AP Human Geography

Chapter 1
Basic Concepts

AP HuG- Mrs. Kelley

Chapter 01

Key Issue 1:

How Do Geographers Describe Where Things Are?

Key Issues in Chapter 01

- How do geographers describe where things are?
- Why is each point on Earth unique?
- Why are different places similar?
- Why are some human actions not sustainable?

How Do Geographers Describe Where Things Are?

- *Geography* is the study of where things are found on Earth's surface and the reasons for the locations.
- *Human geography* asks two simple questions…
  1. **Where** are people and activities found on Earth?
  2. **Why** are they found there?

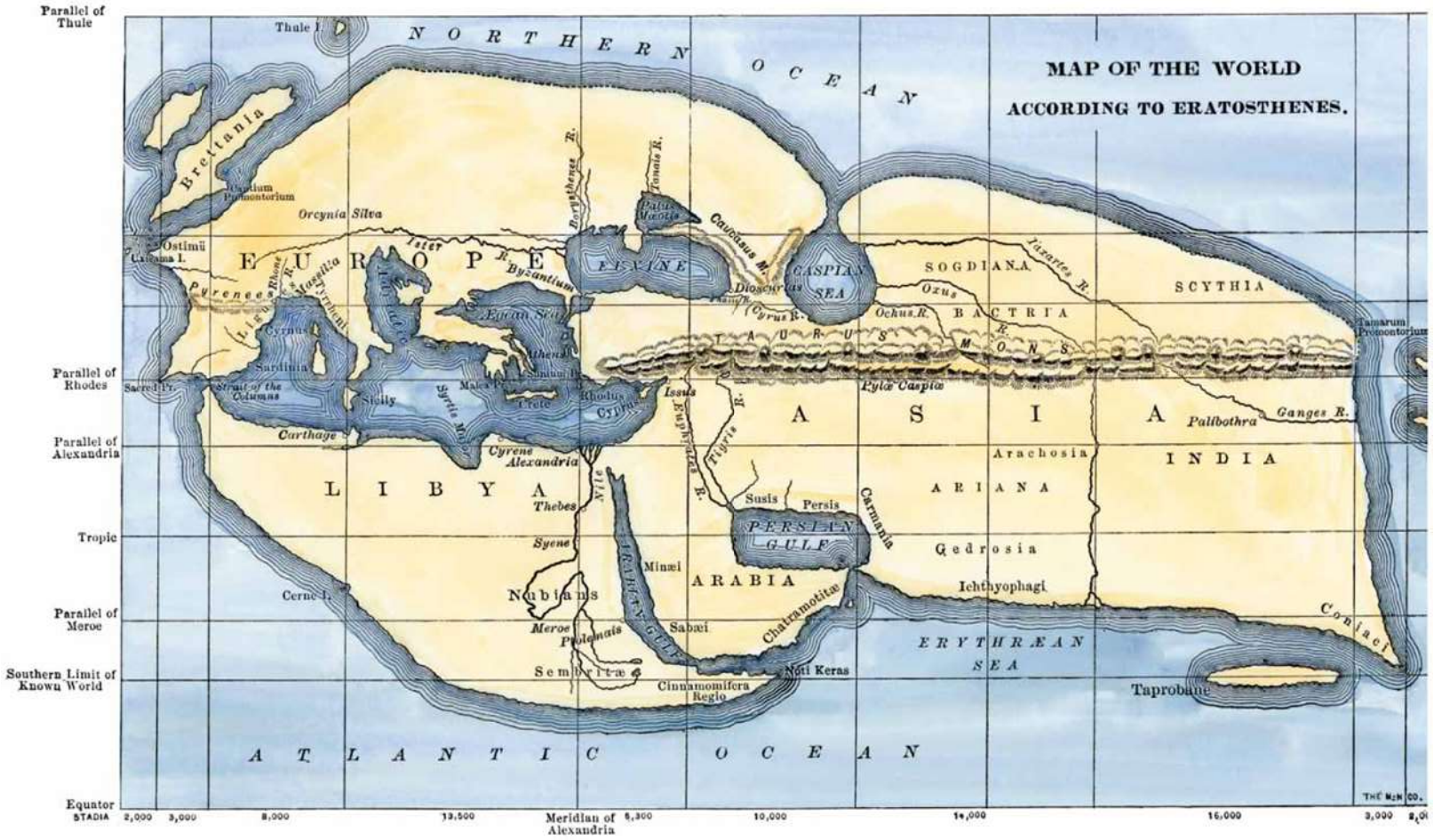
Maps

- A *map* is a two-dimensional or flat-scale model of Earth's surface, or a portion of it.
- ***Cartography*** is the science of mapmaking.
- Maps serve two purposes…
  1. As a reference tool to identify an object's absolute and relative location.
  2. As a communications tool to convey the distribution of human activities or physical features.

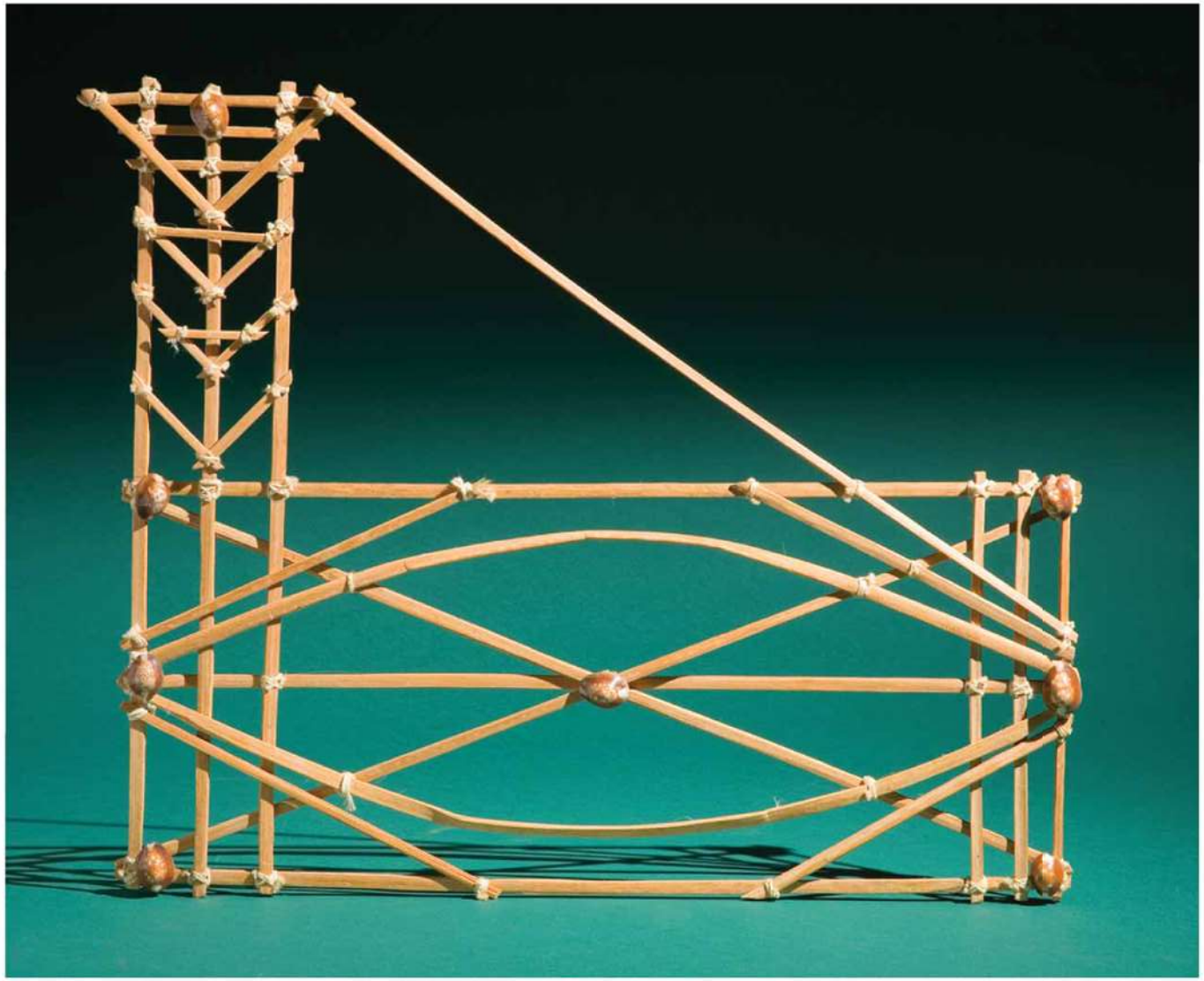
Early Mapmaking

- Earliest maps were reference tools—simple navigation devices to show a traveler how to get from Point A to Point B.
- First world map prepared by Eratosthenes(276–194 B.C.)
  - Improvements to world map later made by Ptolemy.
  - After Ptolemy, advancements in cartography primarily made outside of Europe by Chinese and Islamic world.
    - Mapmaking revived during the Age of Exploration and Discovery.

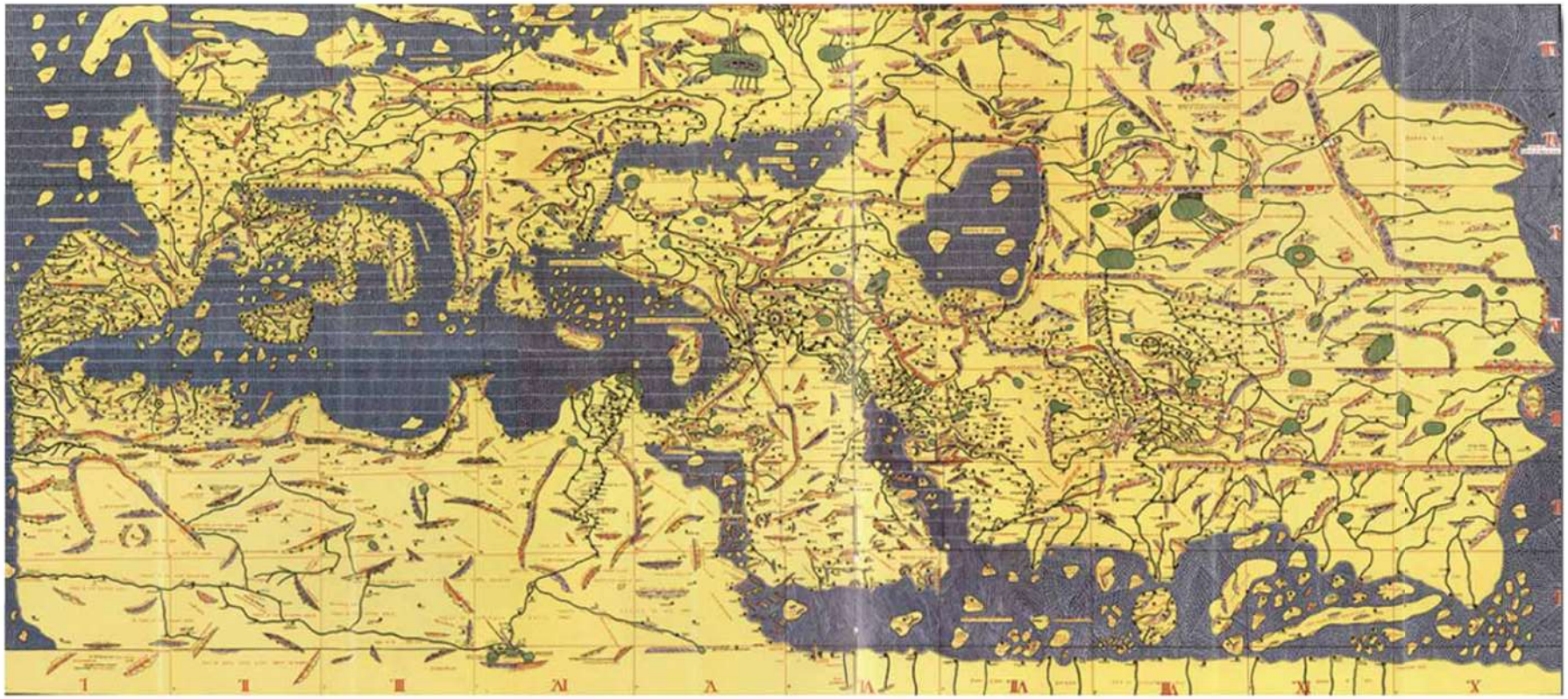
World Map - Eratosthenes



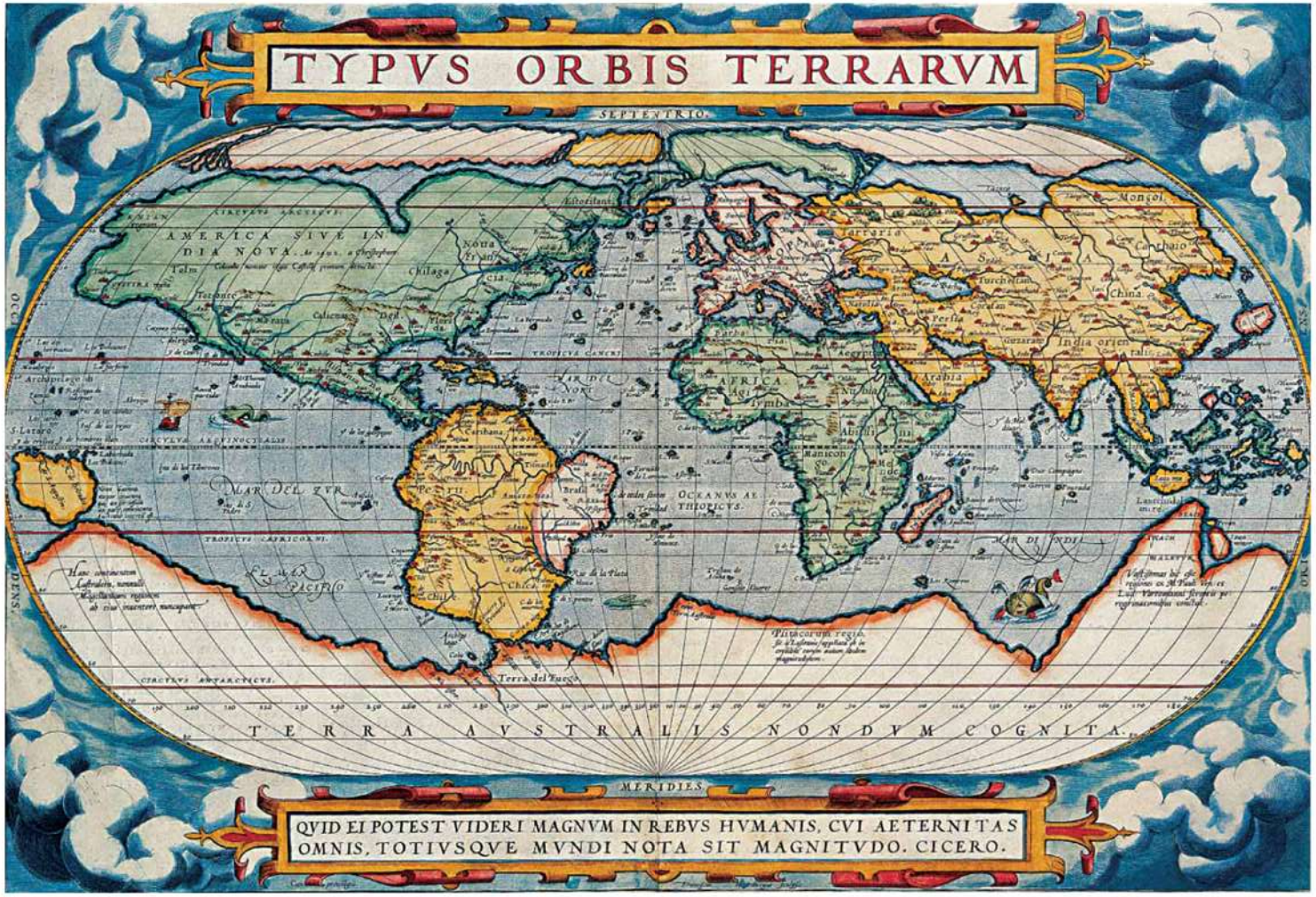
Is this a “map?”



World Map – Muhammad al-Idrisi



World Map – Ortelius

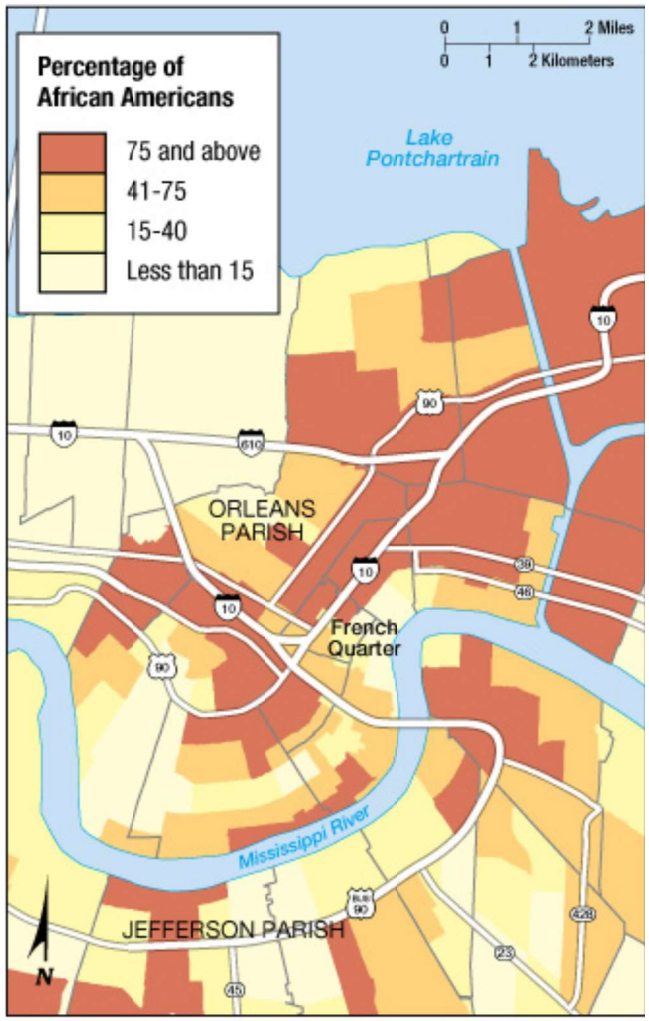


Mapping a disaster – Hurricane Katrina

Using maps to communicate complex geographic phenomena

Despite efforts to prevent flooding Hurricane Katrina Flooded 80% of New Orleans

Mapping a disaster – Hurricane Katrina



Katrina's victims

Who was affected by Katrina?

What other factors contributed to the "inequality" of destruction?

Refer to page 7

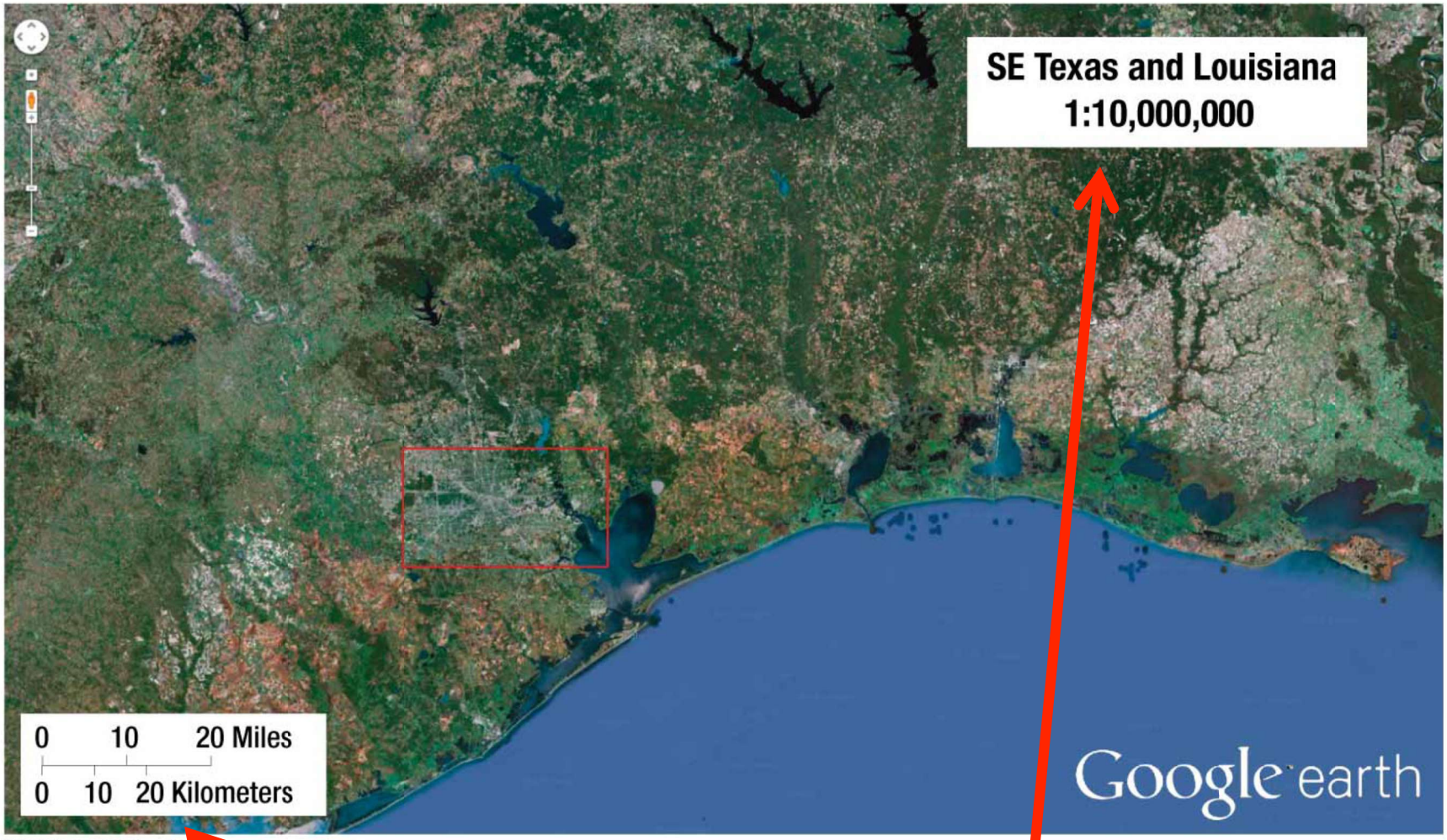
Map Scale

- Level of detail and the amount of area covered on the map depend on its *map scale*.
  - Relationship of a feature's size on a map to its actual size on Earth
- Map scale is presented in three ways…
  1. Ratio or Fraction Scale: Ex. 1:24,000 or 1/24,000
     - Number on left is one unit of distance, while number on right represents same unit of distance on Earth's surface.

Map Scale

2. Written Scale: Ex. 1 inch equals 1 mile
   - Number on left is one unit of distance, while number on right represents a different unit of distance on Earth's surface.
3. Graphic Scale: Usually consists of a bar line marked to show distance on Earth's surface
   - Distance between two points can be overlaid on the scale bar to determine the distance on Earth's surface.

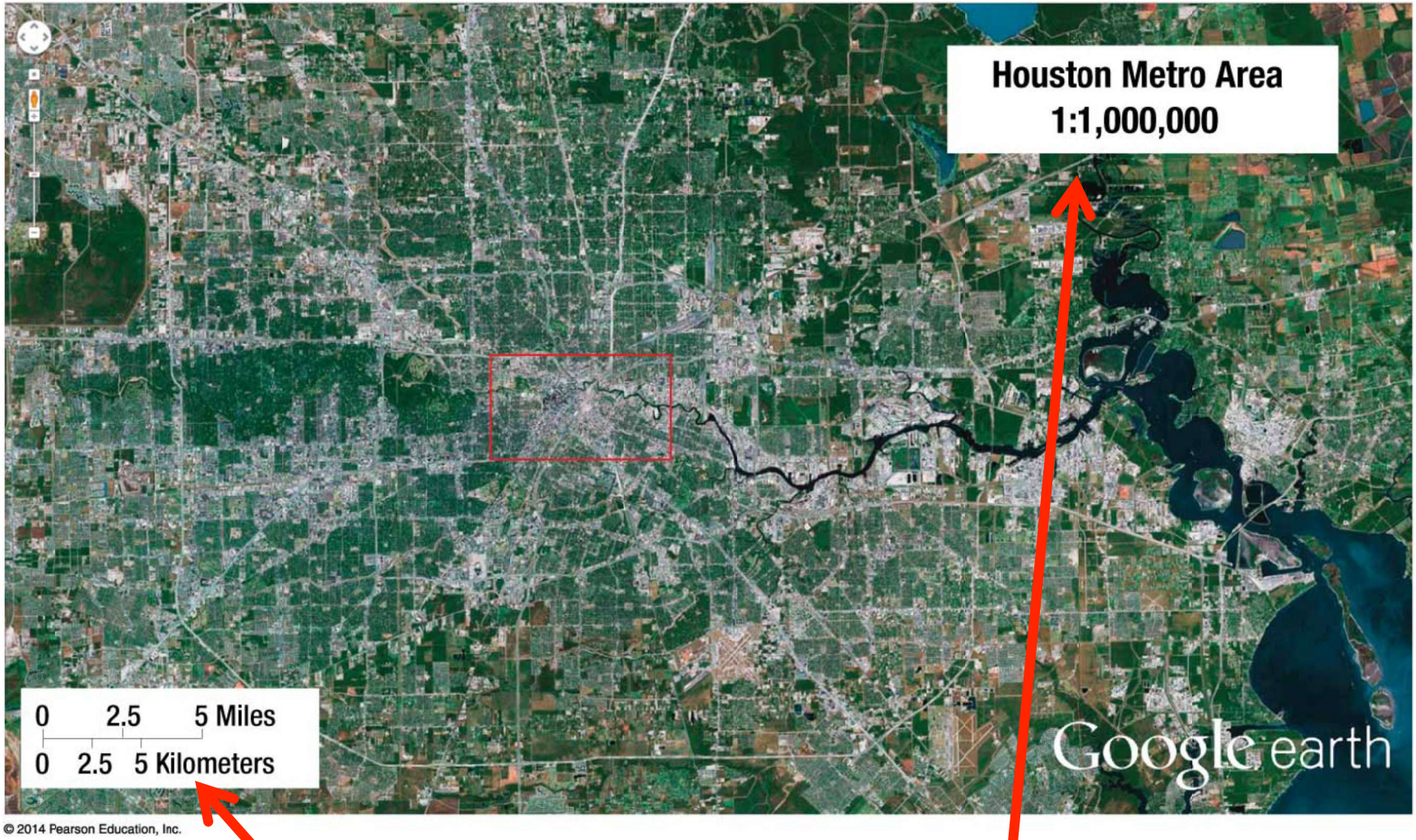
Map Scale



Graphic scale

Ratio or fraction scale

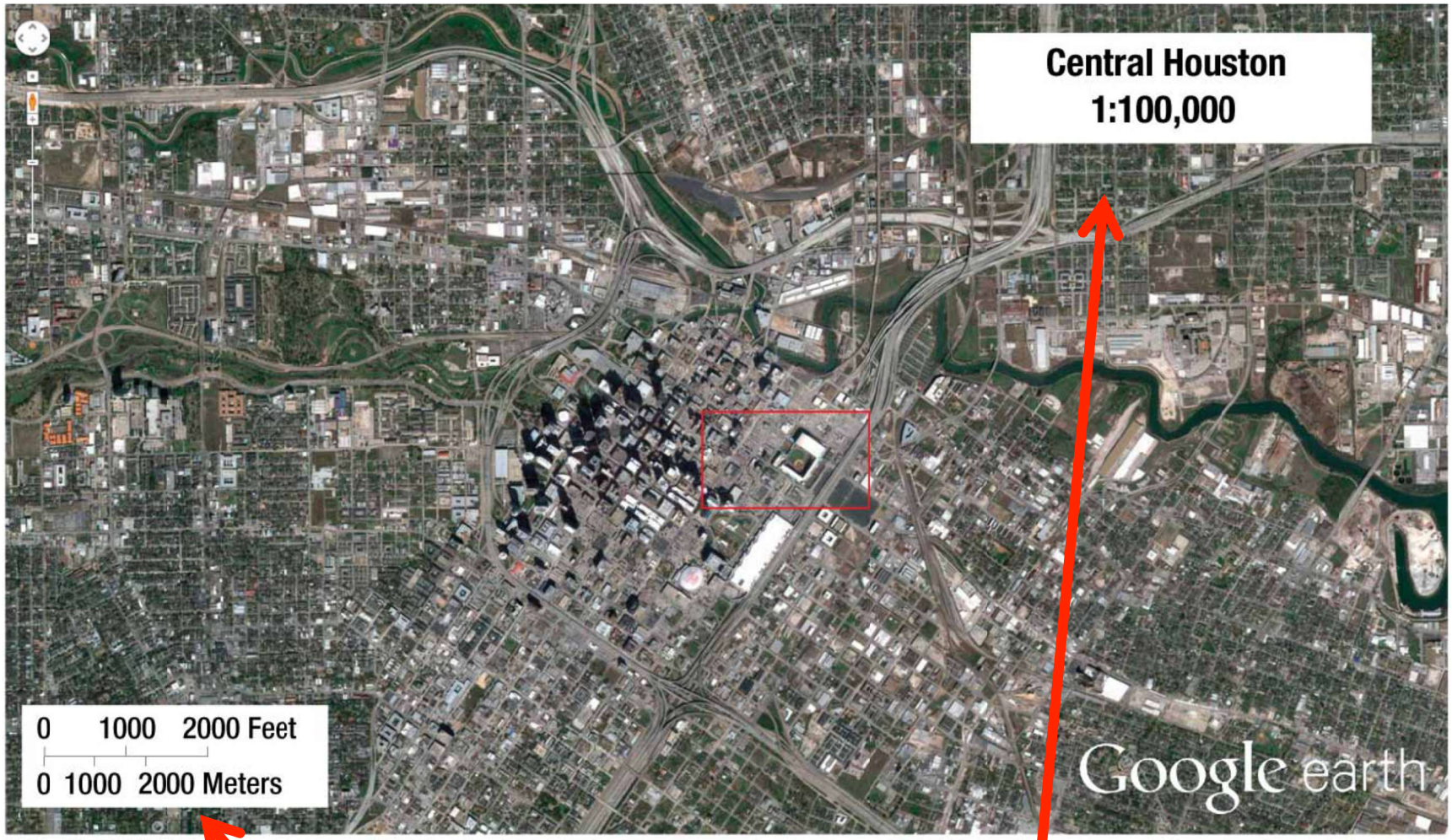
Map Scale



Graphic scale

Ratio or fraction scale

Map Scale



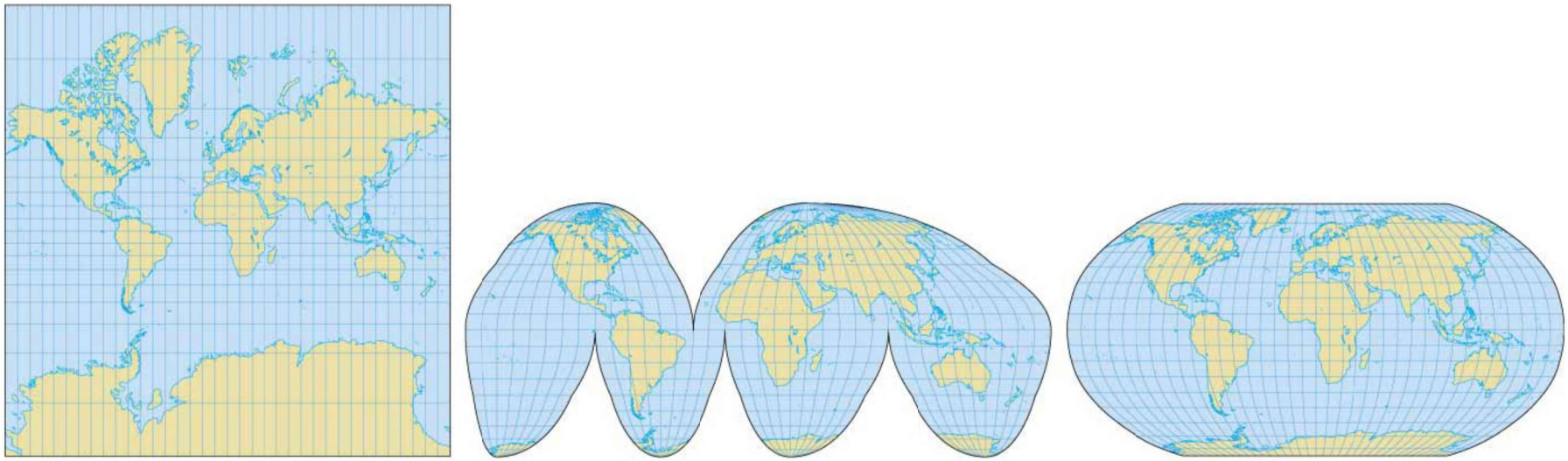
Graphic scale

Ratio or fraction scale

Projection

- Scientific method of transferring locations on Earth's surface to a flat map is called *projection.*
- Earth's spherical shape causes distortion when drawing it on a flat piece of paper.
  - Four types of distortion
    1. *Shape* of an area can be distorted.
    2. *Distance* between points may become increased or decreased.
    3. *Relative size* of different areas can be altered.
    4. *Direction* between points can be distorted.

Projection



Mercator Projection

Goode Homolosine Projection

Robinson Projection

Compare Greenland and South America:

Which land mass is actually larger?

Geographic Grid

- Geographic grid is a system of imaginary arcs drawn in a grid pattern on Earth's surface.
  - ***Meridians*** are arcs drawn between the North and South poles. Each is numbered, according to a system known as *longitude.*
    - Values range from 0º (*prime meridian)* to 180º east or west longitude.
  - ***Parallels*** are arcs drawn parallel to the equator and at right angles to meridians. Each is numbered, according to a system known as *latitude.*
    - Values range from 0º (equator) to 90º north or south.

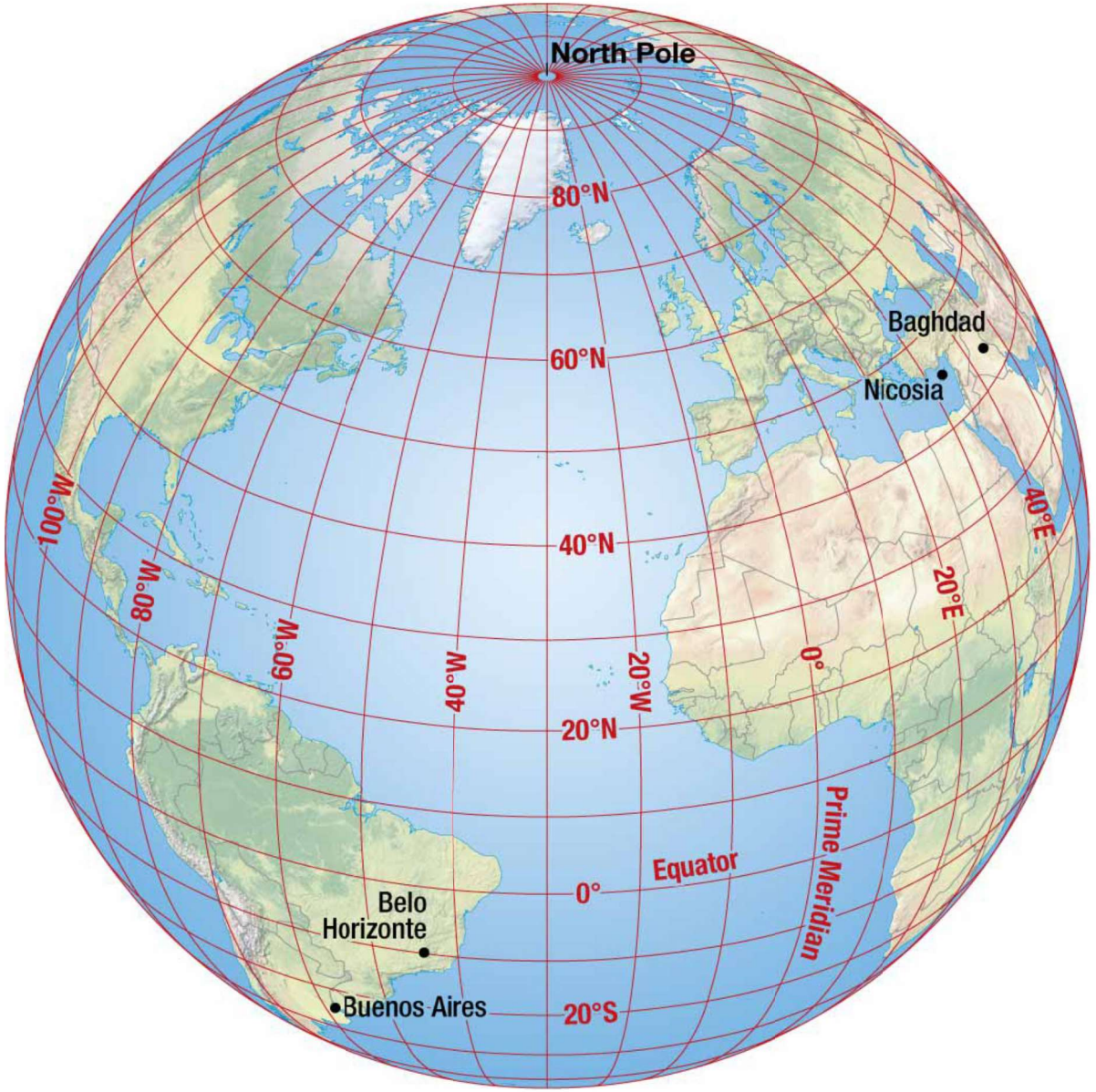
Geographic Grid

Identify:

0^0 Longitude

0^0 Latitude

180^0 Longitude



Geographic Grid

- Points on Earth's surface can be communicated by referencing points of latitude and longitude intersection.
  - Ex. Denver, Colorado's location is 40º north latitude and 105º west longitude.
- Further accuracy can be achieved by dividing each degree into 60 minutes and each minute into 60 seconds.
  - Ex. Denver, Colorado's state capital building is 39º42'2" north latitude and 104º59'04" west longitude.

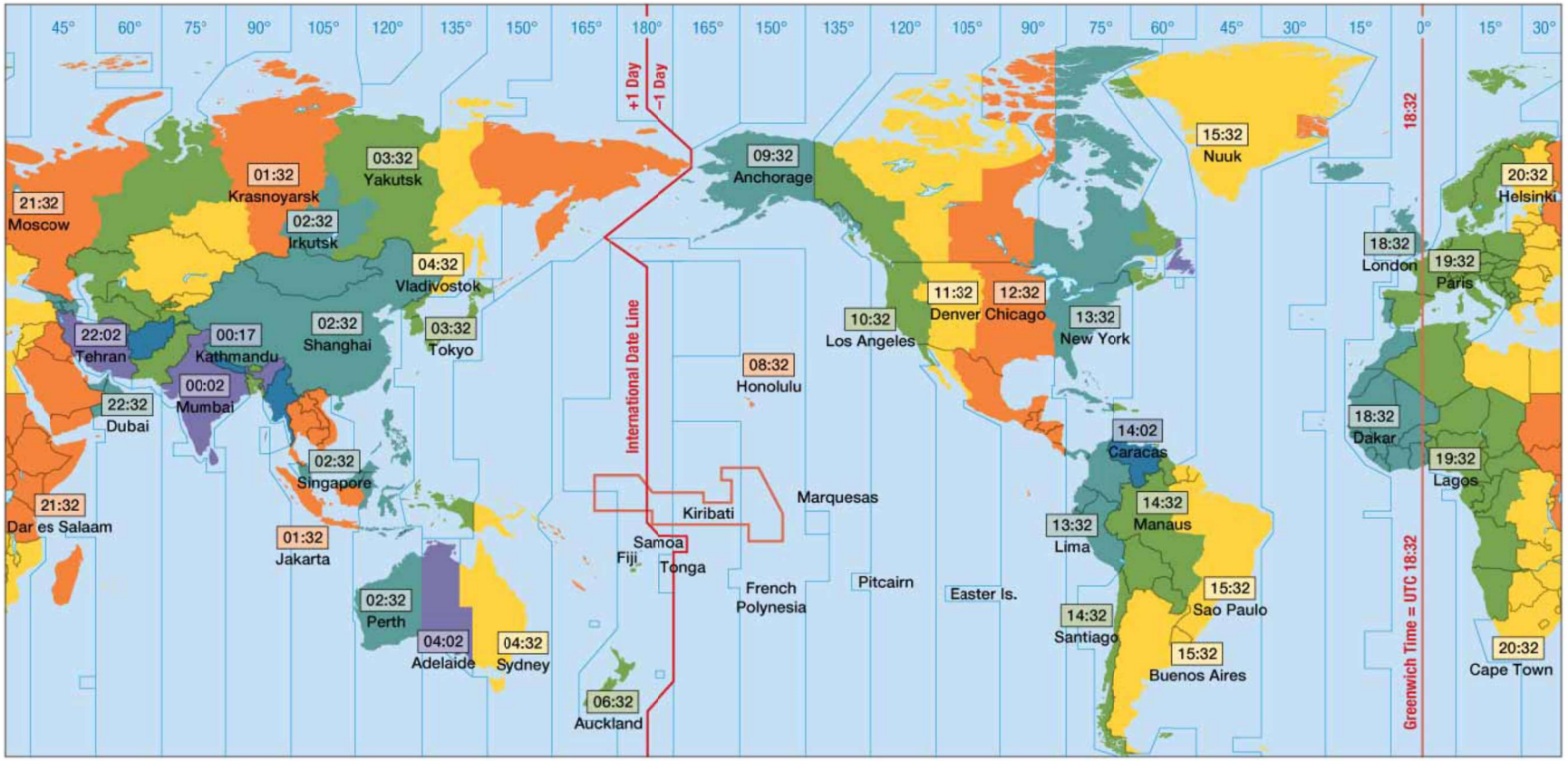
Telling Time

- Earth as a sphere is divided into 360º of longitude.
  - Divide 360º by 24 time zones (one for each hour of day) equals 15º.
    - Each 15º band of longitude is assigned to a standard time zone.
- *Greenwich Mean Time (GMT)* is…
  - Located at the prime meridian (0º longitude).
    - Passes through Royal Observatory at Greenwich, England
  - Master reference time for all points on Earth.

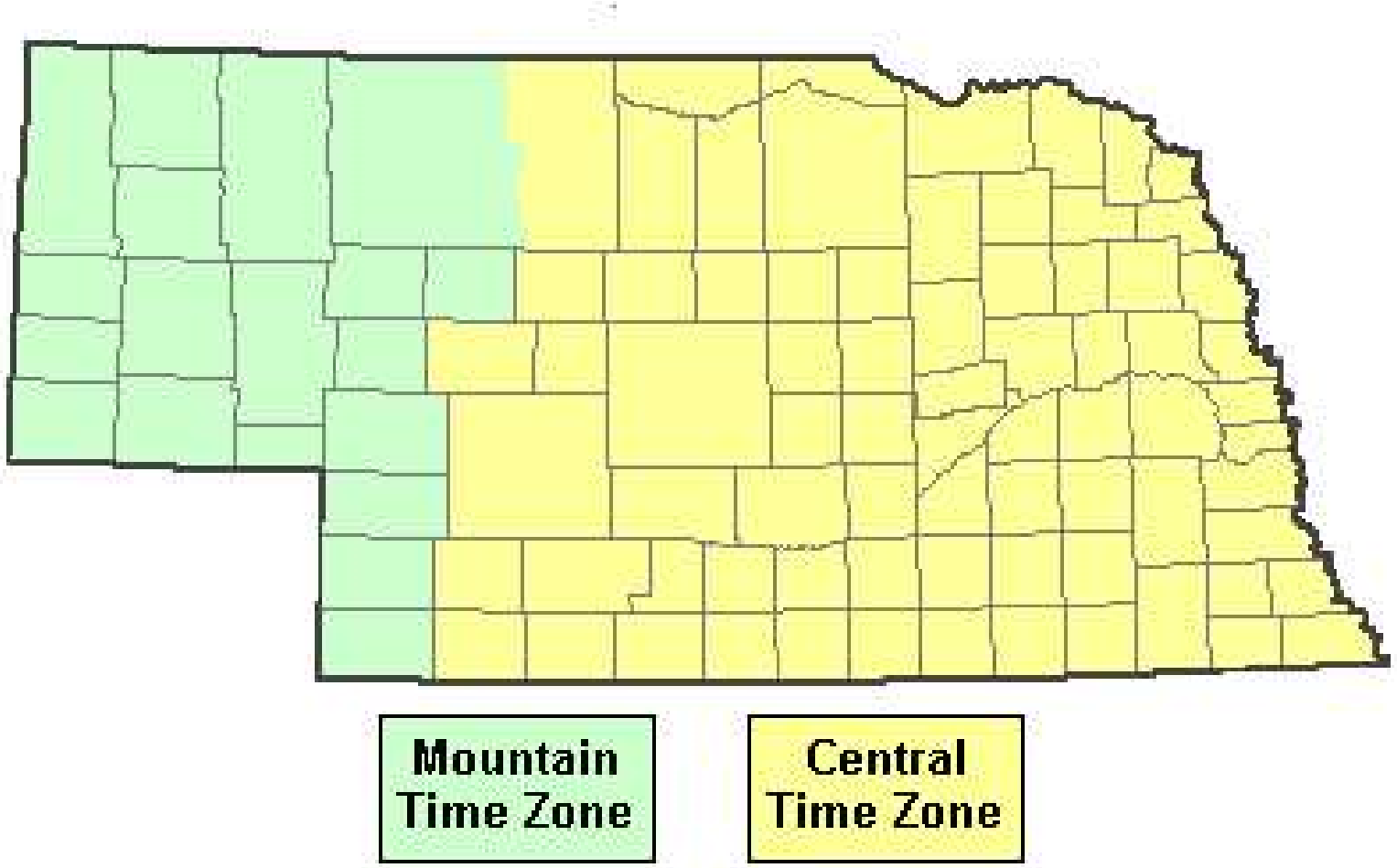
Telling Time

- The *International Date Line* is…
  - Located at 180º longitude.
    - Position deviates from 180º longitude at times to accommodate various nearby nation-states.
  - Point you move the clock back 24 hours (one day), if you are heading eastward toward America.
  - Point you move the clock ahead 24 hours (one day), if you are heading westward toward Asia.

Telling Time – World Time Zones



Nebraska Time Zones



What???? No straight lines? What the heck?

Contemporary Tools

- Geographic *Information Science (GIScience)* involves the development and analysis of data about Earth acquired through satellite and other electronic information technologies.
- Collecting Data: Remote Sensing
  - Acquisition of data about Earth's surface from a satellite orbiting Earth or from other long distance methods is known as remote-sensing.

Contemporary Tools

- Collecting Data: Remote Sensing Cont'd.
  - After sensors scan Earth's surface, the individual pixels are transmitted to a receiving station on Earth where a computer assembles each of them into an image.
    - Map created using remotely sensed data is essentially a grid of rows and columns of pixels; each representing the radiation being reflected on Earth's surface at a specific point.

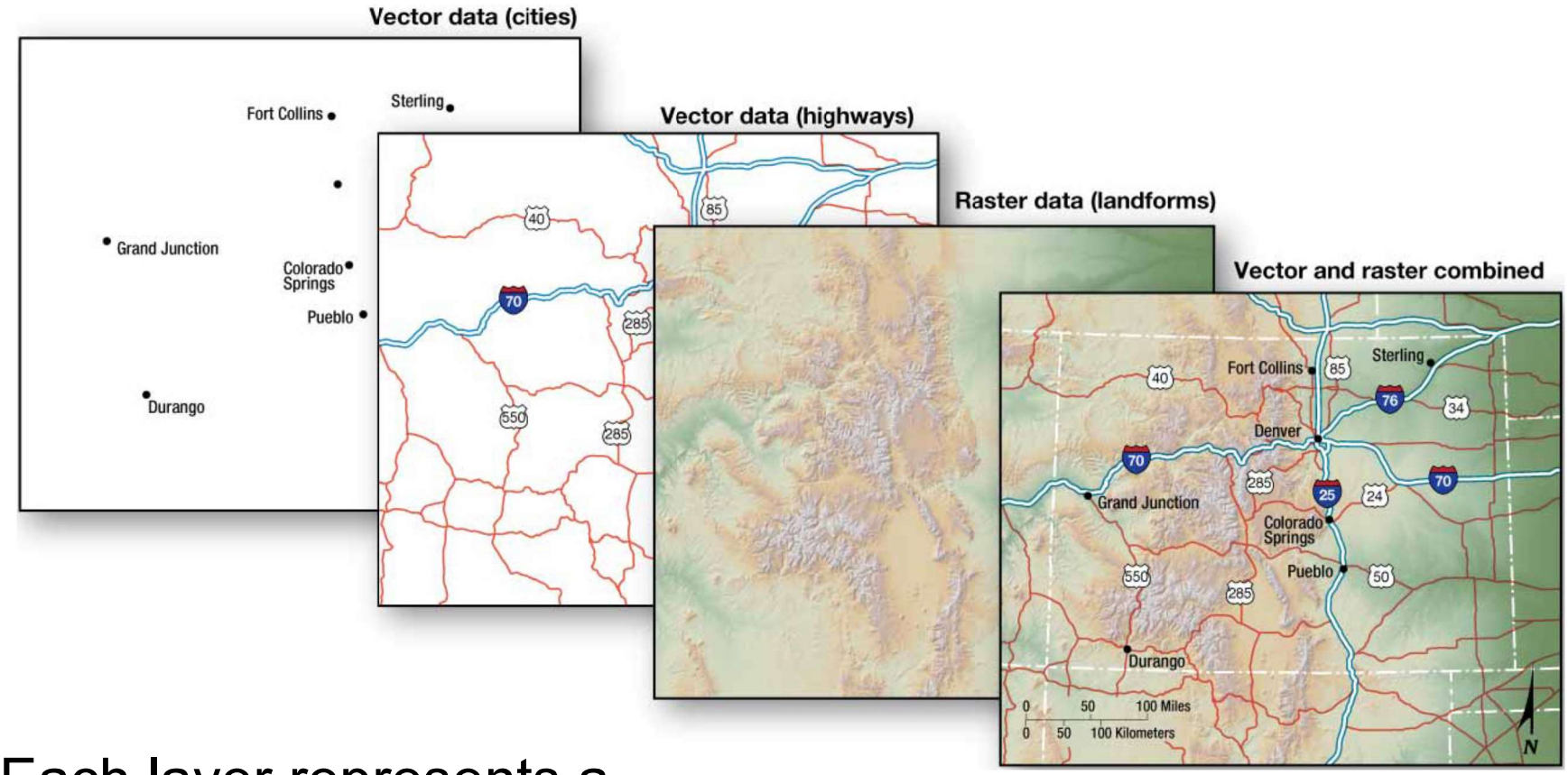
Contemporary Tools

- Pinpointing Locations: GPS
  - *Global Positioning System (GPS)*
    - System that accurately determines the precise position of something on Earth
    - GPS in the U.S. includes three elements
      1. Satellites placed in predetermined orbits
      2. Tracking stations to monitor and control satellites
      3. Receiver that can locate at least four satellites, figure out its distance from each, and use the information to calculate its precise location
    - Applications
      - Turn-By-Turn directions in vehicles
      - Navigational aid to pilots and ship captains
      - Provide location for social media applications in a smartphone

Contemporary Tools

- Layering Data: GIS
  - A *geographic information system* (GIS) is a computer system that captures, stores, queries, analyzes, and displays geographic data.
  - Data are stored in layers.
  - Layers can be compared to show relationships among different kinds of information.
  - Data can be overlaid in one GIS from a variety of different sources through a process known as a *mashup.*

GIS Layering



Each layer represents a different piece of information

Chapter 01

Key Issue 2:

Why is Each Point on Earth Unique?

Why Is Each Point on Earth Unique?

- Location can be identified in three ways.
  1. Place Names **Place (topos) Names (nym)**
     - A *toponym* is the name given to a place on Earth.
       - Names derived from people of prominence, religious affiliation, physical features, or origins of its settlers
  2. **Site**
     - ***Site*** is the physical character of a place.
       - Characteristics include climate, water sources, topography, soil, vegetation, latitude, and elevation.
  3. **Situation**
     - ***Situation*** is the location of a place relative to other places.