

PRE-AP WORLD GEOGRAPHY SUMMER ASSIGNMENT

Instructions: Read through Chapter 1 of our textbook (*World Geography*, McGraw Hill Education © 2016) **and take notes over the content**. Use whichever notetaking style with which you are most familiar and feel most comfortable. We will use these notes in class during the first two weeks and will take a Reading Quiz on the 3rd Friday of school.
(Please notice that these notes will be **used** in class and **not taken** during class. Your notes are expected to be completed prior to the first day of class.)

Additional Information Concerning Readings:

You will be assigned reading selections from the textbook for each unit of study in this course. These reading assignments are non-negotiable and will be one of several on-going assignments this year. While it is statistically possible to pass this course without passing any of the Reading Quizzes which will accompany the assigned readings it is much more likely that you will jeopardize your ability to pass, your UIL eligibility, your GPA, and potentially your ability to graduate on time (unless Summer School is taken, which costs several hundred dollars).

Assigned reading selections will be announced well in advance and will typically result in a reading schedule that, if evenly distributed among the days before it is due, will be approximately one page of reading and notetaking per day. The time required to complete this per day depends on you and the notetaking style you employ. In class, I will introduce you to and require you to use, for the Fall Semester, a particular notetaking style. When utilizing this particular style, you should be able to complete one page of reading in approximately 15-20 minutes. Often, reading and notetaking will be your only homework and as such you should have no issue with completing it all on time.

Any information within an assigned chapter of reading may end up appearing on a Reading Quiz. Reading Quizzes will be content specific to the information found within the textbook. If you were to search for information online and attempt to use that information on the quiz, there is a possibility that it may not yield the answer choice that matches the information in the textbook. To ensure uniformity and equitable access to information the textbook will be our primary source of information for Reading Quizzes.

Information Regarding the Textbook's Layout:

At the beginning of each chapter in the textbook you will find an introductory page. This page contains the title of the chapter, the content divisions of the chapter, an Essential Question, and information entitled "Geography Matters..." which correlates with information within the chapter. The information on this page is, at the very least, worth noting and most likely should be included in your notes.

Chapters are divided into "Lessons." Each Lesson begins with a listing of the academic and content vocabulary within the Lesson, and a suggested graphic organizer, if you would like to utilize that form of notetaking. Each Lesson also contains an Essential Question, Guiding Questions located at the beginning of each sub-section, and Reading Progress Checks located at the end of each sub-section. There is also a lot of additional information located in the margins of most pages. Each Lesson concludes with a Lesson Review.

Should you have any questions, please email me at pmoon@conroeisd.net

How Geographers Look at the World

ESSENTIAL QUESTION • How does geography help us interpret the past, understand the present, and plan for the future?

networks

There's More Online about how geographers look at the world.

CHAPTER 1

Why Geography Matters
Distribution of Political Power

Lesson 1
The Geographer's Tools

Lesson 2
The Geographer's Craft

Geography Matters...

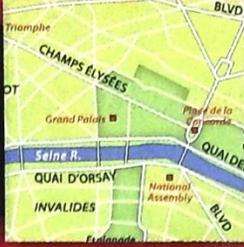
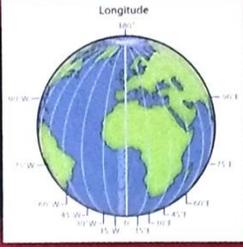
Geographers are not the only ones who find value in geography skills. In fact, you use geography skills every day. The online maps you use to find the nearest grocery store, the GPS technology in your smartphone that tells your friends where you are, the weather reports that help you decide what to wear each day, the transportation systems that get you from place to place, and even your understanding of the people around you—their beliefs, values, and ways of life—are all examples of how geography is integrated into your daily life. Understanding the elements of geography in greater detail can help you become a better decision maker, planner, and citizen of the United States and the world.

◀ Philippe Cousteau, Jr., grandson of the famous marine explorer Jacques Cousteau, paddles in the waters of Blue Spring State Park in Florida while working on a documentary about Blue Spring and its manatees.

Orlando Sentinel/McClatchy-Tribune/Getty Images

There's More Online!

- ✓ IMAGE Mental Map
- ✓ IMAGE Satellite Image of Earth
- ✓ MAP Common Map Projections
- ✓ MAP GIS Layers
- ✓ MAP Great Circle Routes
- ✓ MAP Latitude and Longitude
- ✓ INTERACTIVE SELF-CHECK QUIZ
- ✓ VIDEO The Geographer's Tools



LESSON 1

The Geographer's Tools

ESSENTIAL QUESTION • How does geography help us interpret the past, understand the present, and plan for the future?

Reading HELPDESK

Academic Vocabulary

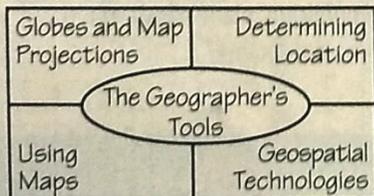
- internal
- transmit

Content Vocabulary

- great circle route
- map projection
- planar projection
- cylindrical projection
- conic projection
- absolute location
- relative location
- elevation
- relief
- thematic map
- global positioning system (GPS)
- geographic information systems (GIS)
- remote sensing

TAKING NOTES: Key Ideas and Details

IDENTIFYING As you read the lesson, use a graphic organizer like the one below to identify the tools geographers use to look at the world.



IT MATTERS BECAUSE

The study of geography involves looking at every aspect of the Earth's systems. Aspects such as human economies, societies, and cultures, and plants, animals, climate, and the physical environment affect each other in many ways. Geography analyzes these diverse interactions to learn more about how Earth's systems are interconnected. Geographers gather information from various sources using a variety of tools to study these complex and interrelated Earth systems.

Globes and Map Projections

GUIDING QUESTION How are globes and map projections related?

A globe is a scale model of the Earth that depicts properties such as area, distance, and direction. Globes accurately display all these properties because they are round just like the Earth. A map is a flat representation of all or part of the planet. But, unlike globes, maps cannot show all the properties accurately.

Mapmakers, called cartographers, use mathematical formulas to transfer information from the three-dimensional globe to the two-dimensional map. However, when the curves of a globe become straight or only slightly curved lines on a map, distortion occurs in shape, distance, area, or direction.

A straight line of true direction on a map is not always the shortest distance between two points on Earth. The measured distance between any two points on a flat map will not have the same distance when measured on a round globe. To find the actual shortest distance between any two places, stretch a piece of string around a globe from one point to the other. The string will form an arc that is part of a great circle, an imaginary line that follows the Earth's curvature. **Great circle routes** therefore mark the shortest distance that an object can travel between two points. They are useful because they indicate actual distances between two locations. Determining a great circle route is important for travel and transportation. Ship captains and airplane pilots use great circle routes to reduce travel time and conserve fuel.

While globes are useful for portraying the entire Earth, their ability to display detailed features of a particular region are limited. Maps, however, are useful for showing more in-depth information. Cartographers convert the three-dimensional globe image onto a flat map by creating a **map projection**. But because map projections can distort one or more of the properties of size, shape, distance, area, or direction, the cartographer must choose the projection to use based on the purpose of the map. It is important to know which properties are distorted, and how much they are distorted, so you can use and interpret the map accurately.

There are many kinds of map projections, some with general names and some named after the cartographer who developed them. Three major categories of map projections are planar, cylindrical, and conic.

A **planar projection**, also known as an azimuthal projection, shows the Earth centered in such a way that a straight line coming from the center to any other point represents the shortest distance. Because a planar projection is most accurately represented from its center, it is often used for maps of the Poles.

A **cylindrical projection** is based on how a map would look if the globe was projected onto a cylinder. This type of projection is most accurate at the Equator because shapes and distances are increasingly distorted when moving away from the Equator and toward the Poles. A Mercator projection is a common example of a cylindrical projection. Because it displays true direction, a Mercator projection is useful for sea navigation.

A **conic projection** is the Earth's surface projected onto a map formed into a cone. Shape is relatively accurate on such projections, and straight lines drawn on them approximate great circle routes if distances are not great.

World maps used for general reference use the Winkel Tripel projection. This map projection cannot be used to determine precise distances, sizes, or shapes of specific global features. It does, however, provide a good balance between the overall size and shape of land areas shown.

A Robinson projection looks similar to a Winkel Tripel projection, although its east-west projections run in a straight line. The Robinson projection produces minor distortions, particularly in the polar areas that appear flattened on the map. The sizes and shapes near the eastern and western edges of the map are accurate, and outlines of the continents appear much as they do on the three-dimensional globe.

great circle route an imaginary line that follows the curve of the Earth and represents the shortest distance between two points

map projection a mathematical formula used to represent the curved surface of the Earth on the flat surface of a map

planar projection a map created by projecting an image of the Earth onto a geometric plane

cylindrical projection a map created by projecting Earth's image onto a cylinder

conic projection a map created by projecting an image of Earth onto a cone placed over part of an Earth model



TEKS Texas Essential Knowledge and Skills

16C explain ways various groups of people perceive the characteristics of their own and other cultures, places, and regions differently;

20A describe the impact of new information technologies such as the Internet, Global Positioning

continued on the next page

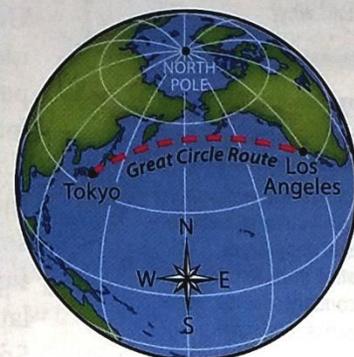
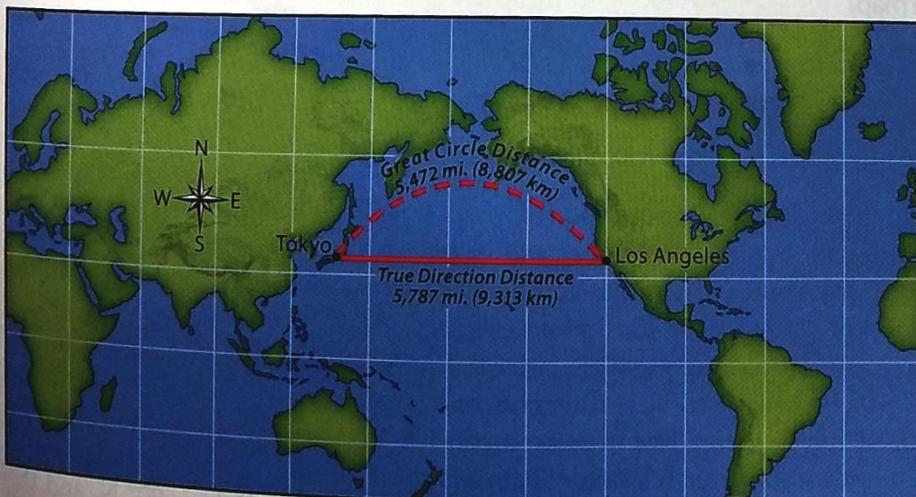
GEOGRAPHY CONNECTION

Great circle routes show the true distance between two places on Earth.

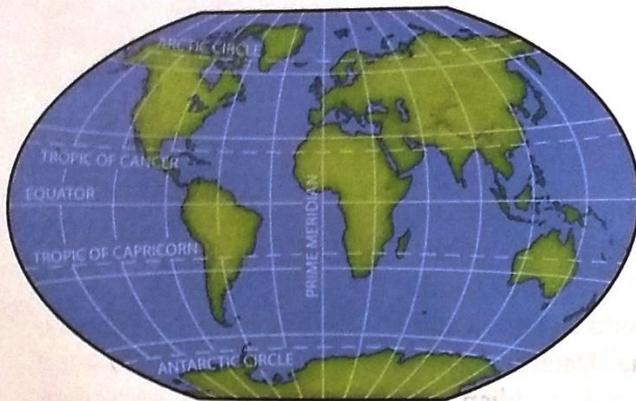
1. THE USES OF GEOGRAPHY Why do ship captains and airline pilots use great circle routes?

2. THE WORLD IN SPATIAL TERMS Why do distances appear longer on maps than on globes?

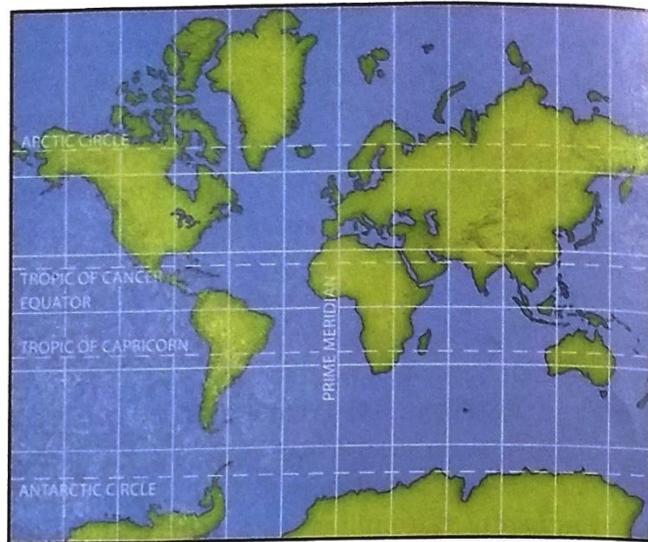
Great Circle Routes



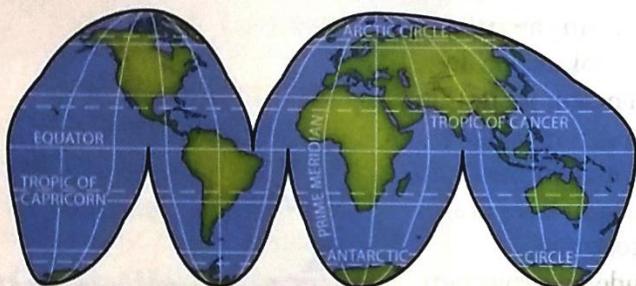
Common Map Projections



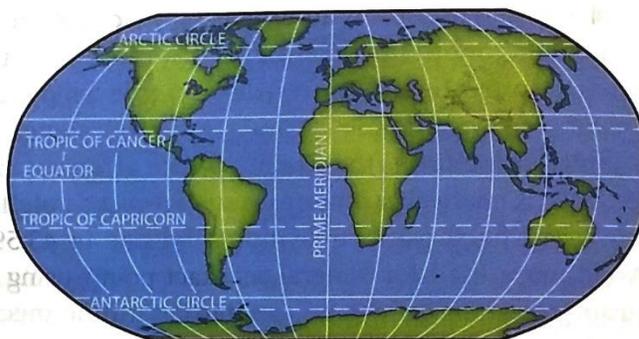
Winkel Tripel Projection



Mercator Projection



Goode's Interrupted Equal-Area Projection



Robinson Projection

GEOGRAPHY CONNECTION

Each type of map projection has its advantages as well as some degree of inaccuracy. In addition to the major categories of map projections—planar, cylindrical, and conic—many other map projections can be used depending on the information the mapmaker wishes to show.

1. THE WORLD IN SPATIAL TERMS

Which projection appears to have the least amount of distortion of distances and size of landmasses?

2. THE USES OF GEOGRAPHY

Which projection is preferred for sea navigation? Why?

TEKS Texas Essential Knowledge and Skills

System (GPS), or Geographic Information Systems (GIS);

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

Goode's Interrupted Equal-Area projection resembles a globe that has been cut apart and laid flat. The process of creating this *interrupted projection* can be compared to slicing an orange peel in order to lay it flat on a page. Although this projection shows the true size and shape of Earth's landmasses, distances between land features are generally distorted.

READING PROGRESS CHECK

Explaining Why is a trip from Tokyo to Los Angeles a longer distance than it appears to be on a map?

Determining Location

GUIDING QUESTION How is location determined?

Geography addresses the question of *where*. To answer this question, a geographer identifies a location. Both globes and maps use a grid system in order to form a pattern of lines that cross one another. These patterns are used to help find the location of places on the Earth's surface.

Lines of latitude, or parallels, circle the Earth parallel to the Equator. Although they run in an east-to-west direction, they measure distance to the north and south of the Equator. The measurements are in degrees. Parallels north of the Equator are called north latitude. Parallels south of the Equator are called south latitude. The Equator is defined as 0° latitude, the North Pole as 90° N, and the South Pole as 90° S.

Longitude lines, also called meridians, are lines that connect the North and South Poles. They run in a north-to-south direction, but they measure distance east and west of the Prime Meridian, which is identified as 0° longitude. Meridians run perpendicular to the lines of latitude, and they also use the measurement of degrees. Meridian lines located east of the Prime Meridian are identified as east longitude, and lines located west are known as west longitude. The longitude line located 180° from the Prime Meridian, on the opposite side of the Earth, is called the International Date Line.

The Equator divides the Earth in half, creating Northern and Southern Hemispheres. The Northern Hemisphere includes any location north of the Equator up to 90° N, while the Southern Hemisphere includes any location south of the Equator up to 90° S. Just as the Equator splits the Earth into Northern and Southern Hemispheres, the Prime Meridian and International Date Line split the globe into east and west halves. Locations east of the Prime Meridian are identified as part of the Eastern Hemisphere, and locations west of the Prime Meridian as part of the Western Hemisphere. All points on Earth are located in two of the four hemispheres: north or south and east or west.

An **absolute location** is an exact global address derived from the latitude and longitude lines that intersect at that place. For example, Tokyo, Japan, is located at approximately 36° N latitude and 140° E longitude. For a more precise reading of a location, a degree is divided into 60 minutes ('). Each minute is then divided into 60 seconds (") just as hours and minutes on a clock are divided to provide a more exact time. For example, the absolute location of the famous Tokyo Tower is 35°39' 30.96" N latitude and 139°44' 43.59" E longitude.

While absolute location identifies exact points using latitude and longitude, **relative location** uses a reference point to identify one place in relation to another. To find relative location, find a reference point—a location you already know—on a map. Then look in the appropriate direction for the new location. For example, locate the city of Paris on the map of France and use this as your reference point. The relative location of the city of Lyon can be described as southeast of Paris.

READING PROGRESS CHECK

Listing List the four hemispheres of the Earth.

absolute location the exact position of a place on the Earth's surface

relative location location in relation to other places

SKILLS PRACTICE

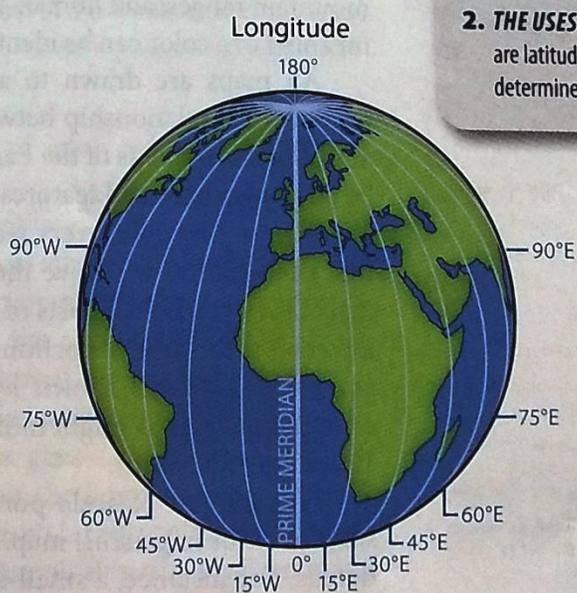
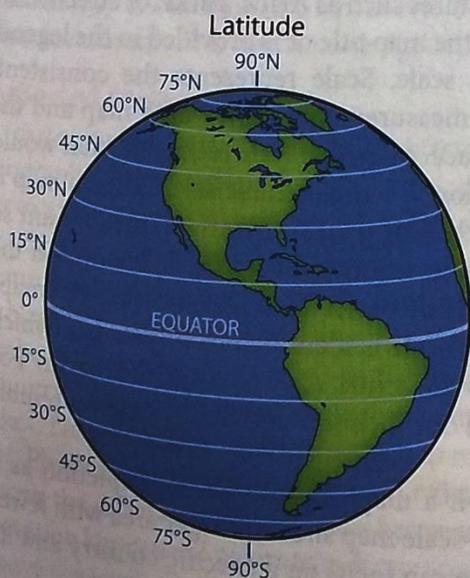
Work with a partner to compare the maps and diagrams in this lesson with the information in the paragraphs. Take turns reading the paragraphs aloud while your partner identifies the corresponding information in the visuals.

GEOGRAPHY CONNECTION

Lines of latitude and longitude create a grid system on Earth's surface.

- 1. THE WORLD IN SPATIAL TERMS** Which lines of latitude and longitude divide the Earth into hemispheres?
- 2. THE USES OF GEOGRAPHY** How are latitude and longitude used to determine absolute location?

Latitude and Longitude



Mapmaking

Mathematics plays an integral role in the study of geography, especially the process of projecting Earth's spherical features onto a flat map. Early cartographers hand-calculated their map projections using geometry, trigonometry, and even calculus. Today, computer programs take much of the mathematical legwork out of the process of mapmaking. However, geographers still use mathematics for many tasks, such as calculating the area of a landmass, determining the volume of a body of water, and computing distances between locations.

MAKING CONNECTIONS How does mathematics allow cartographers to create flat depictions of a spherical Earth?

elevation the height of a land surface above the level of the sea

Using Maps

GUIDING QUESTION How do maps work?

In addition to lines of latitude and longitude, maps include other important tools to help you understand the information they provide. Learning to use map tools will help you interpret the language of maps more easily.

Parts of a Map

The purpose of a map is identified by the map's title. For example, a map titled "Housing Developments in Washington, D.C." would show different details than a map titled "Topography of the Washington, D.C., area." The time period of a map is another important clue to understanding what the map shows. For example, a map titled "Europe Before World War I" would show country borders and national capitals of Europe that are quite different from Europe's current political borders. The map title is the first thing you should look at when reading a map because it provides context for the map's content.

An effective map will provide a legend, or key, to explain the meaning of various symbols used on the map. Geographic features represented on the map are identified by symbols, also called icons. Icons vary by map, depending on the details that are the focus of the map. Roads, highways, railroads, landmarks, parks, and buildings are all human-made features shown by icons. Dots are often used to represent cities. Sometimes the relative sizes of cities are shown using dots of different sizes. Capital cities can be identified by a star within a circle.

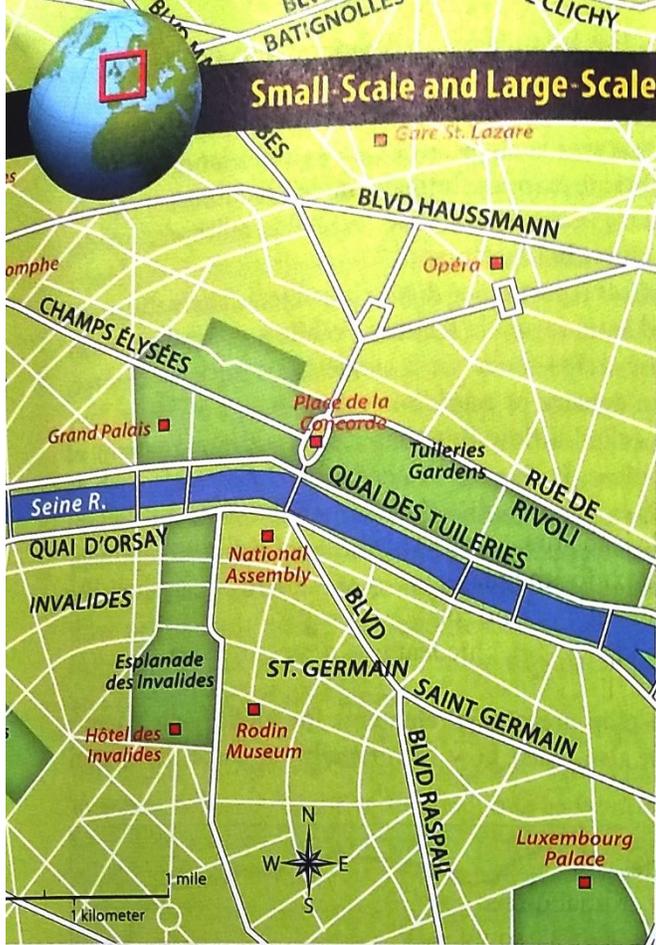
The compass rose indicates direction or orientation of a map. North, east, south, and west are the four cardinal directions. The intermediate directions—northeast, northwest, southeast, and southwest—may also be shown. The compass rose looks like intersecting arrows or points of a star.

Line symbols on a map emphasize various features of human activity, such as boundary lines, roads, streets, or routes of trade and transportation. On political maps, boundary lines highlight the borders between different countries and states. Line symbols can also represent physical features such as rivers, earthquake faults, and ocean shorelines.

Colors can be used to distinguish elements on a map. For example, a political map might make each country a different color. On a physical map, colors may indicate the various ranges of **elevation**, or the height above sea level. Colors are used for a variety of other purposes, including identifying water features such as oceans, lakes, or rivers; land features such as deserts, valleys, plains, or mountain ranges; and human-made features such as roads, parks, or streets. The meaning of a color can be identified by the map title or is provided in the legend.

All maps are drawn to a certain scale. Scale represents the consistent, proportional relationship between the measurements shown on a map and the actual measurements of the Earth's surface. Maps use scale to shrink what would be large distances and features of a region to a manageable size. When a map is scaled to fit on paper, every feature of the map is scaled by the same amount so that each feature will have the same proportion to every other feature on the map. However, not all parts of a map will be perfectly to scale because flat maps are subject to some distortion. A map's scale is identified by a scale bar, which compares distances shown by a map to actual distances on the Earth. For example, a scale bar might indicate that one inch (2.5 cm) on the map represents 100 miles (160.9 km).

The amount of scale portrayed on a map depends on its depiction as a *small-scale* or *large-scale* map. A small-scale map shows a larger area with fewer details. For instance, a small-scale map can focus on a specific country and its



GEOGRAPHY CONNECTION

Small-scale maps, like this political map of France, show a large area but little detail. Large-scale maps, like the map of the city of Paris, can show a small area with a great amount of detail.

- PLACES AND REGIONS** Using the scale bar on the map of France, what is the distance from Paris to Nice in miles?
- HUMAN SYSTEMS** What types of human-made features does the map of Paris include that the map of France does not?

neighboring countries to show boundary lines, major cities and capitals, important land or water features, or regional topography. For example, the scale bar on a map of France and its bordering countries could show a relationship of one inch (2.5 cm) as equal to 200 miles (321.9 km) in actual distance. On the other hand, a large-scale map can show a small area with a great amount of detail. It narrows in on an identified region to show more specific details. The map measurements of a large-scale map use much smaller distances than on a map of France. For example, a large-scale map of the city of Paris shows the layout of streets, major roads, bridges, parks, and important landmarks such as museums, hotels, and churches. The scale bar of a map of Paris could show a relationship of one inch (2.5 cm) as equal to one mile (1.6 km) in actual distance. This measurement is much more specific than for a small-scale map of France.

Types of Maps

A cartographer can choose from several types of maps in order to convey geographic information. Physical maps, political maps, and thematic maps each serve a unique purpose and are suited to showing different types of information. A physical map shows location and topography, or shape, of the Earth's land features. A study of a country's land and other physical features can help to explain the historical development of the country. For example, mountains may be barriers to transportation, and rivers and streams can provide access to a country's interior. Physical maps show water features such as rivers, streams, and lakes. They also show landforms such as mountains, plains, plateaus, and valleys.

Physical maps highlight general **relief** through shading and texture. Relief shows the differences in elevation between the various landforms of an area. An elevation key can use colors to indicate specific, measured differences in elevation above sea level.

relief the variation in elevation across an area of Earth's land

A political map provides the boundaries and locations of political units such as countries, states, counties, cities, and towns. It can show the networks and links that exist within and between political units. While some boundaries are distinguished by natural features such as bodies of water or landforms, the majority of features on a political map are human-made. Such human-made features can include boundary lines, cities and capitals, railroads, roads, highways, streets, buildings, and other landmarks.

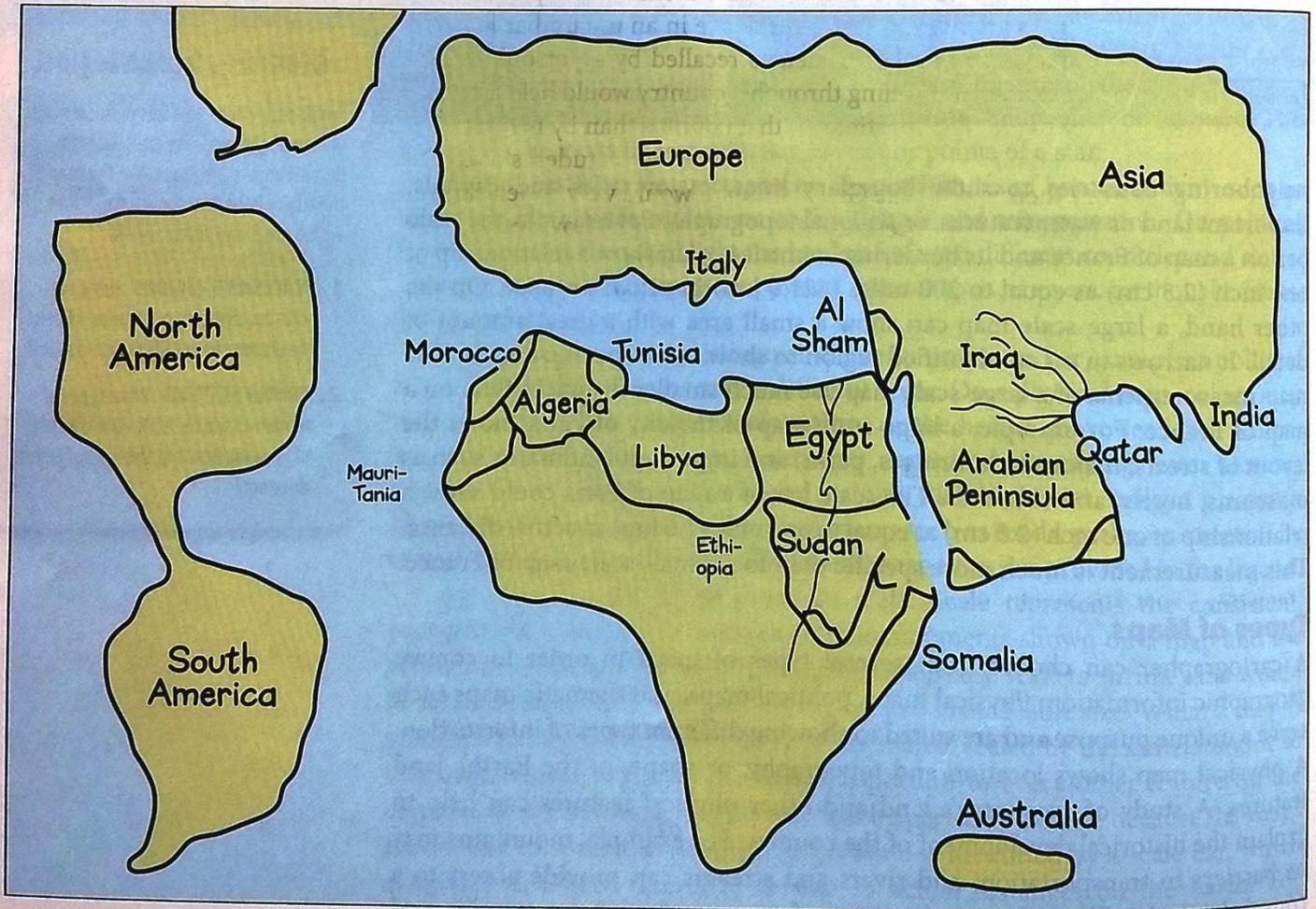
A **thematic map** emphasizes a particular theme or subject. Thematic maps can show various natural and human-made features. While a general map can cover various topics, thematic maps focus on a single topic such as climate, natural vegetation, population density, or economic activities.

A type of thematic map called a flow-line map displays the movement of people, animals, goods, and ideas. It also illustrates physical processes such as hurricanes and glaciers. Arrows illustrate the flow and direction of movement for the map subject. Arrows can be distinguished by different colors to represent the varied directions of movement, and the thickness of the arrows can show the amount that is moving.

Mental Maps

While the diverse parts of a map are crucial elements for identifying a map's purpose, a map reader must also learn how to mentally organize the spatial

thematic map a map that emphasizes a single idea or a particular kind of information about an area



Mental maps reflect a person's personal point of view or perception about a place.

▲ CRITICAL THINKING

- 1. Drawing Inferences** Based on this mental map, do you think the person who created it knows a lot or a little about the world? Explain.
- 2. Hypothesizing** Do you think your mental map of the world would be more or less detailed than this one? Why?

information emphasized by a map. Mental maps provide an effective method for answering and remembering important geographical questions about locations, characteristics, patterns, and relationships of places and regions. Mental maps describe an individual's **internal** map—his or her perception of features of the Earth's surface. Mental maps can be applied to local or global scales, from the orientation of an individual within a classroom or home, to the visualization one could see from an airplane on a transcontinental flight.

A person's mental map helps geographers understand how individuals view their relationship to the space around them. Mental maps mix precise, objective data with an individual's subjective perception or existing knowledge of places. For example, a student may be asked to memorize locations and names of the original 13 colonies to contextualize his or her experience and understanding of those places today. A biologist's mental map of major climate regions could include his or her knowledge of the distribution of various types of animals and plants within each region. Using mental maps of the world's regions over time allows a geographer to analyze patterns of human settlement in the world and how settlements relate to land features and availability of resources. This information can be used to determine why particular routes of settlement, trade, and transportation developed.

Mental maps can change according to an individual's experience and perception of people, places, regions, and environments. Because mental mapping is based on the individual, one individual's memory of a place differs from another individual's memory. A new experience in an unfamiliar location would alter the accuracy and number of details recalled by a person's mental map of that place. For example, traveling through a country would help a person more easily recall city names and locations of that country than by memorizing such places by only looking at a map. The pictures of two students asked to sketch from memory their view of the Grand Canyon would vary depending on what features the individuals noticed at the time, as well as how much their memory of the place has changed since they saw the canyon.

Recalling a place related to emotion, such as a city that a student likes or dislikes, would also alter the details depicted in a mental map. An individual's personal connection to a place or event through personal experiences or exposure to written and visual accounts can influence what is part of a mental map. As a result, mental mapping is beneficial for geographers to understand the significance of information related to a specific place and how it is perceived by individuals.

READING PROGRESS CHECK

Explaining What do relief maps show?

Geospatial Technologies

GUIDING QUESTION *How are geospatial technologies used to learn about the world?*

Geospatial technologies assist geographers and other professionals in answering geographic questions. Global positioning systems (GPS), geographic information systems (GIS), and remote sensing from satellites and aircraft incorporate multiple information sources to construct detailed geographic representations of specific aspects of the Earth's surface.

Global Positioning System

A **global positioning system (GPS)** is used to determine the exact, or absolute, location of something on Earth. Made up of a network of satellites and receiving instruments, GPS provides an accurate location with respect to latitude,

internal existing or lying within

global positioning

system (GPS) a navigational system that can determine absolute location by using satellites and receivers on Earth



Biologists use GPS technology to track the movement and behavior of animals in the wild.

▲ CRITICAL THINKING

1. Drawing Conclusions How might wildlife biologists use GPS technology to protect endangered species such as the African elephant?

2. Classifying What other fields use GPS technology to gather information?

longitude, and even altitude. GPS technology in the United States relies on a system of 24 satellites that make 6 full orbits around the Earth every 12 hours. The European Union, as well as some individual countries such as Russia and China, have their own satellites that support GPS systems.

The satellites in all these systems send out radio signals that are picked up by GPS receivers on Earth. In a process called triangulation, a GPS receiver measures the precise time taken for radio signals from four or more satellites to travel to the receiver. The receiver then multiplies the time by the speed of a radio wave to calculate the distance between it and the satellite. When signals from the four or more satellites are processed in the same manner, the receiver's built-in computer determines the point at which at least four satellite signals intersect on the Earth. This intersection then identifies the receiver's latitude, longitude, and altitude. The more satellites that are used, the more accurate the location that is pinpointed.

GPS technology serves a commercial purpose for military machinery, space shuttles, aircraft, ships, submarines, trucks, trains, and ambulance fleets. Yet it can also aid in multiple forms of personal navigation. The GPS receiver in a car, for example, tracks the car's changing location on an electronic map to provide constantly updated directions based on where the car is located and where it is headed. Many current GPS receivers are battery-powered and are no larger than the palm of your hand, while GPS computer chips are smaller than your fingernail.

Many fields of science employ GPS technology. For example, seismologists, the scientists who study earthquakes, can use GPS to determine the size of earthquakes. Scientists first plant GPS receivers in the ground in regions vulnerable to tectonic, or earthquake-prone, activity. Once an earthquake hits,

seismologists can quickly measure the strength of an earthquake by calculating how far the planted GPS receivers move. This measurement allows scientists to predict how likely the earthquake is to produce large ocean waves called tsunamis. Because tsunamis can cause devastating destruction to coastal communities, early warning would diminish loss of human life by advising people to flee as soon as possible.

Another function of GPS technology in the field of science is to track the migration of animals to determine any changing patterns within the animals' ecosystems. Biologists tag animals with GPS receivers so they can track their movement due to seasonal changes, changes of food or shelter, or threats to their habitat by human activity or by other animals.

Geographic Information Systems

Advances in technology have changed the way maps are made. An important tool in mapmaking today involves computers with software programs called **geographic information systems (GIS)**. But more than simply making maps, GIS can be used to perform advanced geographical analysis.

Many types of data can be entered into a GIS. These data come from a wide variety of sources such as maps, satellite images, printed text, and statistical databases. The primary and most important function of a GIS, however, is to link the location of a place with the characteristics, or attributes, found at that location. That function helps us not only identify and list the characteristics of places, but also analyze how places compare to one another and interact with one another. These patterns of interactions are known as spatial organization, and the study of them is called spatial analysis.

The locational data of places is stored in a GIS as latitude and longitude coordinates. These coordinates can be obtained from existing maps, GPS receivers, and satellite images. The attribute data come from a wide range of

geographic information systems (GIS)

computer programs that process and organize details about places on Earth and integrate those details with satellite images and other pieces of information

GIS Layers

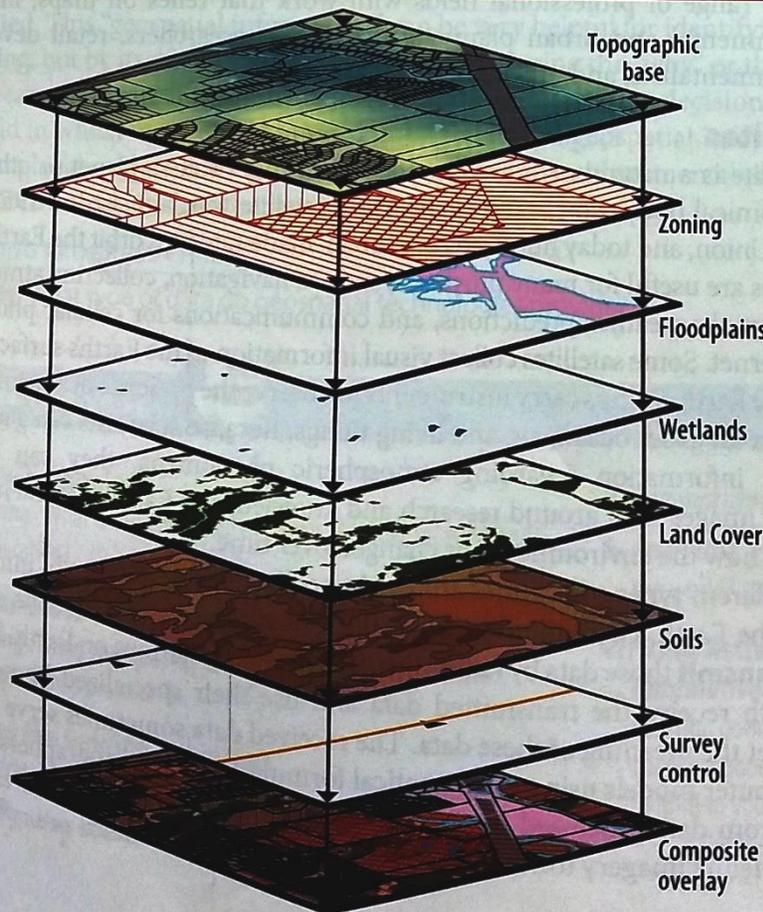
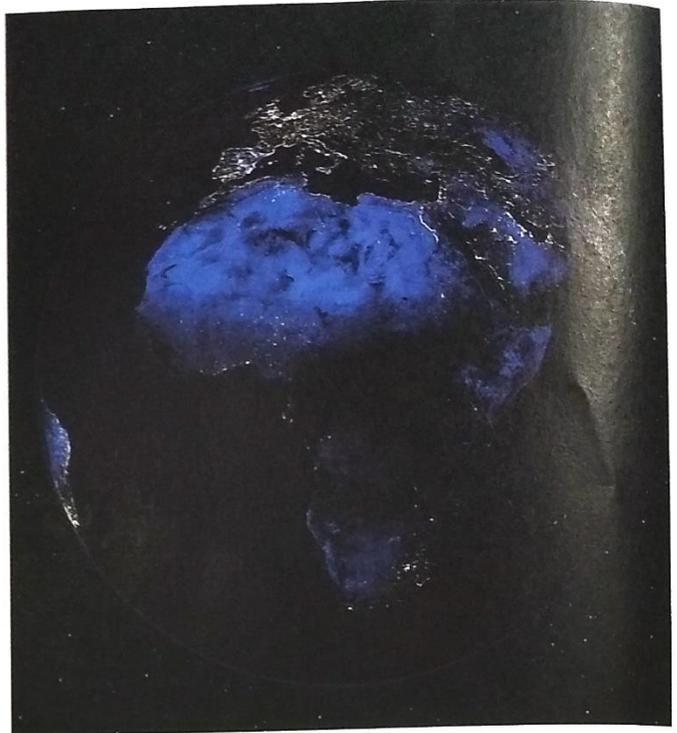


DIAGRAM SKILLS

Geographic information systems allow different kinds of information to be saved on separate layers.

CRITICAL THINKING

- Formulating Questions** What questions could a geographer answer using the layers of information in this sample GIS file?
- Evaluating** How does GIS allow cartographers to create maps and make changes quickly and easily?



The stark differences between North America and Africa at night are clearly seen with satellite images.

▲ CRITICAL THINKING

- 1. Drawing Conclusions** What do these images tell you about North America? About Africa?
- 2. Analyzing** How might the information from these images be used by geographers?

sources. The GIS stores all these data in a digital database. Cartographers then select an appropriate map projection and program the GIS to produce thematic maps of the data. Each of the various types of attribute data in the database can be displayed on the map as a theme. The different themes can be saved as separate electronic layers that can be turned on or off. The GIS can show just one layer of information or multiple layers at the same time.

In this way, maps can be made—and changed—quickly and easily to display various complex types of information with a single map source. GIS is used by a diverse range of professional fields with work that relies on maps, including environmental and urban planners, marketing researchers, retail developers, environmentalists, and other professionals.

Satellites

A satellite is a natural or human-made object that orbits a planet or other large astronomical body. The first human-made satellite was launched in 1957 by the Soviet Union, and today hundreds of human-made satellites orbit the Earth. These satellites are useful for many purposes, such as navigation, collecting atmospheric data to make weather predictions, and communications for cellular phones and the Internet. Some satellites collect visual information of the Earth's surface as they orbit the Earth. Others carry instruments to observe the presence of and interaction between the land, ocean, air, and living things. Because scientists can gather very specific information regarding atmospheric phenomena, they can compare satellite images with ground research and knowledge of Earth's natural history to analyze how the environment has changed over time.

Different types of satellites are used to collect different types of information about the Earth. Once the data are collected, computers on a satellite store and then **transmit** those data by radio signals to receiving stations on Earth. Scientists on Earth receive the transmitted data and use their specialized knowledge to interpret the meaning of these data. The received data sometimes serve as inputs to computer models using mathematical formulas. Just as cartographers produce maps from data processed by GIS, so do scientists who use the converted data from satellite imagery to study Earth's natural and human-made processes.

transmit to send from one place to another

Remote sensing is any technique used to measure, observe, or monitor a subject or process without physically touching the object under observation. For example, scientists use remote sensing when they analyze images from satellites, telescopes, and cameras in airplanes and spacecraft. Often, remote sensing collects images of things that could not be seen with the unaided human eye. It is also a useful process for obtaining information from locations that would otherwise be dangerous or difficult to reach, such as estimating precipitation rates in a desert region. The immediate and frequent flow of images from remote sensing allows cartographers to create detailed and relevant maps to estimate constant and changing environmental conditions, such as sediment buildup, air pollution, ocean surface roughness, surface temperatures, biomass volumes, mineral resources, and changes created by storms and floods.

remote sensing the science of obtaining information about an object or an area from a distance, typically from instruments in aircraft or satellites

Quality and Limitations of Geospatial Technologies

Geospatial technologies are excellent sources of information because they provide actual images and data related to a location and can provide a great amount of detail. While scientists can use observational and historical data to gather information about a place, geospatial technology acts as a primary source for compiling raw data. Because they are a relatively new innovation in comparison to traditional forms of mapmaking, the current uses of geospatial technologies can be limited. These informational technologies are constantly changing, and they will improve with the advancement of computer, aerospace, and Internet-based technology. Accelerated development in geospatial technology offers a number of possibilities for its use with government, private industry, scientists, and the general public. Because the economic, cultural, and political activities of the world's regions have become increasingly interconnected, information related to the world's physical and human systems needs to be readily available, consistent, and up-to-date. The combination of mental mapping with GPS, GIS, and aerial imagery can create a very detailed picture of places and regions.

Geospatial technologies allow access to a wealth of information about what sorts of features and objects are in the world and where those features and objects are located. This "geospatial information" can be very helpful for identifying and navigating, but by itself, does not help much in answering the "why" or the "why care" questions that lie at the heart of understanding and making decisions about the world in which we live. It is important to go beyond geospatial information to geographical understanding of peoples, places, and environments—and the connections among them—that are interesting as well as useful.

READING PROGRESS CHECK

Identifying What type of data do geospatial technologies provide?

LESSON 1 REVIEW



Reviewing Vocabulary

1. **Identifying** What is the difference between absolute location and relative location?

Using Your Notes

2. **Describing** Using your graphic organizer, list and describe the four common map projections.

Answering the Guiding Questions

3. **Comparing** How are globes and map projections related?

4. **Explaining** How is location determined?

5. **Summarizing** How do maps work?

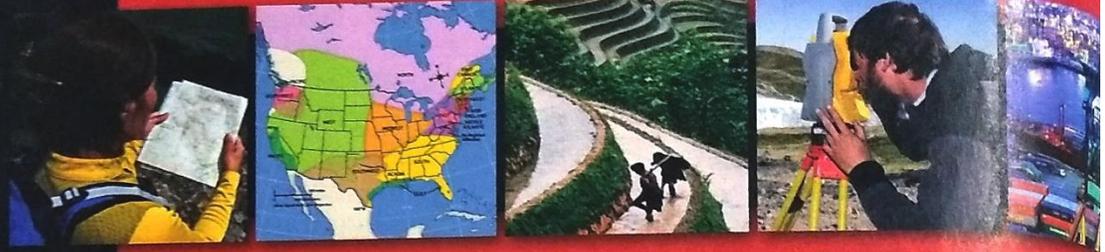
6. **Analyzing** How are geospatial technologies used to learn about the world? **21A**

Writing Activity

7. **Informative/Explanatory** If you were planning to open a sporting goods store, in what ways could GIS technologies help you choose a good location? Discuss the types of layers that might be helpful to your decision. **20A, 21A, 23B**

There's More Online!

- ✓ **CHART** Skills for Thinking Like a Geographer
- ✓ **IMAGE** Hiker Reading a Map
- ✓ **IMAGE** Rice Paddy in Southern China
- ✓ **IMAGE** Scientist Studying a Glacier
- ✓ **MAP** Perceptual Regions of the United States
- ✓ **INTERACTIVE SELF-CHECK QUIZ**
- ✓ **VIDEO** The Geographer's Craft



LESSON 2

The Geographer's Craft

ESSENTIAL QUESTION • How does geography help us interpret the past, understand the present, and plan for the future?

Reading **HELPDESK**

Academic Vocabulary

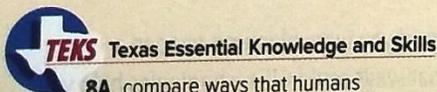
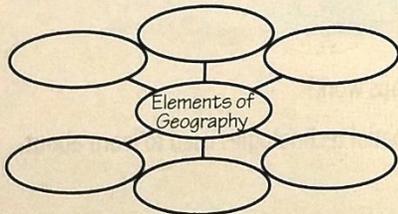
- primary
- obtain
- fluctuation

Content Vocabulary

- **spatial perspective**
- **site**
- **situation**
- **formal region**
- **functional region**
- **perceptual region**

TAKING NOTES: Key Ideas and Details

IDENTIFYING As you read the lesson, use a graphic organizer like the one below to identify the basic elements of geography.



8A compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology;

continued on the next page

IT MATTERS BECAUSE

The root of the word geography is an ancient Greek word meaning "earth description." Geographers study the location and relationships of Earth's physical and living features. They look for links between places and people and identify patterns in order to learn why those patterns exist or occur.

A Geographic Perspective

GUIDING QUESTION What is the spatial perspective?

Geographers focus on understanding the world and answering questions about it. An important part of the geographical perspective is the spatial perspective. A **spatial perspective** focuses on how individual places, people, or objects are related to one another across the surface of the Earth. Using a spatial perspective, geographers examine why things are located where they are. Geographers also use the spatial perspective to examine what makes regions distinct based on changes and movements of people over time and changes in the physical environment. This spatial perspective can also be viewed from a local perspective, such as where to select a new home, or the global perspective, such as the economic activities of countries in the form of trade.

Other aspects of the geographic perspective include the ecological perspective and the perspective of experience. The ecological perspective focuses on understanding Earth as a complex set of interacting living and nonliving components. It involves thinking about the connections and interactions that operate among ecosystems and human societies. The perspective of experience considers how people make meaning from the world in which we live. As people live in locations on Earth, they have experiences and build memories that give places on Earth unique characteristics. Awareness and sensitivity to these uniquenesses are an important part of the perspective of experience.

Not all people who study or incorporate geography into their profession are labeled geographers. Geography skills can be applied to a variety of fields, including government, business, and education.

One broad cluster of career opportunities in geography is teaching and education. Teaching opportunities exist at all levels, from elementary to high school to university levels of education. Teachers with a background or training in geography topics are in demand in the United States for elementary and high schools. Students with formal geographic training from a university can find work in many diverse businesses, industries, and professional fields.

Because geography itself has many specialized fields, there are many ways that people use geography in their work. Those with a knowledge of physical geography can work as meteorologists who study the atmosphere and weather patterns; as emergency management officials dealing with natural hazards, such as earthquakes or hurricanes; as ecologists who study the interrelationships of organisms and their environment; as soil scientists; and as environmental managers. Work in the environmental field includes assessing the environmental impact of proposed development projects regarding air and water quality and wildlife.

spatial perspective a way of looking at the human and physical patterns on Earth and their relationships to one another

TEKS Texas Essential Knowledge and Skills

- 9A** identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region;
- 9B** describe different types of regions, including formal, functional, and perceptual regions.

continued on the next page

Skills for Thinking Like a Geographer

Skill	Examples	Tools and Technologies
Asking Geographic Questions helps you pose questions about your surroundings	<ul style="list-style-type: none"> • Why has traffic increased along this road? • What should be considered when building a new community sports facility? 	<ul style="list-style-type: none"> • Maps • Globes • Internet • Remote sensing • News media
Acquiring Geographic Information helps you answer geographic questions	<ul style="list-style-type: none"> • Compare aerial photographs of a region over time. • Design a survey to determine who might use a community facility. 	<ul style="list-style-type: none"> • Direct observation • Interviews • Reference books • Satellite images • Historical records
Organizing Geographic Information helps you analyze and interpret information you have collected	<ul style="list-style-type: none"> • Compile a map showing the spread of housing development over time. • Summarize information obtained from interviews. 	<ul style="list-style-type: none"> • Field maps • Databases • Statistical tables • Graphs • Diagrams • Summaries
Analyzing Geographic Information helps you look for patterns, relationships, and connections	<ul style="list-style-type: none"> • Draw conclusions about the effects of road construction on traffic patterns. • Compare information from different maps that show available land and zoning districts. 	<ul style="list-style-type: none"> • Maps • Charts • Graphs • GIS • Spreadsheets
Answering Geographic Questions helps you apply information to real-life situations and problem solving	<ul style="list-style-type: none"> • Present a report showing the results of a case study. • Suggest locations for a new facility based on geographic data gathered. 	<ul style="list-style-type: none"> • Sketch maps • Reports • Research papers • Oral or multimedia presentations

One of the most important geographic tools is the ability to think geographically. The five skills identified above are key to geographic understanding.

▲ CRITICAL THINKING

- 1. Analyzing** What types of patterns might you recognize by comparing aerial photographs of a region over a specific time period?
- 2. Identifying the Central Issue** Provide a real-life example of how you might apply three of the skills described in the chart. Explain the issue, including which skills you chose, and how they would be used.

20B examine the economic, environmental, and social effects of technology such as medical advancements or changing trade patterns on societies at different levels of development.

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

Those with knowledge of human geography find work in many areas such as health care, transportation, population studies, economic development, public policy, and international economics. Human geographers with a background in urban planning are hired by local and state government agencies to focus on projects such as housing and community development and parks and recreation planning. An economic geographer examines human economic activities. He or she may work at such tasks as market analysis and site selection for stores, factories, and restaurants. A regional geographer studies the features of a particular region and may assist government and businesses in making decisions about land use. Geographers can also find employment as writers and editors for publishers of textbooks, maps, atlases, news and travel magazines, and Web sites.

One of the most important tools of a geographic perspective is the ability to think geographically about the world. Geographers use five basic skills that are key to geographic understanding: asking, acquiring, organizing, analyzing, and answering geographic questions. Asking geographic questions provides information that can be used to better understand one's surroundings. As knowledge is acquired, it can be applied to recognize patterns and relationships that will help in real-life situations.

READING PROGRESS CHECK

Listing List at least three fields outside of geography that use geography skills.

Maps can be used to determine site and situation.

CRITICAL THINKING

- 1. Speculating** What could this hiker's map tell her about the site and situation of the landscape she is viewing?
- 2. Describing** Explain how a map, such as the one shown, could be used to identify spatial relationships.

The Elements of Geography

GUIDING QUESTION *What are the elements of geography?*

Geography uses the geographic perspective to study the peoples, places, environments, histories, and cultures of the world's regions. Geographers study the interactions between peoples, places, and environments to explain why and how patterns of interaction occur. There are six overall elements geographers consider in their work: the world in spatial terms, places and regions, physical systems, human systems, environment and society, and the uses of geography.





The World in Spatial Terms

Spatial relationships link people and places based on their locations and relationships to each other. Location is a reference point for geographers in the same way that dates serve as reference points for historians.

One way of locating a place is by describing its absolute location—the exact spot at which the place is found on the Earth. To determine absolute location, geographers use the system of latitude and longitude. On a day-to-day basis, humans tend to identify a place based on relative location—a place’s location in relation to another place. For example, New Orleans is located near the mouth of the Mississippi River. Knowing the relative location of a place helps you to think spatially. By creating a mental map based on relative location, you can orient yourself in space and develop an awareness of the world around you.

The broad or specific definition of a geographic location based on relative or absolute location also takes into account a place’s site and situation. **Site** is the specific location of a place, including its physical setting. For example, the site of San Francisco is its location at the end of a peninsula in northern California. **Situation** refers to a more general location, defined by a place’s geographic position in relation to other places and its connections to other regions. San Francisco’s situation is a port city on the Pacific coast, close to California’s agricultural lands.

Places and Regions

A place has physical and human significance. It has distinguishing characteristics defined by its features and surroundings. Geographers study and assess the similarities and differences between places to express what features are unique to each place. To interpret the Earth’s complexity, geographers group places with similar characteristics into regions. A region can be defined by physical traits such as climate, landforms, river systems, soils, vegetation, animal life, and

GEOGRAPHY CONNECTION

Some regions are not defined by data or specific boundary lines but instead by culture and speech, such as in this map showing perceptual regions of the United States.

1. THE WORLD IN SPATIAL TERMS

According to the map, in which region do you live?

2. PLACES AND REGIONS

What aspects of culture do you think define a perceptual region in the United States?

site the specific location of a place, including its physical setting

situation the geographic position of a place in relation to other places or features of a larger region



Rice paddy fields in southern China reflect both human systems and physical systems at work.

▲ CRITICAL THINKING

- 1. Categorizing** What type of region would you categorize the rice paddy fields as being? Explain your choice.
- 2. Formulating Questions** Create one question you would ask the people living in the area that could help you determine whether the rice paddy is a formal or perceptual region.

formal region a region defined by a common characteristic, such as production of a product

primary of first rank, importance, or value

functional region a central place and the surrounding territory linked to it

natural resources. A region can also have human significance, as defined by characteristics such as language, religion, political units, trade networks, and population distribution. Geographers identify three types of regions: formal, functional, and perceptual.

A **formal region** features a unifying characteristic, such as a product produced in that region. For example, the Corn Belt is a band of farmland stretching from Ohio to Nebraska in the United States. It is a formal region because corn is its **primary** crop. A **functional region** incorporates a central node and a surrounding area that is connected to the node by some defined function. For example, a cell tower provides the central node for a surrounding area in which cell phone users can obtain phone reception. A **perceptual region** uses a looser standard for characterization, defined more by commonly accepted tradition or value than by objective data. For example, the term “heartland” refers to a central area in the United States in which traditional values of family and hospitality are believed to predominate. A perceptual region could also be labeled a vernacular region. This refers to patterns native to a particular region in spite of boundary lines. The Creole dialect that is spoken in southern Louisiana is an example of a vernacular region. It is defined more by the culture and speech of the region than by a designation of state and city boundaries.

Physical Systems and Human Systems

Because geography can cover a broad range of themes, geographers divide their focus into major branches: physical geography and human geography. Physical geography—climate, land, water, plants, and animal life—looks at these processes

The Island

“The island seems to have a tenacious hold on the human imagination. Unlike the tropical forest or the continental seashore it cannot claim ecological abundance, nor—as an environment—has it mattered greatly in man’s evolutionary past. Its importance lies in the imaginative realm. Many of the world’s cosmogonies, we have seen, begin with the watery chaos: land, when it appears, is necessarily an island. . . . In numerous legends the island appears as the abode of the dead or of immortals.”

—Yi-fu Tuan, *Topophilia: a Study of Environmental Perception, Attitudes, and Values*, 1974

DBQ PLACES AND REGIONS

What emotions do you feel when you think of an island? Explain whether it is based on your imagination or on real experiences.

perceptual region a region defined by popular feelings and images rather than by objective data

and their significance to humans. Human geography, or cultural geography, analyzes human activities and their relationship to the cultural and physical environments. Political, economic, social, and cultural factors can include themes such as urban development, economic production and consumption, and population change. Because physical and human geography are still very broad in their focus, they can be further divided into subject areas. For example, climatology is the study of climate and long-term atmospheric conditions and their impact on ecology and society. Historical geography is the study of places and human activities over time based on the geographic factors that have shaped them.

Geographers study how physical features and processes of land, water, and climate interact with plants and animals to create, support, or change ecosystems. An ecosystem is a community of plants and animals that depend upon one another and their surroundings for survival. Geographers also study the processes by which people operate across Earth’s surface—how they settle the Earth, form societies, and create permanent features. A recurring theme in geography is the ongoing movement of people, goods, and ideas. Human migration and settlement, as well as the exchange of ideas and practices among cultures, can over time transform societies, traditions, and the landscape in which humans live. In studying human systems, geographers look at how people compete or cooperate to change or control aspects of the Earth to meet their needs.

Environment and Society

The relationship between people and their physical environment is a theme embodied by human-environment interaction. Ways in which people use their surroundings, ways in which they change it voluntarily and involuntarily, and the consequences that result from such human-environment interaction are very important themes for geographers. Pollution, construction, human population growth, conservation of parks, and reintroduction of species into the wild are just a few of the ways humans change the physical environment. Yet the physical environment can also have an effect on humans. For example, physical barriers such as rivers, mountains, and deserts limit human movement and growth. Natural phenomena such as hurricanes, earthquakes, and heavy storms or droughts force humans to adapt their activities and lifestyles to the changing environment. By understanding how the Earth’s physical features and processes shape and are shaped by human activity, geographers help societies make informed decisions about their relationship with their surrounding physical environment.

The Uses of Geography

Geography provides insight into how physical features and living things developed in the past. It also takes into account current trends regarding the physical and human environment in order to plan for future needs. Planning and policy making must account for interactions between humans and the natural environment. Data regarding physical features and processes can highlight suitable sites for resource extraction or for human habitation. Urban planners analyze trends in human growth within a specified region to determine where and what systems, such as schools, roads, public services, and businesses, are necessary for supporting a growing population. Geographers analyze past data in order to determine effective future actions to sustain and support both the natural environment and human development. Although people trained in geography are in great demand in the workforce, many of them do not have geographer as a job title. Geography skills are useful in so many different situations that geographers have more than a hundred different job titles.



Scientists study Russell Glacier in Greenland and the causes of its rapid melting.

▲ CRITICAL THINKING

1. **Formulating Questions** List three questions the scientist might be asking about the melting glacier.
2. **Evaluating** What words would you use to describe the site where the scientist is located?

Geographers work in a variety of jobs in government, business, and education. They often combine the study of geography with other areas of study. For example, an ecologist must know the geographic characteristics of a place or region in which he or she studies living organisms. Similarly, a travel agent must have knowledge of the physical and human geography of a place in order to plan trips for clients.

✓ READING PROGRESS CHECK

Identifying What are the three types of regions?

Research Methods

GUIDING QUESTION *What methods do geographers use to conduct their work?*

To do their work, geographers use several research methods. Direct observation and measurement, mapping, interviewing, production and use of statistics, and the use of technology are all specialized research methods used by geographers.

Direct observation and measurement involves analysis of patterns of human activity that take place on the Earth's surface. Geographers using this method will visit a place to gather information about it from what they observe of the place and its geographic features. Geographers also employ remote sensing from satellite images and aerial photographs to locate specific information without having to visit the site in person. For example, aerial photographs or satellite images can be used to locate mineral deposits, to determine the size of freshwater sources, or to see the extent of urban sprawl.

Mapping is essential to geographers. Many findings from geography research can be shown visually and spatially on maps better than they can be explained through statistical methods or written documents. Complex information can be collected and shown in more easily understood terms through using maps that highlight features, patterns, and relationships of people, places, and things. Maps

also are useful for making comparisons. For example, a geographer might compare population density maps or transportation networks maps of two counties in order to determine where to build new schools.

Interviewing requires a geographer to ask questions rather than just collect data, images, and on-site observations. Specifically, for human geographic studies, geographers may want to find out how people think or feel about certain places. They may also want to examine the ways in which people's beliefs and attitudes have affected the physical environment. To **obtain** such information, geographers interview their subjects. They can do this by selecting a particular group of people for study. Rather than contacting every individual in the group, however, geographers use a carefully selected sample of people whose answers represent the larger group.

Geographers also analyze *statistics*. Numerical data, such as temperature and snowfall, can provide insight into a region's climate trends. Geographers use computers to organize and present this information in an understandable manner, as well as to look in detail at the data for patterns and trends. For example, studies that identify age, ethnicity, and gender of specified regions can emphasize possible trends within a human population. After identifying such patterns and trends, geographers use statistical tests to see whether their ideas are valid.

✓ READING PROGRESS CHECK

Defining What do geographers do?

Geography and Other Subjects

GUIDING QUESTION *How is geography related to other subjects?*

Geography has important relationships to other subjects. Geographers use geographic tools and methods to understand historical patterns, economies, politics and political patterns, and the impact of societies and cultures on the landscape.

To visualize what places could have looked like in the past, geographers take into account historical perspectives of the place. For example, to gather information about how a city has changed over time, geographers can collect information from historical sources regarding census data, economic output, birth and death rates, natural disasters, disease, and major **fluctuations** in population size. Such data can address questions concerning how human activities have changed the natural vegetation, or how waterways are different today than in the past. Such historical perspectives provide insight as to which institutions or development should be constructed to avoid repeating past complications between human growth and the physical environment.

Additionally, analysis of historical and current political patterns emphasizes changing boundary lines and government systems. Geographers are also interested in how the natural environment has influenced political decisions and how governments change natural environments. For example, in the 1960s the Egyptian government built the massive Aswān High Dam on the Nile River to help irrigate the land. The dam altered the Nile River valley and significantly impacted the region's people.

Human geographers, also called cultural geographers, use the ideas of sociology and anthropology to study human tendencies and past cultures and their influence on current traditions and social norms. Because people come from diverse cultural backgrounds, their interpretations of information and experiences differ depending on their frame of reference. For example, residents of a particular neighborhood may define boundaries based on location of activities, such as stores they frequent and people with whom they have contact.

obtain to gain or acquire, usually by planning or effort

fluctuation a shift from a previous condition

SKILLS PRACTICE

When you hear a new academic vocabulary word, be sure to use it. For example, you can use it in sentences you write and in discussions with your classmates. Practice using the academic vocabulary words *obtain* and *fluctuation* by writing a sentence containing each of these words.



The natural shelter and deep waters of Victoria Harbor make Hong Kong one of the world's largest shipping ports.

▲ CRITICAL THINKING

- Analyzing** What factors might a geographer study to learn about the economy of a particular country?
- Making Connections** How is interdependence important to economic activity?

services are provided. Geographers analyze how locations are chosen for various economic activities. Where and what human groups choose to produce and consume depend on a variety of factors: location of natural resources for mining and extracting, fertile soil for farming, suitable climates for living and producing, and proximity to good transport routes and other cultures to establish trade relations.

Economic activity relies on not only a society's production and use of goods, but also on the transport of goods between cultures in the form of trade. Such interdependence between global economies is part of what defines relationships and communication between various cultures. The growth of technological and communication systems in today's world affects these trade patterns. In more developed and industrialized countries, the ability to call a client halfway across the world, reduce production time by mechanical production instead of human labor, use the Internet to communicate ideas instantly, and send goods overnight via air delivery are examples of how innovations in technology have increased the speed and efficiency of the movement of information and goods.

✓ READING PROGRESS CHECK

Naming What is another name used for human geographers?

However, the local governments create neighborhood boundaries to facilitate services and maintenance. Furthermore, other neighborhood boundaries may be created by police departments and school districts that have different needs to meet and different reasons for creating spatial divisions. Human geography can be used to study the relationships between people, places, and environments by mapping information about them into a spatial context using GIS and other geospatial technologies. Human geographers study the way people are rooted in particular places and how they have constructed various types of regions. Some geographers study the feelings one has about a place, which is closely connected with theories in psychology and behavioral science.

Geographers study economies to understand how the locations of resources affect the ways people make, transport, and use goods, and how and where

LESSON 2 REVIEW



Reviewing Vocabulary

- Understanding Relationships** How are site and situation different?

Using Your Notes

- Listing** Using your graphic organizer, write a definition of *geography* in your own words.

Answering the Guiding Questions

- Identifying** What is the spatial perspective?

- Categorizing** What are the elements of geography?

- Organizing** What methods do geographers use to conduct their work?

- Evaluating** How is geography related to other subjects?

Writing Activity

- Informative/Explanatory** Write a paragraph explaining how geography helps us interpret the past, understand the present, and plan for the future. **1A**