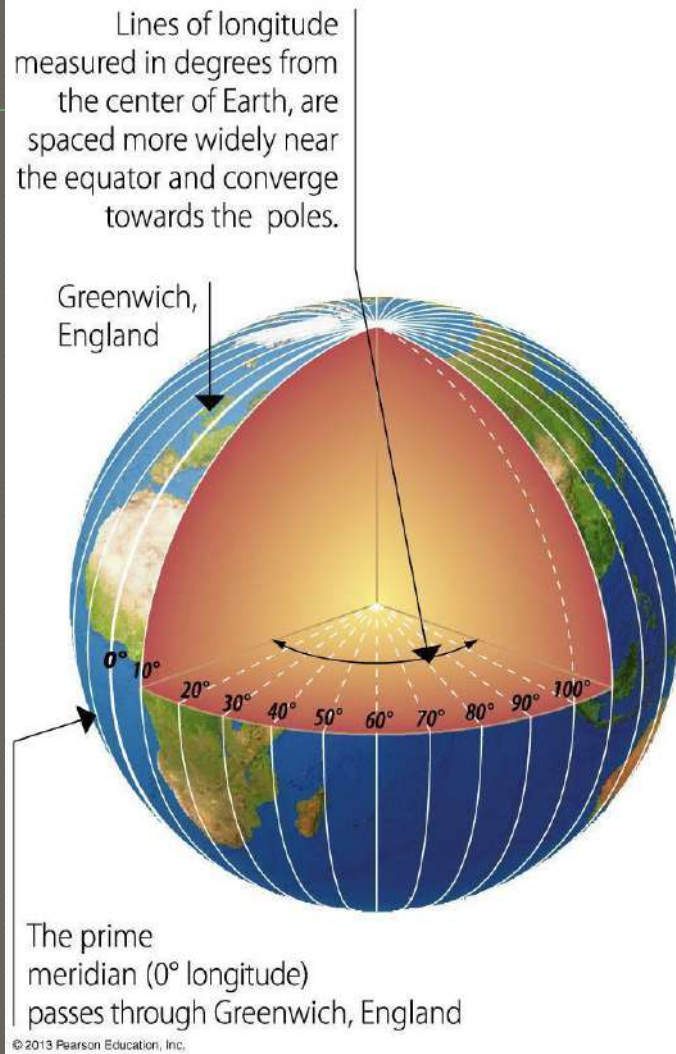
- **Meridian**- an arc drawn between the North and South poles. The location of each meridian is identified on Earth's surface according to a numbering system known as **longitude**.
- **Prime meridian**- the meridian that passes through the Royal Observatory at Greenwich, England, is 0 degrees longitude.

## ● Latitude

- **Parallel**- a circle drawn around the globe parallel to the equator and at right angles to the meridians. The numbering system to indicate the location of a parallel is called **latitude**.
- 
- **Absolute Location**-A point on the earth's surface expressed by a coordinate system such as latitude and longitude.
  - **Relative Location**- A location of a place in relation to another place.



# 1.4 The Geographic Grid

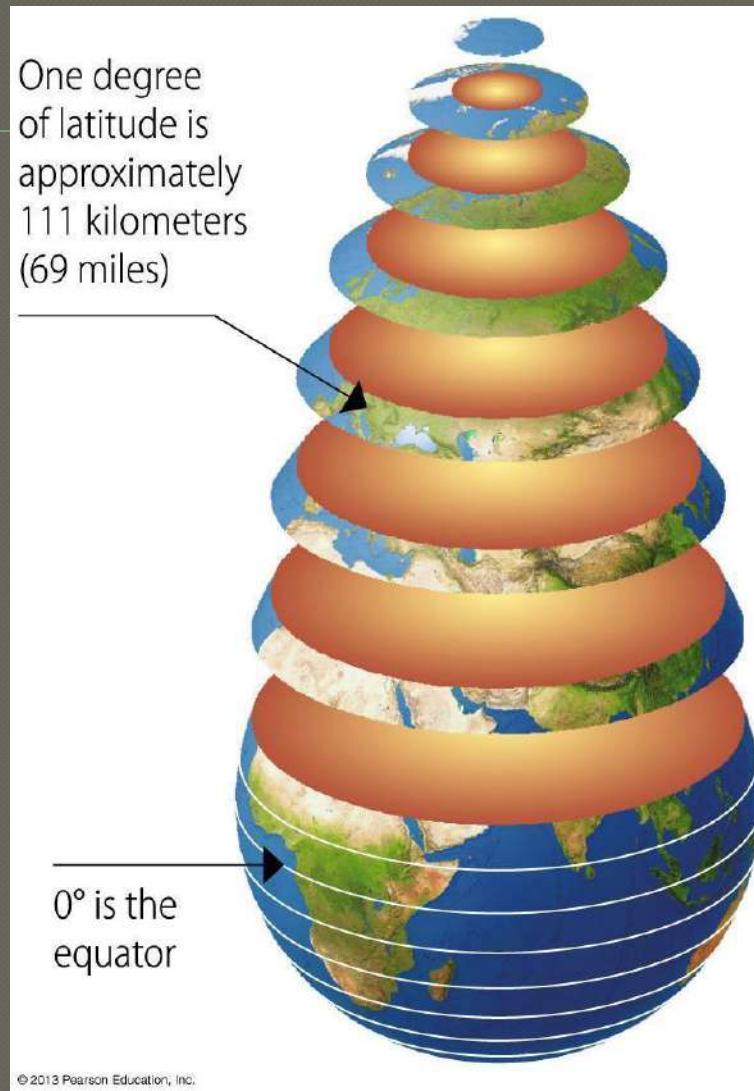


## LONGITUDE

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# 1.4 The Geographic Grid



## LATITUDE

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# 1.4 The Geographic Grid



## HOW LATITUDE AND LONGITUDE WORK

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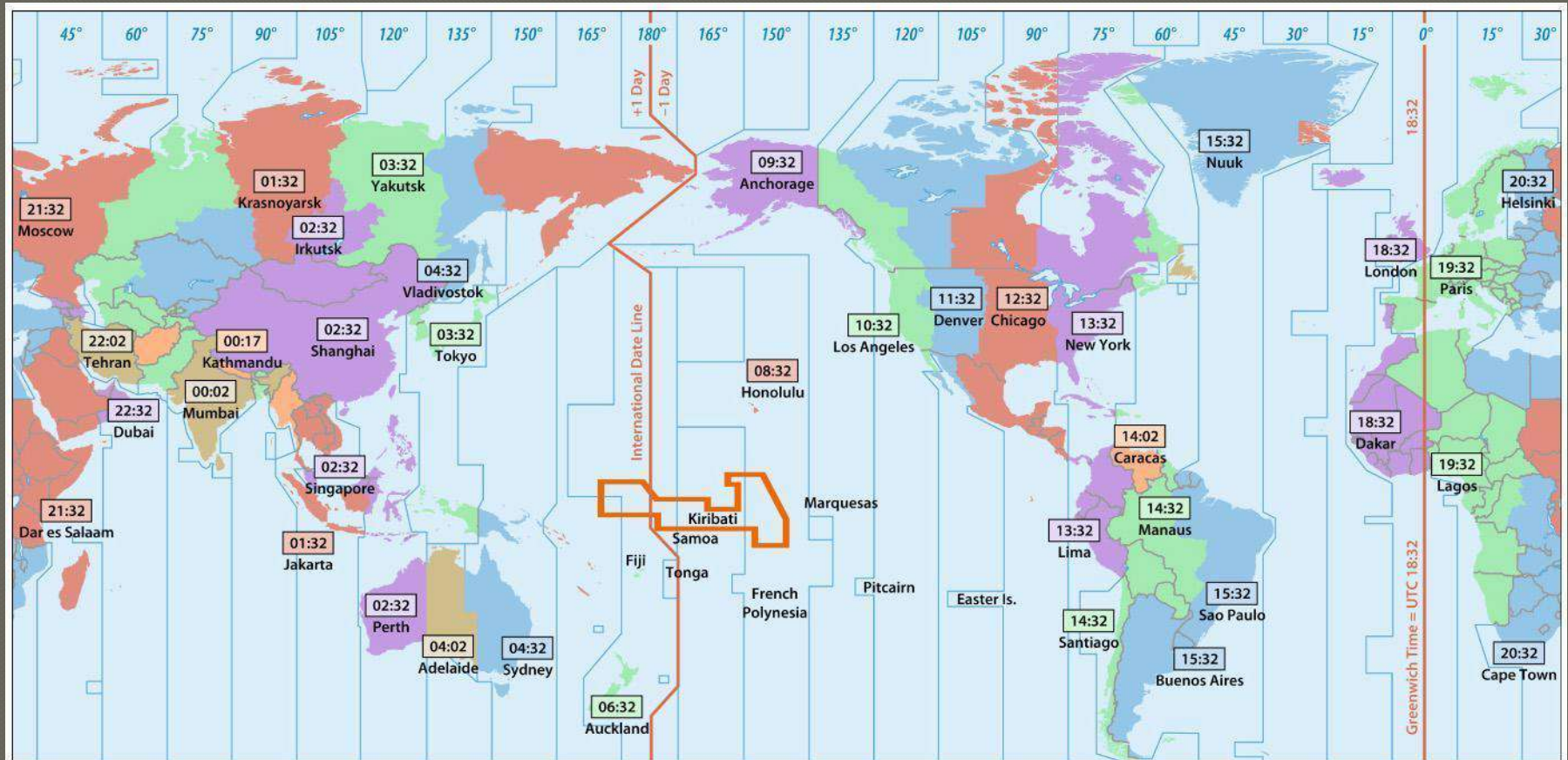


## ● Time zones

- Greenwich Mean Time (GMT)
  - The 0 degree longitude runs through Greenwich because England was the world's most powerful country when longitude was first accurately measured and the international agreement was made.
  - AKA Universal Time (UT)
- 1 hour =  $15^\circ$  (traveling  $15^\circ$  east or west is the equivalent of traveling to a place that is 1 hour earlier or later than the starting point).
- Standard time zones- each  $15^\circ$  band of longitude is assigned to a standard time zone.
- **International Date Line**- for the most part follows  $180^\circ$  longitude. When you cross it heading eastward toward America you move the clock back 24 hours, or one entire day. You turn the clock ahead 24 hours if you are heading westward toward Asia.



# 1.4 The Geographic Grid



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## TIME ZONES

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## 1.4 The Geographic Grid- Hemispheres

- 
- [http://education.nationalgeographic.com/education/encyclopedia/hemisphere/?ar\\_a=1](http://education.nationalgeographic.com/education/encyclopedia/hemisphere/?ar_a=1)



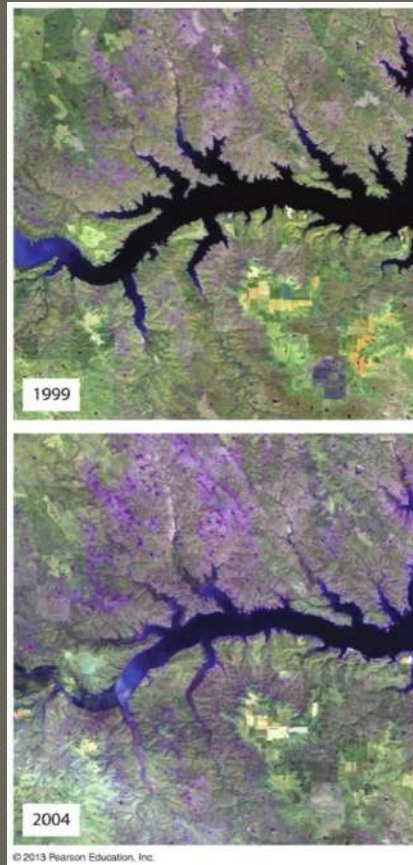
# 1.5 Geography's Contemporary Analytic Tools

- GIS (Geographic Information Science):  
is the development and analysis of data about Earth acquired through satellite and other electronic information technologies.
- GIScience helps geographers to create more accurate and complex maps and to measure changes over time in the characteristics of places.



# 1.5 Geography's Contemporary Analytic Tools

- **Remote sensing-** The acquisition of data about Earth's surface from a satellite orbiting Earth or from other long-distance methods



REMOTE SENSING

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# 1.5 Geography's Contemporary Analytic Tools

## ● Global Positioning System (GPS)



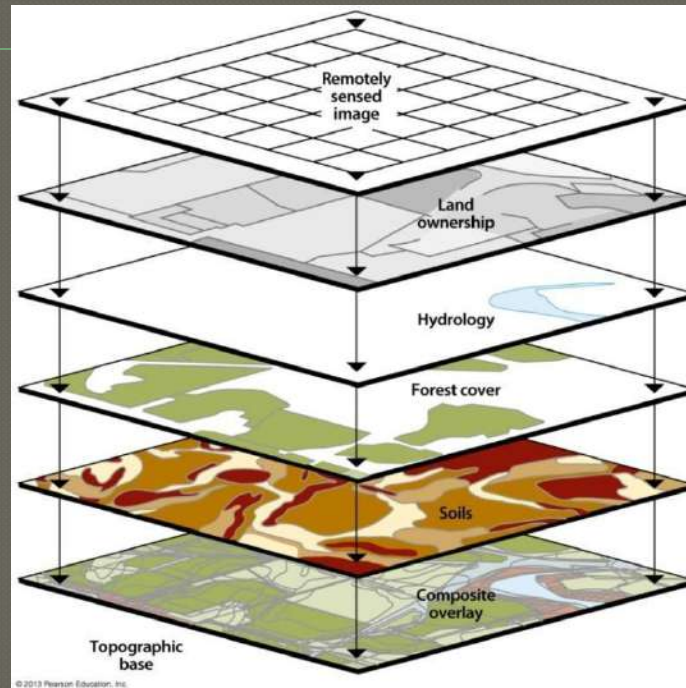
GPS- A system that determines the precise position of something on Earth.

- The GPS system used in the United States includes two dozen satellites placed in predetermined orbits, a series of tracking stations to monitor and control the satellites, and receivers that compute position, velocity, and time from the satellite signals.



# 1.5 Geography's Contemporary Analytic Tools

## ● Geographic Information Systems (GIS)



- GIS (Geographic Information System):  
is a computer system that captures, stores, queries, analyzes, and displays geographic data.
- A map can be created by asking the computer to retrieve a number of stored objects and combine them to form an image. Each type of information can be stored in a layer. Layers can be compared to show relationships among different kinds of information.



# 1.5 Geography's Contemporary Analytic Tools

- **Mash-Ups**-the practice of overlaying data from one source on top of one of the mapping services.

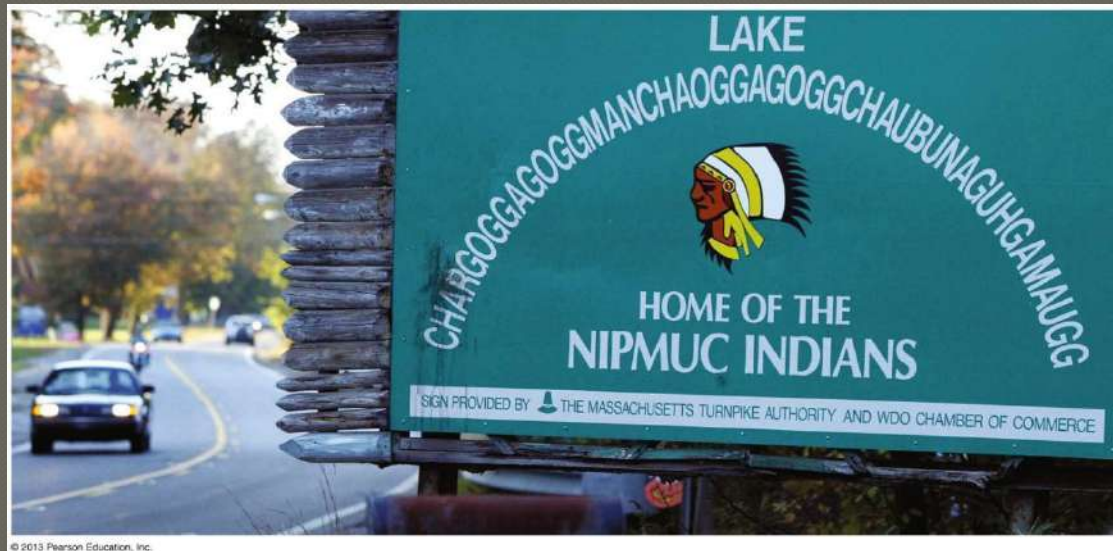


Mash-ups assist in finding apartments, hotels, sports facilities, and transit stops. Mapping software can show the precise location of commercial airplanes, the gas stations with the cheapest prices, and current traffic tie-ups.



# 1.6 Places: A Unique Location

- Geographers describe a feature's place on Earth by identifying its **location**, which is the position that something occupies on Earth's surface.
- **Place Names**
  - Toponyms-name given to a place on Earth



LONGEST U.S. PLACE NAME



# 1.6 Places: A Unique Location

- **Situation-** the location of a place relative to other places.



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Situation is a valuable way to indicate location, for two reasons:

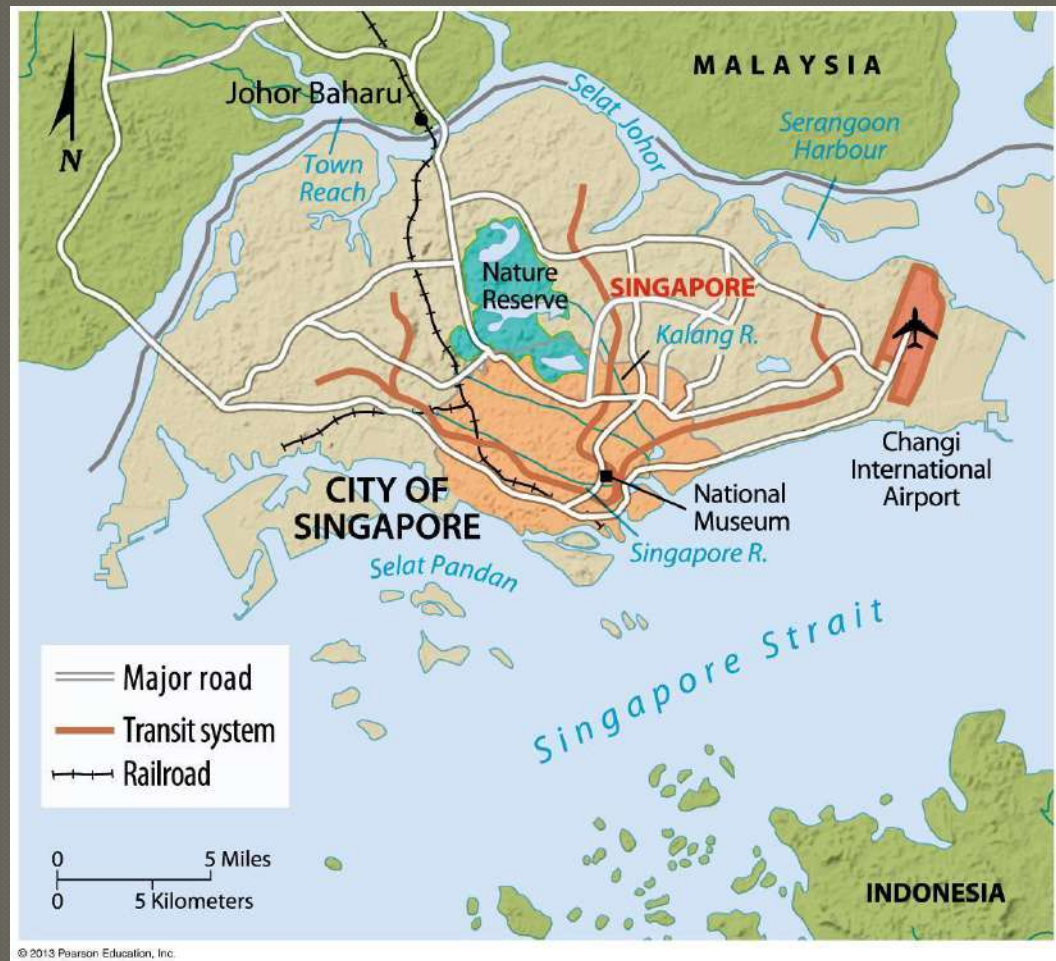
1. Situation helps us to find an unfamiliar place by comparing its location with a familiar one.
2. Situation helps us understand the importance of a location. For example, some places are important because they are accessible to other places due to their location.

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# 1.6 Places: A Unique Location

- Geographers can describe the location of a place by **site**, which is the physical character of a place. Important site characteristics include climate, water sources, topography, soil, vegetation, latitude, and elevation.



## SITE OF SINGAPORE

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# 1.6 Places: A Unique Location

- Sites can be modified by humans.





## 1.7 Regions: A Unique Area

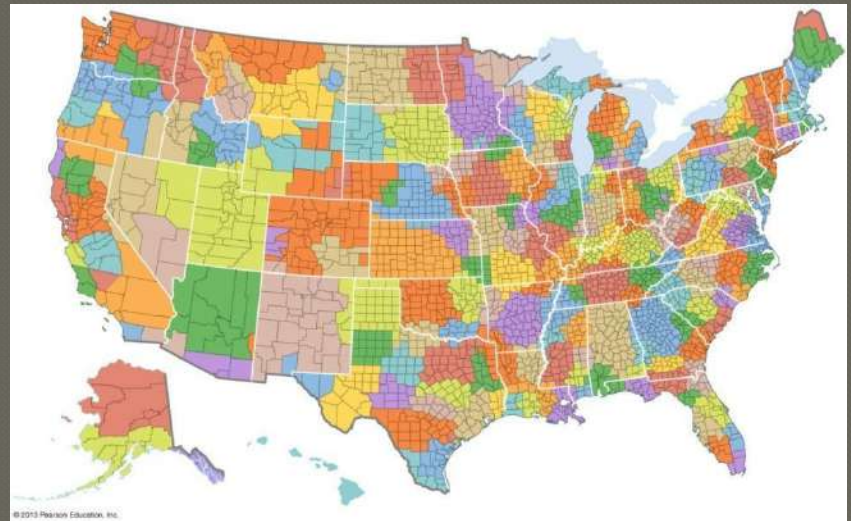
- An area on Earth defined by one or more distinctive characteristics is a **region**.
- A region derives its unified character through the **cultural landscape**-a combination of cultural features such as language and religion, economic features such as agriculture and industry, and physical features such as climate and vegetation.



## 1.7 Regions: A Unique Area

### ● Functional region

- AKA nodal region, is an area organized around a node or focal point.
- Geographers often use functional regions to display information about economic areas. The region's node may be a shop or service, and the boundaries of the region mark the limits of the trading area.



### ● Vernacular region

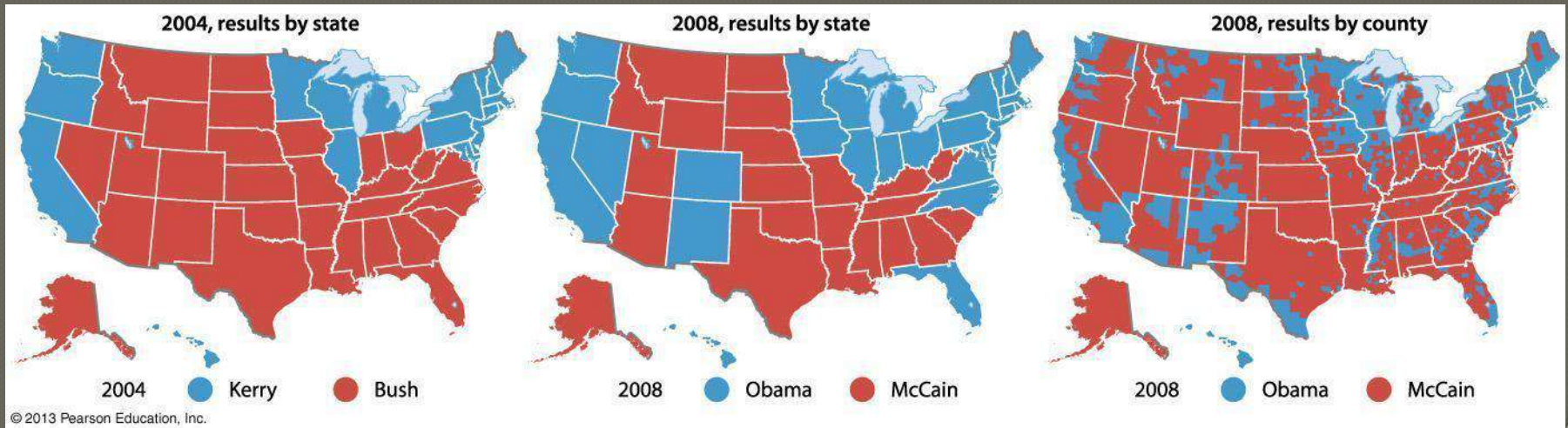
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# 1.7 Regions: A Unique Area

## Formal region

- AKA uniform or homogeneous region, is an area within which everyone shares in common one or more distinctive characteristics. The shared feature could be a cultural value such as a common language.
- Geographers typically identify formal regions to help explain broad global or national patterns, such as variations in religions and levels of economic development.

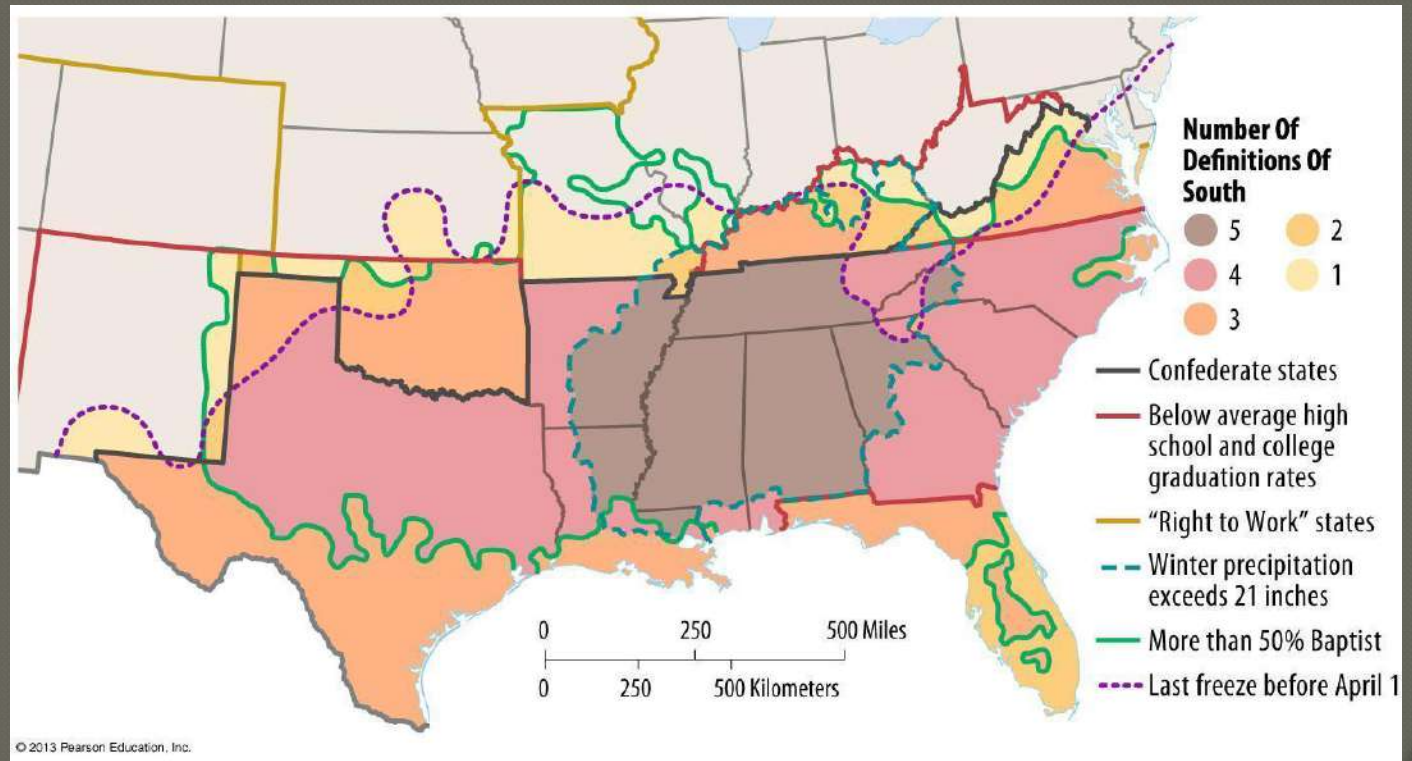




# 1.7 Regions: A Unique Area

## Vernacular Region

- This is also known as a perceptual region, and is a place that people believe exists as part of their cultural identity.
- Such regions emerge from people's informal sense of place rather than from scientific models developed through geographic thought.





# 1.8 Scale: Global and Local

- **Globalization**-a force or process that involves the entire world and results in making something worldwide in scope.
- **Globalization of the economy**
  - Most economic activities undertaken in one region are influenced by interaction with decision makers located elsewhere.
  - A transnational corporation conducts research, operates factories, and sells products in many countries, not just where its headquarters and principal shareholders are located.



CHAOYANG CENTRAL BUSINESS DISTRICT, BEIJING, CHINA



# 1.8 Scale: Global and Local

## ● Globalization of culture

- Geographers observe that increasingly uniform cultural preferences produce uniform “global” landscapes of material artifacts and of cultural values.
- Fast-food restaurants, service stations, and retail chains deliberately create a visual appearance that varies among locations as little as possible so that customers know what to expect regardless of where in the world they happen to be.
- Globalization requires a form of common communication, and the English language is increasingly playing that role.



GLOBALIZATION OF CULTURE

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### ● **Local diversity**

- Despite globalization, cultural differences among places persist.
- Human geographers understand that many contemporary social problems result from a tension between forces promoting global culture and economy on the one hand and preservation of local economic autonomy and cultural traditions on the other hand.



## 1.9 Space: Distribution of Features

- Spatial thinking is the most fundamental skill that geographers possess to understand the arrangement of objects across large surfaces.
- Geographers think about the arrangement of people and activities found in space and try to understand why those people and activities are distributed across space as they are.
- On earth as a whole, or within an area of Earth, features may be numerous or scarce, close together, or far apart. The arrangement of a feature in space is known as its **distribution**.



# 1.9 Space: Distribution of Features

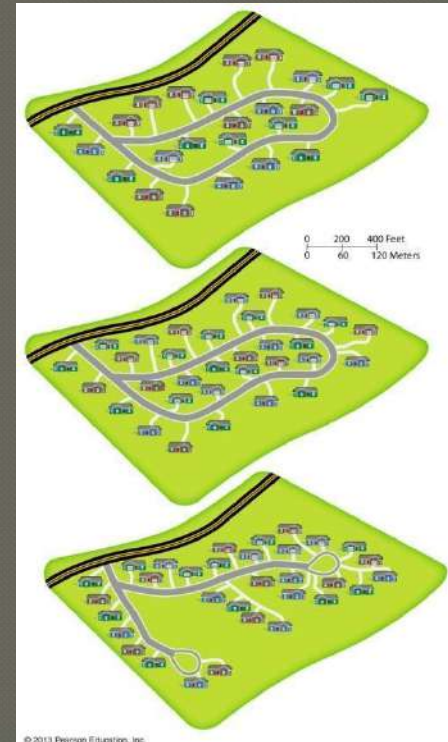
## DISTRIBUTION

### Properties of distribution

- **Density**- The frequency with which something occurs in space.
  - Russia has a much larger population than the Netherlands, but the Netherlands has a much higher density because its land area is much smaller.
- **Concentration**- The extent of a feature's spread over space.
  - If the objects in an area are close together, they are clustered; if relatively far apart, they are dispersed. To compare the level of concentration most clearly, two areas need to have the same number of objects and the same size area.
- **Pattern**- The arrangement of objects in space.
  - Some features are organized in a geometric pattern, whereas others are distributed irregularly.

The top plan for residential area has a lower density than the middle plan (24 houses compared to 32 houses on the same 30-acre piece of land).

The middle and lower plans have the same density (32 houses on 30 acres), but the distribution of houses is more clustered in the lower plan.





# 1.9 Space: Distribution of Features

The changing distribution of North American baseball teams illustrates the difference between **density** and **concentration**.



## DISTRIBUTION OF MAJOR LEAGUE BASEBALL TEAMS

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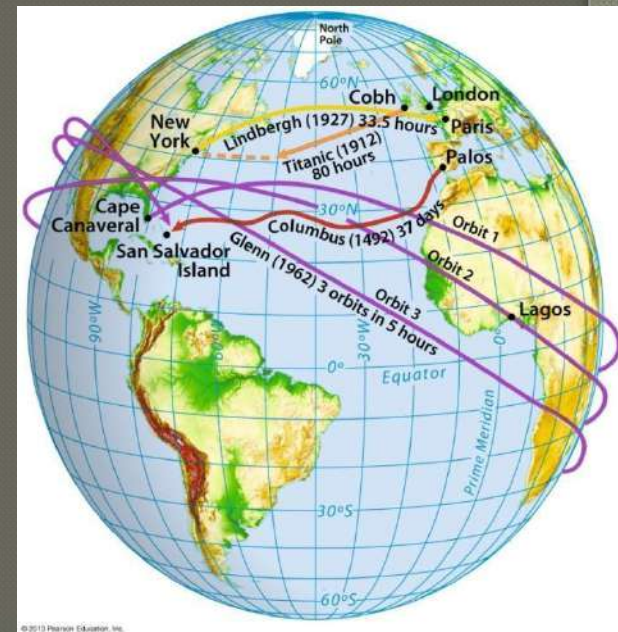
## ● Gender and ethnic diversity in space

- Differences in gender, family structure, ethnicity, and sexual preference can determine the use of space.
- In discerning changing gender roles, the geographer records and notes changes over space.



# 1.10 Connection: Interaction Between Places

- Today travel by motor vehicle or airplane is much quicker. More rapid connections have reduced the amount of time it takes to travel distance between places. Geographers use the term **space-time compression** to describe the reduction in the time it takes for something to reach another place.

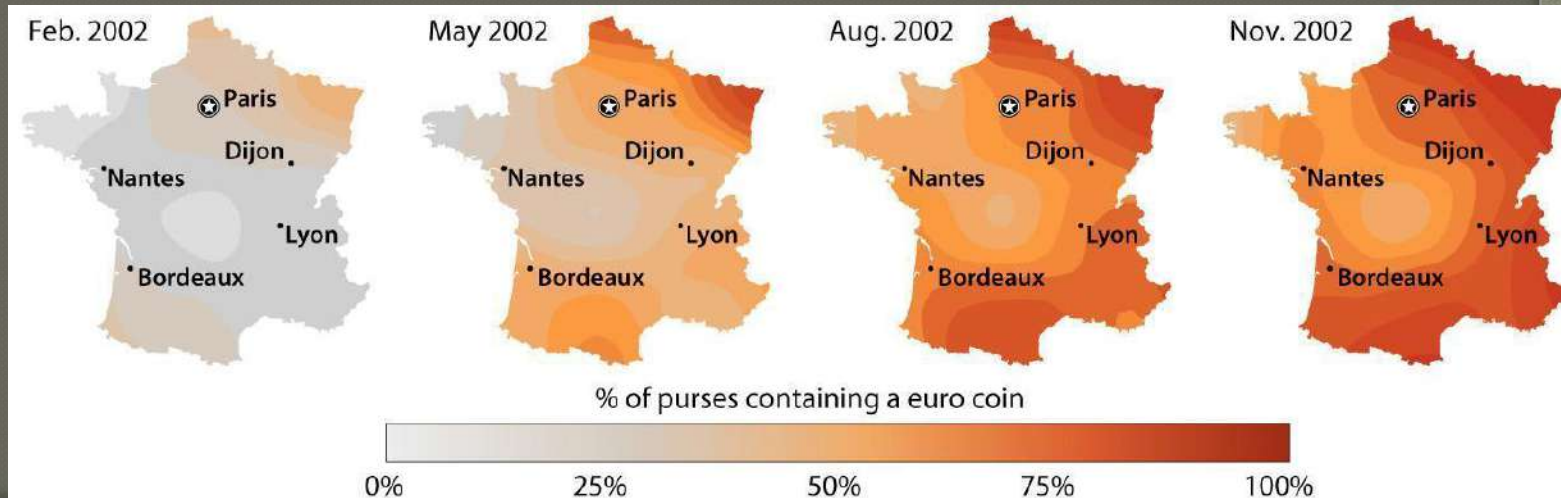




# 1.10 Connection: Interaction Between Places

## SPACE-TIME COMPRESSION

- **Diffusion**-The process by which a characteristic spreads across space from one place to another
- **Hearth**-The place from which an innovation originates
  - Increasing space-time compression of cultural diffusion because of technology
    - Something originates at a hearth or node and diffuses from there to other places. Geographers document the location of nodes and the process by which diffusion carries things elsewhere over time.
- **Relocation diffusion** is the spread of an idea through physical movement of people from one place to another.





# 1.10 Connection: Interaction Between Places

- **Expansion diffusion**-the spread of a feature from one place to another in an additive process. This expansion may result from one of three processes:
  - **Hierarchical diffusion**- the spread of an idea from persons or nodes of authority of power to other persons or places
    - Political leaders spreading ideas
    - Socially elite people spreading ideas
  - **Contagious diffusion**-the rapid, widespread diffusion of a characteristic throughout the population
    - Idea placed on the World Wide Web spread through contagious diffusion, because web surfers throughout the world have access to the same material simultaneously, and quickly.
  - **Stimulus diffusion**-the spread of an underlying principle.
    - Innovative features of Apple's iPhone and iPad systems have been adopted by competitors.



# 1.10 Connection: Interaction Between Places

- When places are connected to each other through a network, geographers say there is **Spatial interaction**.
  - The farther away one group is from another, the less likely the two groups are to interact
  - Distance decay**- Contact diminishes with increasing distance and eventually disappears.



SPATIAL INTERACTION: AIRLINE NETWORK

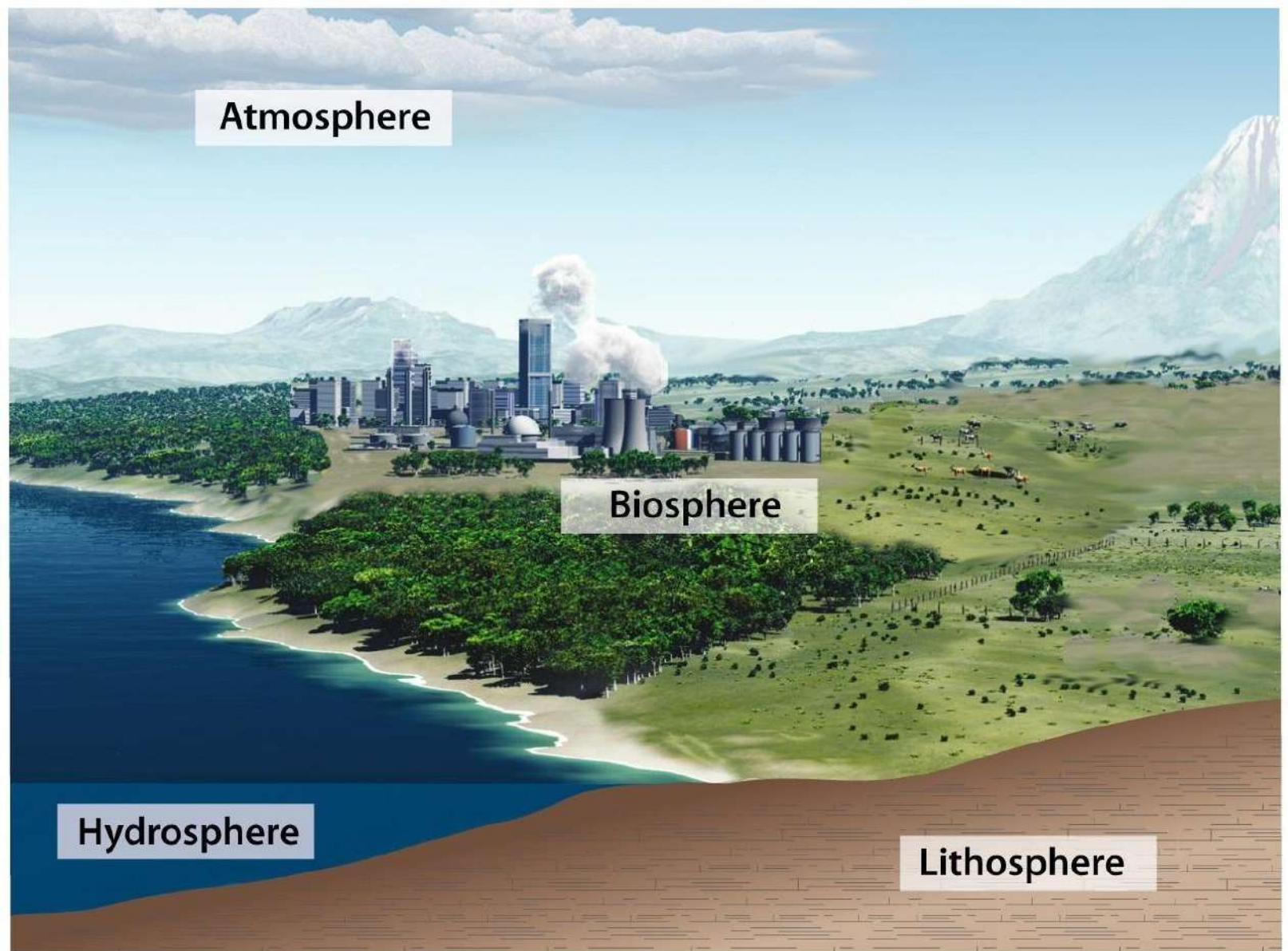


# 1.11 Earth's Physical Systems

- Geographers study natural processes in terms of four interrelated systems which are classified as either biotic or abiotic.
  - **Biotic**- system composed of living organisms.
  - **Abiotic**- system is composed of nonliving or inorganic matter.
- **Three of Earth's four systems are abiotic:**
  - **Atmosphere**- a thin layer of gasses surrounding Earth
  - **Hydrosphere**- all of the water on and near Earth's surface.
  - **Lithosphere**- Earth's crust and a portion of upper mantle directly below the crust.
- **One of the Earth's four systems is biotic:**
  - **Biosphere**-all living organisms on Earth, including plants and animals, as well as microorganisms.



# 1.11 Earth's Physical Systems





## ● Interactions in the biosphere

- **Ecosystem**- a group of living organisms and the abiotic spheres with which they interact.
  - **Ecology**- is the scientific study of ecosystems.
- Living organisms in the biosphere interact with each of the three abiotic systems:
  - The lithosphere is where most plants and animals live and where they obtain food and shelter.
  - The hydrosphere provides water to drink, and physical support for aquatic life.
  - The atmosphere provides the air for animals to breathe and protects them from the sun's rays.



# 1.12 Human-Environment Interaction

- **Cultural ecology**

- The geographic study of human-environment relationships

- **Environmental determinism**-an approach where geographers argued that the physical environment caused social development.

- To explain relationships between human activities and the physical environment, modern geographers reject environment determinism in favor of possibilism.

- **Possibilism**- the physical environment may limit some human actions, but people have the ability to adjust to their environment.

- People learn that different crops thrive in different climates; people choose the crops they grow in part by considering their environment.



## ○ Modifying the Netherlands



### Modifying the environment

- Technology facilitates
- **Polder**- a piece of land that is created by draining water from an area.

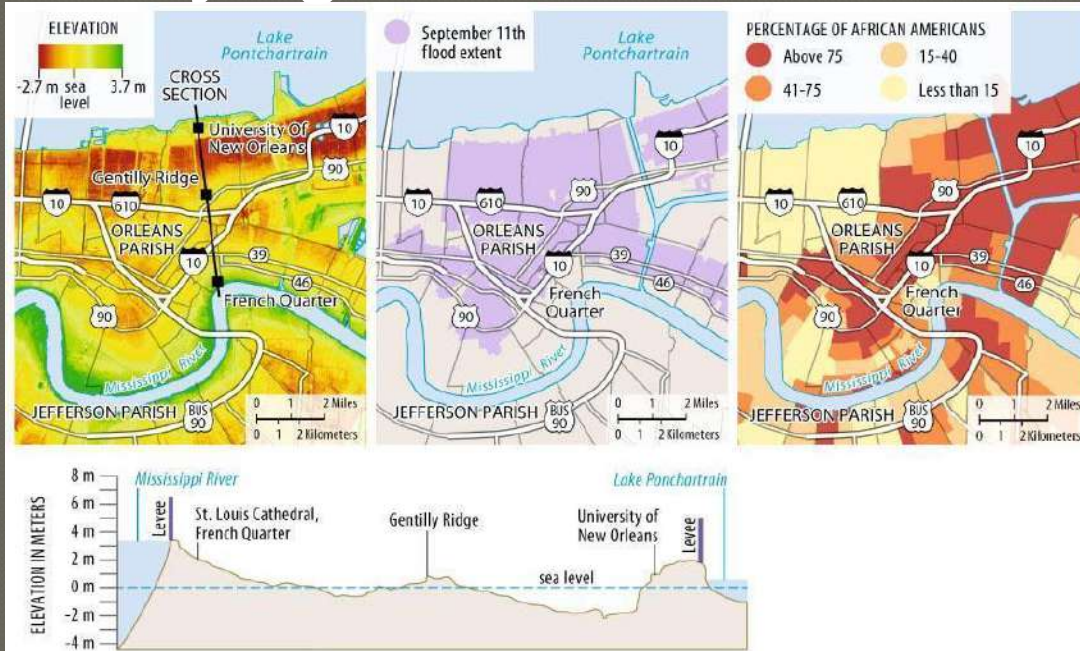
MODIFYING THE ENVIRONMENT IN THE NETHERLANDS

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# 1.12 Human-Environment Interaction

## Modifying Louisiana



In an effort to protect New Orleans and other low lying land from flooding, government agencies have constructed a complex system of levees, dikes, seawalls, canals, and pumps.

**MODIFYING THE ENVIRONMENT IN SOUTHERN LOUISIANA**



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## ● Key Questions

- How do geographers describe where things are?
- Why is each point on Earth unique?
- How are different locations interrelated?
- How do people relate to their environment?