

Geography by Design



VOLUME 1
SPATIAL ANALYSIS AND
PHYSICAL GEOGRAPHY

Table of Contents

| | |
|--|-----------|
| THE GEOGRAPHER'S EYE | 1 |
| Lesson 1: Spatial Relationships..... | 1 |
| Lesson 2: Latitude and Longitude..... | 7 |
| Lesson 3: Types of Maps..... | 13 |
| Lesson 4: Map Projections..... | 17 |
| Lesson 5: Key Concepts..... | 23 |
| THE PHYSICAL WORLD | 27 |
| Lesson 6: Water..... | 27 |
| Lesson 7: Land..... | 31 |
| Lesson 8: Climate..... | 35 |
| Lesson 9: Resources..... | 41 |
| Lesson 10: Biomes..... | 45 |

SAMPLE

TEKS in the Lesson:

9B Describe different types of regions, including formal, functional, and perceptual regions

16A Describe distinctive cultural patterns and landscapes associated with different places in Texas, the United States, and other regions of the world and how these patterns influenced the processes of innovation and diffusion

21A Analyze and evaluate the validity and utility of multiple sources of geographic information such as primary and secondary sources, aerial photographs, and maps

21C Create and interpret different types of maps to answer geographic questions, infer relationships, and analyze change

22C Use geographic terminology correctly

Essential Questions:

- Why are place and scale significant to the study of geography?
- What are everyday examples of formal, functional, and perceptual regions?
- What are the two different types of geographic movement?

Materials:

For teacher

- IR-12

For each student

- IR-12
- IR-13

Map Items:

- Houston, United States
- Gulf of Mexico
- Rio de Janeiro, Brazil
- Sao Paulo, Brazil
- Mexico City, Mexico
- Sierra Madre Occidental Mountains
- Sierra Madre Oriental Mountains
- Great Plains
- Vietnam
- Cuba
- Israel
- Utah, United States
- Jerusalem, Israel
- Guatemala
- New York City, United States

Vocabulary Focus:

- place
- scale
- absolute location
- relative location
- migration
- diffusion
- push factors
- pull factors
- hearth
- region
- formal region
- functional region
- perceptual region
- human-environment interaction

Expected Time for Lesson: 1–2 45-minute day(s)

Step 1: Preparing to Learn

1. Instruct students to close their eyes and imagine the ideal place to live.
2. As students consider their imaginary ideal places, instruct them to think about what geographic characteristics their places would have.
3. After 1–2 minutes, instruct students to open their eyes and share their thoughts with a classmate. Items discussed may include the following:
 - A. What are your favorite things to do in the place you imagined?
Answers will vary.
 - B. What climate and physical features would support those favorite activities? *Answers will vary.*

Step 2: Guided Practice

1. Instruct students to create a map of their ideal imaginary place, including at least five physical features and five political features on the map.
2. Monitor students' work, reminding them of TODALSIGSS as well as the properties of political and physical maps.

Step 3: Reading to Learn

1. Distribute IR-12 and IR-13.
2. Instruct students to complete IR-12 as they read IR-13.
3. Conduct a whole-class discussion with the following facilitation questions:
 - A. In your own words, describe how the state of Texas is a formal region. *Texas is a formal region because it is an independent political state with clearly defined boundaries. When it was founded, it had a single star on its flag, which it maintains today.*
 - B. How is your local high school representative of a functional region? *There are specific attendance zones that define where one district or school zone starts and ends.*
 - C. Describe how the Bible Belt can be a perceptual region. *The Bible Belt is a region of the United States that ranges roughly from Kentucky to the north, through the Deep South, and including Texas and Oklahoma; it has the highest concentration of conservative Christian denominations, such as Southern Baptist.*

IR-12: Key Concepts of Geography—Reading to Learn
Use the reading organizer below as you read IR-13. Be prepared to share your responses.

| Key Concept of Geography | Definition | Text Example | Example from My Life |
|--------------------------|------------|--------------|----------------------|
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IR-13: Key Concepts of Geography

Key Concepts of Geography

Place
Places have unique physical and human characteristics that set each place apart from any other place. For example, Houston, Texas, is located on Buffalo Bayou, which flows into the Gulf of Mexico. Houston is also home of the Astrodome, the first domed stadium in the world. There is only one city in the world that can claim the Houston Astros baseball team. Mission control for NASA is located exclusively in Houston at the Johnson Space Center.



The Houston Astrodome is known as "the eighth wonder of the world" because of its revolutionary design. The first baseball game was played in the Astrodome on April 19, 1965.

These characteristics make Houston unique and provide it with a special feeling or "sense" of place. Sense of place makes locations different and attractive to people.

Having a sense of place helps people understand the human elements of different locations. In most cases, people attach a sense of pride to where they live. As such, there is usually a high degree of emotion associated with that place, and in some extreme cases, people will turn to violence to protect or defend a place (e.g., the Holy Land in Israel).

Scale
Understanding the concept of scale is vital to the study of geography. **Scale** refers to the representation of data at various levels of generalization or specificity. Individual events at a local level can have a global effect. Think about the factors involved in the destruction of the Amazon rainforest.

There are several reasons the Brazilian government is encouraging people to move north, to the interior of the country. One reason is an attempt to relieve the overcrowded conditions in the coastal cities of Rio de Janeiro and Sao Paulo. Another reason is to increase the number of farmers who grow soybeans, a very profitable crop. As people move closer to the rainforest, they clear small plots of land to build homes and grow crops. On a local scale, an individual clearing a few acres has very little effect.

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Step 4: Analyze and Evaluate

1. Instruct students to respond in their geographer’s journals to the following prompt:

Write a paragraph describing the map you created. Use the key concepts of geography in your description. For example, note the location of cities or modes of transportation you included. *Answers will vary based on the students’ maps.*

Teacher Note: Collect and keep student maps to reuse in Lesson 8.

IR-12: Key Concepts of Geography—Reading to Learn

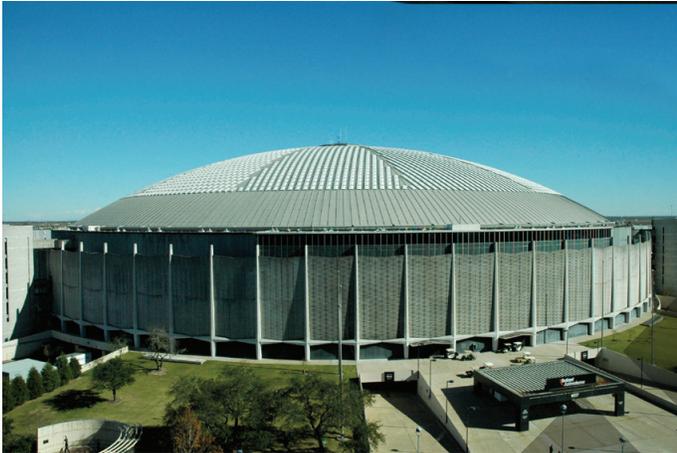
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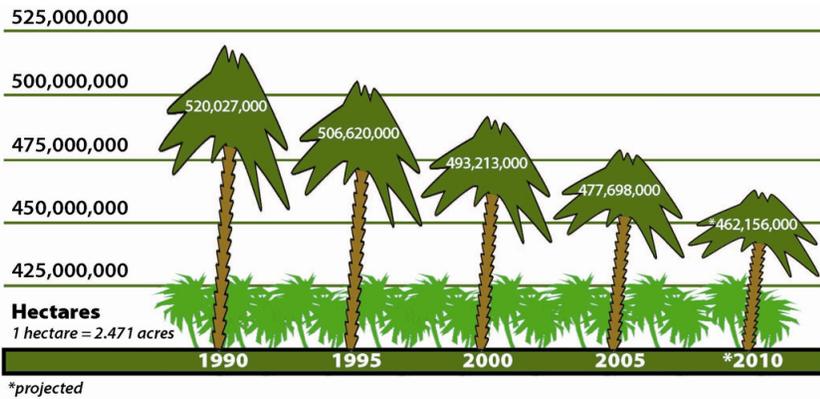
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IR-13: Key Concepts of Geography



How have economic and political policies that support the destruction of the rainforest had an impact on local and global scales?

However, on a larger regional scale, when thousands of farmers destroy and burn acres of Amazon rainforest, there are environmental problems to consider.

Wind currents carry the smoke from the burning forests throughout the region, causing people outside Brazil to have breathing problems from the pollution.

On a still larger scale, destruction of the Amazon rainforest has global implications. Some scientists believe the intense heat from the burning of the rainforest has created a hole in the ozone layer directly above the Amazon basin, allowing more solar radiation into Earth's atmosphere, which could affect people around the world.

Additionally, scientists have only mapped about one-quarter of the Brazilian rainforest. That means scientists have been able to identify and categorize only about one-quarter of all of the plants, animals, insects, and enzymes located in the rainforest. However, 90% of all pharmaceutical medicines originated in the rainforest. What does this mean? Human activity in the rainforest in Brazil may destroy undiscovered potential cures for diseases or illnesses. It is possible that as the rainforest is burning, the cure for cancer or AIDS could be lost forever. This, of course, affects people on a global scale.

Location

Everything has a location. People can use **absolute location** to identify precisely where something can be found. When looking for a city on a map, the coordinates of latitude and longitude are used to find the precise spot on the map. Absolute location provides only a location; there is no explanation of the nature or unique characteristics of that particular area on the map. For example, Mexico City is located at 19° N and 99° W.

IR-13: Key Concepts of Geography

Relative location is a way to describe where something is located in relation to a well-known object. For example, Mexico City is nestled between the Sierra Madre Occidentals and Sierra Madre Orientals, on the site of the Aztec capital of Tenochtitlan, about 317 kilometers (197 miles) west of Veracruz and 298 kilometers (185 miles) north of Acapulco.

We use relative location skills constantly in daily life. How many times have you asked or heard: “Mom, where are my shoes?” “Where is the remote control?” or “Do you know where I put my car keys?” All of these questions are usually answered with information that is fairly obvious: “I put your shoes in your bedroom closet,” “The remote control is on the left side of the coffee table,” or “Your car keys are in the drawer of the table by the front door.” How many bedroom closets, coffee tables, and tables by the front door do people typically have? Usually there is just one, and these are prominent objects in one’s own home. Therefore, the object the person is seeking is easy to find relative to the “big object.”

Relative location is also used in daily life when directions are given. “Go down this street for about a half mile. Then turn left at the grocery store. That street will wind around a bit until you get to a little park. Turn right just after that park, and my house is the fourth one down on the left-hand side. It has two big pine trees and a porch swing in front. You can’t miss it!”

Movement

Since geographers study Earth through spatial analysis, they are interested in how people, products, and ideas interact across space. That can include the study of **migration**, or the movement of people, as well as **diffusion**, or the movement of ideas. There are push and pull factors associated with migration.

- **Push factors** are those that encourage people to move away from a place. During the Dust Bowl in the 1930s, Americans in the Great Plains moved because environmental factors (climate) had a negative impact on people’s ability to earn a living, resulting in thousands of people migrating to other places in the United States to seek employment.

IR-13: Key Concepts of Geography

- **Pull factors** are those things that encourage people to move to a community. During the Gold Rush in the late 1840s, gold prospectors flocked to California in attempt to “strike it rich.” Most immigrants coming into the United States today still cite economic opportunities as the number one reason they migrate.

More often than not, migration is voluntary and primarily for economic reasons. The Dust Bowl and Gold Rush are two examples of voluntary migration for economic purposes. Life was difficult in the Great Plains in the 1930s, but just because ample farmland started to dry up, people were not legally required or forced to move. Rather, they chose to move.

Other reasons that people move include political duress, such as when the early American colonists moved away from Europe to flee restrictive governments led by absolute monarchs. Fleeing from a harsh political situation under a Communist dictatorship was the motivation behind the flight of the Vietnamese boat people in the 1970s as well as the mass exodus of Cubans in the 1980s. Religious persecution can be another push factor. The Jewish Diaspora, beginning around the 6th century BCE, and the Mormon journey, during the mid-19th century, are two examples of people moving due to religious persecution.

The most obvious pull factor would be migration to a more desirable place. The political or economic climate may be more attractive, affording the migrants a less restrictive political environment or greater economic opportunities. As the population in Europe expanded in the 16th and 17th centuries, information about the New World spread throughout Europe. People started migrating to the Americas at an unprecedented rate to seek more space and greater economic opportunities, both of which were abundant in the New World. From the time of Israel’s independence in 1948, Jews have moved to Israel voluntarily in an effort to gain religious freedom. Both of these examples illustrate the pull factors of migration.

There is a second part of the movement theme in geography. **Diffusion** is the spread of phenomena such as ideas, cultural traits, or diseases. For example, languages, government and economic systems, and religions are all intangible ideas. We cannot touch the English and Spanish languages, which are the two most widely spoken languages in the United States. And yet the **hearth**, or origin, of both languages is Europe, not the United States. Similarly, Christianity claims more followers than any other religion in the world. The religious hearth is near Jerusalem, and the beliefs have diffused around the world, in part because the Bible has been translated into hundreds of languages.

IR-13: Key Concepts of Geography

Culture has diffused in the past primarily through migration because people take their language, system of government and economics, and religion with them. Those things may change over time, but the ideas diffuse, or move, when people migrate.

The major exception to modern cultural diffusion patterns is the use of technology. Using resources such as the Internet, people can learn new information much faster than through human migration. Satellite radio and television signals contribute to immediate access to information and data being transmitted farther and faster than ever before. The Super Bowl, World Series, and Academy Awards are all broadcast live around the world in a variety of languages. There is a global appeal for sports like football and baseball and the purchase of team jerseys, sweatshirts, and hats, or designer fashions worn by movie stars. In our highly interconnected world, the concept of globalization illustrates how the diffusion of culture has a profound impact on most people in the world.

Region

Another key concept in the study of geography is region. **Region** can be defined as an area that contains a certain amount of formal, functional, or perceptual similarities within a common boundary. A **formal region** can be defined as a region that exhibits a certain amount of similar characteristics. An example of a formal region would be a country such as Guatemala. The citizens of Guatemala share common cultural characteristics, but in this case primarily share a sense of government and law.

A **functional region** is a region that has a certain amount of interaction within it. A functional region would be the interaction between the suburban areas and the heart of the urban core of New York City, as people are in continual motion by commuting to work, going shopping, going out to eat at different restaurants, or attending different entertainment events. Another example of a functional region is to look at the distance between a television station and how far its signal reaches. People who view a particular station without the use of satellite technology are within the functional region of the television station.

A **perceptual region** is a region that exists in the minds of people only. An example would be the Middle East because it can be defined in several different ways. A person could characterize the Middle East as a region based on the dominant language, most practiced religion, or by economic activity. Similarly, not all Americans define the boundaries of the deep South the same. Some people consider Louisiana, East Texas, Tennessee, southern Kentucky, and Florida as part of the deep South.

IR-13: Key Concepts of Geography

Regions are sometimes difficult to define. Where is the Wheat Belt, or the area of the United States where the majority of wheat is grown? All of Kansas would be included, but which parts of Texas, Oklahoma, Colorado, Nebraska, and Iowa are included in this region? There is no way to draw an exact line around the Wheat Belt, which adds to the depth and complexity of regions. The important point about regions is that a person can define them based on varying criteria.

Human-Environment Interaction

Humans are connected to the physical environment in which they live. Humans modify, adapt to, and depend on the environment. **Human-environment interaction** is just that: Humans interact with the environment, and the environment interacts with humans. How do humans interact with their environment? You are doing it right now with the clothes you are wearing. If it's warm outside, you might wear shorts and a light T-shirt, whereas in the cooler places, people might wear sweaters and long-sleeved shirts. Most likely, either the air conditioner or heater is running to balance the temperature where you are located, which is also interacting with the environment.

In a free enterprise economic system, anybody who has an idea and money willing to invest in the idea can purchase a parcel of land, have it cleared, and build on that site. That's also interacting with the environment.

So how does the environment influence people? The physical environment offers opportunities for human beings to construct buildings, create neighborhoods, extract resources from mines, and farm the land. However, there are also constraints on the extent of human activity. Tornados, earthquakes, and droughts are all natural events, and they occur when the physical conditions are ripe for those events. For example, El Niño, an irregularly recurring flow of warm surface waters from the Pacific Ocean, affects the countries along the Pacific Coast in different ways. Neither North American nor South American countries can control what El Niño will do. The individual countries can only prepare for the impact of El Niño.