Unit 1 – The Basics of Geography

Chapter 1
The Five Themes of Geography
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Geography comes from the Greek word geographia, which means to describe the earth.

**Geography** is the study of the distribution and interaction of physical and human features on the earth.
The Five Themes of Geography

**Location**
- In latitude and longitude
- In relation to another place

**Place**
- Physical features
- Human features

**Region**
- United by similar physical conditions
- United by common cultural traits

**Movement**
- Travel from place to place
- Exchange of goods and ideas

**Interaction**
- People adapt to the environment
- People change the environment
What are the five themes of geography?
1. Location—Where is it?
2. Place—What is it like?
3. Region—How are places similar or different?
4. Movement—How do people, goods, and ideas move from one location to another?
5. Human-Environment Interaction—How do people relate to the physical world?
Location

Geographers describe location in two ways...

**Absolute location** is the exact place on earth where a geographic feature is found.

**Relative location** describes a place in comparison to other places around it.
Bennettsville is located at
34°37′17″N 79°41′5″W / 34.62139°N 79.68472°W / 34.62139; -79.68472
The relative location of Sullivan’s Island is that it is between the Isle of Palms and Charleston.
Location

A grid system of imaginary lines are used to place something exactly on the earth’s surface. **Hemisphere** is half of the globe or earth.
Northern Hemisphere of the planet Earth
Location

The **equator** is the imaginary line that divides the north and south hemispheres.

The **prime meridian** is the imaginary line diving the earth east to west. The line runs through Greenwich, England.
Location

**Latitude Lines** are a set of imaginary lines that run parallel to the equator, and that are used in locating places north or south. The Equator is labeled the zero-degree line for latitude.
Lines of Latitude

A set of imaginary lines that run parallel to the equator, and that are used in locating places north or south. The equator is labeled the zero-degree line for latitude.
Location

**Longitude lines** are a set of imaginary lines that go around the earth over the poles, dividing it east and west. The prime meridian is labeled the zero-degree line for longitude.
Longitude Lines

Longitude lines are a set of imaginary lines that go around the earth over the poles, dividing it east and west. The prime meridian is labeled the zero-degree line for longitude.
Place

What is it like?
The theme of place includes the physical features and cultural characteristics of a location. All locations on earth have features that set them apart, such as climate, landforms, and vegetation.
Region

How are places similar or different?

A region is an area of the earth’s surface with similar characteristics.

Geographers categorize regions in three ways: formal, functional, and perceptual regions.
Region

A formal region is defined by a limited number of related characteristics.

Examples of formal regions: The United States and Canada/Europe/Africa/East Asia.
Region

Functional Regions are organized around a set of interactions and connections between places. Example: a city and its suburbs
Functional Regions have a connection or connections.

A city and its suburbs are a functional region. People get jobs in the cities but live in the suburbs near the cities.

What connects cities and suburbs? Highways, commuter railroads, subways, and bus lines take people back and forth between a city and its suburbs.
Region

Perceptual Regions are regions in which people perceive, or see, the characteristics of the region in the same way.
Region

An example of perceptual region would be the Midwest of the United States.

People may perceive differently where a perceptual region begins. Some people believe the Midwest begins in Ohio. Others believe the region begins in the middle of Illinois.
Human-Environment Interaction

How do people relate to the physical world?

Human-Environment Interaction takes a look at how humans relate to their environment.
Human-Environment Interaction

How is this picture different from...
Human-Environment Interaction

...this picture? Are there any similarities?
Human-Environment Interaction

People learn to use what their environment gives them, and they learn to change that environment to meet their needs.

Some people may look at a hot, sunny climate near a body of water and use it for recreational activities.

Others may see a hot, sunny climate near a body of water as a great place for growing citrus, olive, or grape crops.
How do people, goods, and ideas move from one location to another location?

This question refers to movement.

There are three ways to look at movement via distance:
- linear distance
- time distance
- psychological distance
Movement

Linear Distance is how far across the earth a person, an idea, or a product travels.

Here is a map of the Great Silk Road Trade Route. This is an example of linear distance. In this case, the product silk traveled from China to destinations of the then known world.

Physical geography can affect linear distance by forcing a shift in a route to avoid impassable land or water.
Time distance is the amount of time it takes for a person, an idea, or a product to travel. Modern inventions have shortened time distances. It is painfully apparent that a horse-drawn carriage is slower than a modern van.
Movement

Psychological Distance is the way people view distance. Studies show that, as we become familiar with a place, we think it is closer than it actually is. Less familiar places seem to be further away.

Psychological distance may influence decisions about many different human activities.
The Geographer’s Tools

Around 255 B.C., Eratosthenes drove a stake into the ground at the mouth of the Nile River in Alexandria, Egypt. Then then noted the angle of the shadow cast by the stake. Meanwhile, another person drove a stake into the ground at Syene, Egypt. This stake cast no shadow.

Later, Eratosthenes calculated the circumference of the earth using the angle of the first shadow and the distance between Syene and Alexandria. He was only off about 15%, which is a remarkable accomplishment given the simple tools Eratosthenes used.

Eratosthenes was one of the earliest geographers to use tools and critical thinking to measure and describe the earth.

What are the tools in a geographer’s toolbox?
A geographer’s tools include maps, globes, and data that can be displayed in a variety of ways.

A map’s function is to show locations of places, landforms, and bodies of water, and where they are in relation to other parts of the earth.

Two or Three dimension tools

**Globe** – a three-dimensional representation of the earth.

**Map** – two-dimensional graphic representation of selected parts of the earth’s surface.

Advantage of a map – it is easier to carry than a globe.

Disadvantage of a map – distortion occurs as the earth’s surface is flattened to create the map.
The Geographer’s Tools

**Cartographer** – Mapmaker

A cartographer can reduce some types of distortion in maps by using different types of map projections.

**Map Projection** – a way of drawing the earth’s surface that reduces distortion caused by presenting a round earth on flat paper.

What are the three types of maps?
General reference maps
Thematic maps
Navigational maps

One type of general reference map is called a topographic map, which is a representation of natural and man-made features on the earth.

Topographic map of Greenland
The Geographer’s Tools

**Thematic maps** emphasize specific kinds of information, such as climate or population density.

The thematic map to the right shows the languages and minority religions of India.
The Geographer’s Tools

**Navigation maps** are used by sailors and pilots.
The Geographer’s Tools

The Science of Mapmaking

A cartographer decides what type of map to create by considering how the map will be used. Keeping that purpose in mind, he or she then determines how much detail to show and what size the map should be.

**Surveying** – The first step in making a map is to complete a field survey. Surveyors observe, measure, and record what they see in a specific area.

Remote sensing, or the gathering of geographic information from a distance by an instrument that is not physically in contact with the mapping site, is done today. These data are gathered primarily by aerial photography or by satellites. The information is recorded and converted to a grey image. Cartographers use the data and software to construct maps.

Types of data:
- Elevation
- Differences in land cover
- Variations in temperature
The Geographer’s Tools

Satellites are relied upon to provide geographic data.

Landsat is actually a series of satellites that orbit more than 100 miles above Earth. Each time a satellite makes an orbit, it picks up data in an area 115 miles wide. Landsat can scan the entire Earth in 16 days.

Geostationary Operational Environment Satellite (GOES) is a weather satellite. This satellite flies in orbit in sync with Earth’s rotation. By doing so, it always views the same area. It gathers images of atmospheric conditions that are useful in forecasting the weather.
The Geographer’s Tools

The newest tool in the geographer’s toolbox is **Geographic Information Systems (GIS)**.

GIS stores information about the world in a digital database. GIS has the ability to combine information from a variety of sources and display it in ways that allow the user to visualize the use of space in different ways.

When using a GIS, geographers must decide upon what sort of geographic information would help them examine a problem. Next, they select the appropriate layers of information. The GIS creates a composite map combining the information.
The **Global Positioning System (GPS)** was developed to help the military know exactly where its forces were located.

GSP uses a series of 24 satellites called Navstars.