CHAPTER 2

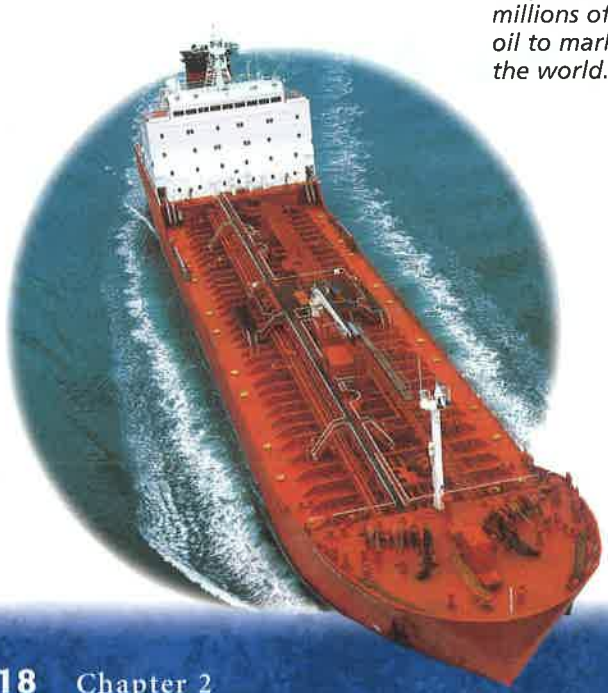
A Land Called Texas

The Texas oil industry provides thousands of Texans with jobs.

South Texas produces large crops of oranges and other citrus fruits.

TEXAS	In 1997 Texas produced more than 465 million barrels of oil worth some $8.5 billion.	Texas has an estimated 23 billion tons of lignite, a type of coal.	More than 6 million acres of Texas land are irrigated.	The Ogallala Aquifer is the largest underground water source in Texas.
U.S. and WORLD	In 1997 the United States produced more than 2.3 billion barrels of oil worth some $40.6 billion.	The United States produced more than 85.8 million tons of lignite in 1998.	The United States used 81 billion gallons of water for irrigation in 1995.	The Ogallala Aquifer is also the largest aquifer in North America.

Large oil tankers ship millions of barrels of oil to markets around the world.



Build on What You Know

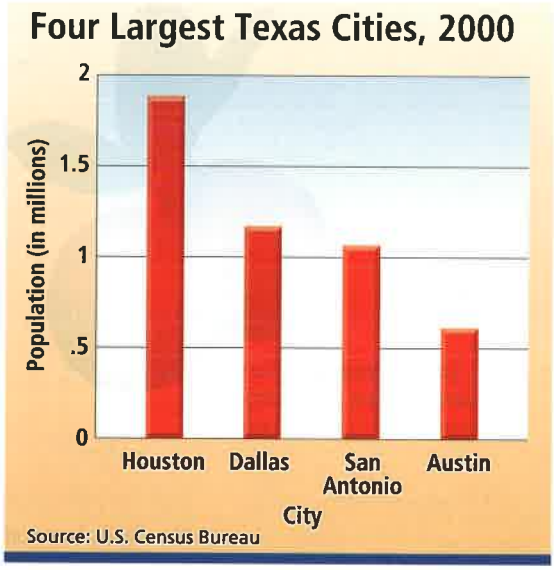
Texas is a large and diverse state. The tools of geography will help you learn about the climate, landforms, people, and resources of Texas. The state's diverse population and wide variety of physical features help make Texas unique.

Social Studies Skills Workshop

go.hrw.com TAKS PREP ONLINE keyword: ST3 T1

Interpreting Graphs TEKS

Study the graph below. Then use the information in the graph to help you answer the questions that follow.



1. Approximately how much larger is Houston's population than that of the next largest city?
   - **a.** 750,000 people
   - **b.** .75 people
   - **c.** 1,500,000 people
   - **d.** 1.5 people

2. What advantages does a bar graph have in presenting the information on population distribution?

Analyzing Primary Sources TEKS

Read the following quote from early Texas settler Noah Smithwick. Then answer the questions.

"[Growing corn] was no very difficult matter near the coast, where there were vast canebrakes all along the rivers. The soil was rich and loose from the . . . crops of [wild] cane that had decayed on it. In the fall, when the cane died down, it was burned off clean. The ground was then ready for planting, which was done in a very primitive manner, a sharpened stick being all the implement [tool] necessary. With this they made holes in the moist loam [soil] and dropped in grains of corn. . . . The only water obtainable was that of the sluggish river, which crept along between low banks thickly set with tall trees, from branches of which . . . [hung] long streamers of Spanish moss swarming with mosquitoes and malaria."

3. Which of the following statements would be least important to a geographer?
   - **a.** The quote describes the arrangement of things in the landscape of an area.
   - **b.** The quote describes a relationship between environment and society.
   - **c.** The quote offers clues to the physical and human systems operating in Texas.
   - **d.** The quote is of historical value.

4. Based on this quote, what conclusions could be drawn about where pioneers settled and why?

Alternative Assessment

Linking to Community TEKS

Think about some of the physical and human characteristics that help define an area in your community. Physical characteristics might include the plant life, landforms, or climate of your community. The human characteristics might include the types of industry, location of roads, or where people live. Create a map of the area and label some of the characteristics you have included.

internet connect

Internet Activity: go.hrw.com
KEYWORD: ST3 TX1 TEKS

Access the Internet through the HRW Go site to research how maps are made, what maps can illustrate, and how maps are formatted. Then apply what you have learned by creating a map that illustrates the relative and absolute location of your school. Make sure your map has a directional indicator, a legend, and a scale.

Caddo Lake is a popular recreation area in East Texas.

Texas parks and natural areas provide a winter home for the endangered whooping crane.

In 1999 there were more than 227,000 farms in Texas.

In 1999 there were 2.2 million farms in the United States.

Agriculture added some $40 billion to the Texas economy in 1998.

Agriculture added more than $220 billion to the U.S. economy in 1998.

Toledo Bend Reservoir on the Sabine River holds more than 5.5 billion cubic meters of water.

The largest reservoir in the world is the Owen Falls Reservoir in Uganda, Africa.

Caddo Lake is the largest natural lake in Texas, covering more than 39 square miles.

The largest natural lake in the world is the Caspian Sea, which covers more than 143,000 square miles.

American farmers grow millions of bushels of corn each year.

You Be the Geographer

Themes Journal

What's Your Opinion Do you **agree** or **disagree** with the following statements? Support your point of view in your journal.

- **Geography** A region's physical features, such as land and water, are always modified by humans.
- **Culture** Immigrants moving into an area add to its cultural traditions.
- **Economics** A region's resources always influence its economy.

If you were a geographer . . .

What would you find most interesting about Texas geography?

Section 1

The Physical Landscape of Texas

Read to Discover

1. What landforms are found in Texas?
2. What types of water resources exist in Texas?

Why It Matters Today

Texans have long relied upon the state's sources of water. Texas has many different water resources, including aquifers and reservoirs. Use CNNfyi.com or other **current events** sources to learn about water resources. Record your findings in your journal.

Define

- plains
- plateaus
- ranges
- tributaries
- reservoirs
- irrigation
- aquifers

Identify

- Ogallala Aquifer
- Edwards Aquifer

In 1966 the Caverns of Sonora were named a National Natural Landmark.

The Geographer's World

In the summer of 1956, Jack Burch and James Papadakis discovered a small opening in a West Texas limestone cliff. They decided to squeeze through the 18-inch hole. Once inside, the two adventurers found a large cave with beautiful rare stalactites—rock formations that hang like icicles. The men had discovered one of the hidden natural treasures of Texas. The cavern was opened for public tours four years later. The Caverns of Sonora are among the most beautiful caves in the world.

Landforms of Texas

The Caverns of Sonora are just one of many natural treasures in Texas. To locate Texas on a globe, find the Northern Hemisphere. This northern half of the planet lies between the North Pole and the equator. Texas is also in the Western Hemisphere—the half of the planet west of the prime meridian. Located in the southern half of the North American continent, Texas borders a large body of water called the Gulf of Mexico. The state is located in the central and southern region of the United States. Texas is just north of Mexico, west of Louisiana, south of Oklahoma, and east of New Mexico. Arkansas borders the northeastern corner of Texas.

The varied landscape of Texas includes canyons, islands, valleys, and even extinct volcanoes. The four major landforms in Texas are hills, mountains, plains, and plateaus. **Plains** are areas of flat or gently rolling land without a sharp rise or fall in elevation. **Plateaus** are areas of flat elevated land that drop sharply on one or more sides.

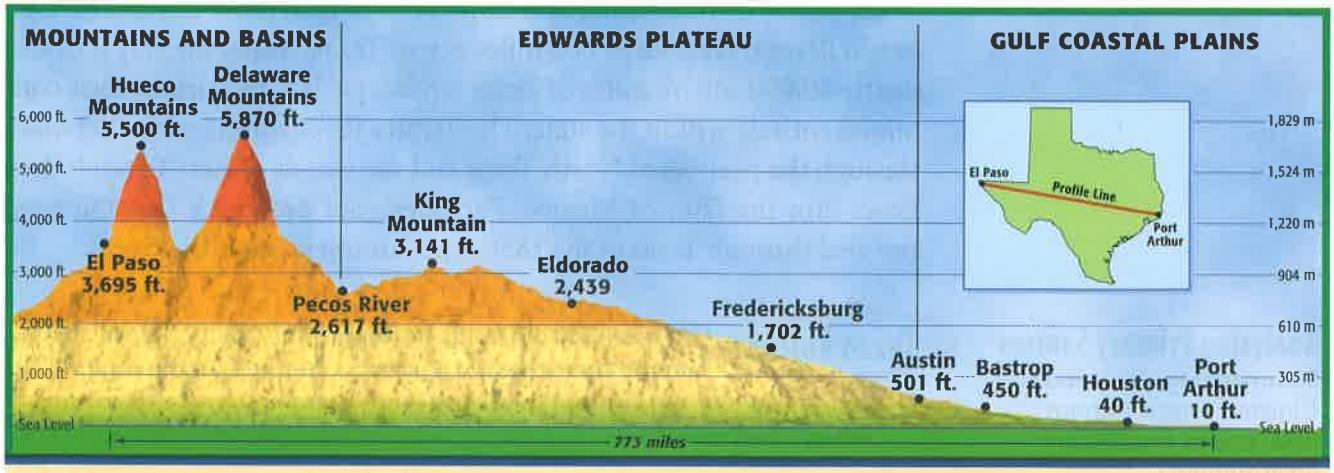
Plains cover much of the Gulf Coast, the Panhandle, North Texas, South Texas, and West Texas. These flatlands help to define the Texas landscape. One visitor noted that the Gulf Coast plains were "so perfectly flat that the eye embraced an extent [distance] of many miles." Many of the Texas plains are interrupted by hills. The easternmost part of Texas is covered by forests. To the west lie gently rolling prairies, or treeless grasslands. Central Texas has rugged hills, including those in the Hill Country. West of the Hill Country lies the Edwards Plateau, which rises in elevation from east to west.

West of the Edwards Plateau, the landscape becomes rocky. Several different **ranges**, or groups of mountains, rise west of the Pecos River. The highest point in Texas, Guadalupe Peak, is part of the Guadalupe Mountains. Although West Texas has some mountains, most of the state is covered by plains.

TEKS **Reading Check** **Summarizing** How does the Texas landscape change from east to west?

The Texas River System

Texas has several water features, including lakes, rivers, and streams. The largest body of water is the Gulf of Mexico, which is an important resource for Texas. It provides a source for fishing and shrimping as well as an area for recreation. Water from all of the rivers and streams in Texas eventually flows into the Gulf of Mexico.



TAKS Skills *Interpreting Charts* Moving from east to west, the elevation of Texas rises and the landscape becomes more rugged. How much higher are the Delaware Mountains than Port Arthur? TEKS

Interpreting the Visual Record

Texas plant life. *Many Texas rivers run through the prairies of Central Texas, providing water to plant and animal life.* ***What plant life can you identify in this photograph?***

Texas has more than a dozen major rivers and some 11,000 streams. The Texas river system can be divided into several groups. A number of rivers and smaller streams in the northern part of the state flow into the Mississippi River. These include the Red River and Canadian River. A second group of rivers begins in Texas and neighboring states. These rivers flow parallel with one another directly into the Gulf of Mexico. They include the Brazos, Colorado, Neches, Nueces, Sabine, and Trinity. The third group consists of the Rio Grande and its **tributaries**. A tributary is any smaller stream or river that flows into a larger stream or river. The Pecos River is an important tributary to the Rio Grande.

Every one of these Texas rivers has its own special character. The Rio Grande is by far the longest. It begins as a snow-fed mountain stream in Colorado. From there, it flows 1,896 miles through New Mexico down desert canyons and coastal lowlands to the Gulf of Mexico. For 1,254 miles the Rio Grande forms the international boundary between the United States and Mexico. The Comal—one of the shortest rivers in Texas—rises from a spring and flows for less than three miles. The Colorado River travels some 600 miles across Texas. Along the way it drains nearly 40,000 square miles of Texas landscape. It is the largest river contained entirely within the state. The Trinity River travels some 550 miles through the prairies of North Texas and the woods of East Texas. It then flows into the Gulf of Mexico. Park designer Frederick Law Olmsted traveled through Texas in the 1850s and commented on the river.

Analyzing Primary Sources
Summarizing What did Olmsted suggest about how Texans modify the environment?

Texas Voices

"These bottom lands bordering the Trinity [River] are among the richest of Texas. . . . High up, in the region of the Forks of the Trinity [River], are lands equally suitable to cotton, wheat, and corn."

—Frederick Law Olmsted, *Journey through Texas*

Reading Check **Contrasting** How do Texas rivers differ from each other?

Texas Lakes and Aquifers

Texas has few natural lakes. Caddo Lake, in Northeast Texas, is the largest. However, the state has hundreds of lakes built by people. Texans built dams along rivers to help control floods and to create **reservoirs**. These artificial lakes store water that is often used as drinking water for towns and cities. Reservoirs also serve as places for recreation. Some reservoirs are important sources for **irrigation**, or watering of crops.

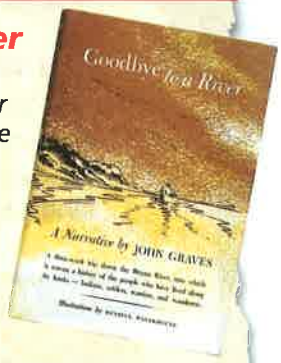
Water is also found in the state's **aquifers**. Aquifers are formations of natural gravel, rock, and sand that trap and hold rainwater underground. Refilling, or recharging, them with water is typically a slow process. In Texas several major aquifers provide water for farms, homes, and industry. The **Ogallala Aquifer** is the largest underground water source in the state. The aquifer stretches from West Texas and New Mexico north to South Dakota. Almost 95 percent of the water pumped out of the aquifer is used for irrigation. Just to the south, the **Edwards Aquifer** provides water for San Antonio, Austin, and the rest of Central Texas. The largest springs in Texas come from the Edwards Aquifer. A spring is a natural outpouring of water from underground. These springs provide a place of recreation as well as a source of water.

TEKS **Reading Check Analyzing Information** How have Texans used the state's natural resources?

Connecting To Literature

Goodbye to a River
John Graves

John Graves grew up near Fort Worth and visited the Brazos River as a child. As an adult, Graves traveled by boat down the Brazos. The following excerpt is from an account of his journey, published in 1961.



For scores of years no [population] boom has brought people to its banks; booms elsewhere have sucked them thence. Old respect for the river's occasional violence makes farmers and ranchers build on high ground away from the stream itself, which runs primitive and neglected. When you paddle and pole along it, the things you see are much the same things the Comanches and the Kiowas used to see, riding lean ponies down it a hundred years ago to raid the new settlements in its valley.

According to Graves, why do farmers and ranchers build on high ground away from the river?

Section 1 Review

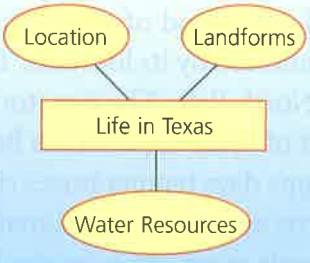
TEKS Questions 3, 5

go.hrw.com Homework Practice Online
keyword: ST3 HP2

1 Define and explain:
- plains
- plateaus
- ranges
- tributaries
- reservoirs
- irrigation
- aquifers

2 Identify and explain:
- Ogallala Aquifer
- Edwards Aquifer

3 Evaluating
Copy the graphic organizer below. Use it to explain how each feature of Texas geography affects life in the state.



4 Finding the Main Idea
a. Describe the location of Texas.
b. What landforms and water resources exist in Texas?

5 Writing and Critical Thinking TAKS
Drawing Inferences and Conclusions
Write an interview with a geographer about the different geographical features of Texas. Be sure to include questions and potential anwers.
Consider the following:
- landforms and water resources
- how Texans use these resources

Section 2

The Texas Climate

Read to Discover

1. How does the climate and weather of Texas affect the economy and life in the state?
2. How are Texas plants and animals affected by the state's landscape and climate?

Define

- humidity
- drought
- erosion
- habitat
- extinct

Identify

- Lady Bird Johnson

Why It Matters Today

Texas experiences many types of severe weather. Use CNNfyi.com or other **current events** sources to learn about recent occurrences of severe weather. Record your findings in your journal.

The Geographer's World

Severe weather such as tornadoes can cause deaths, injuries, and significant economic losses by destroying crops and homes.

In 1947, Texas Panhandle residents of Lipscomb County heard a loud trainlike noise. One rural resident stepped out of his front door and saw an approaching tornado. The tornado picked the man up hundreds of feet into the air. Another person went to the door after the man disappeared. The second man was also swept up by the tornado. After a few scary moments, both men were set down uninjured. When they searched for the house they found nothing but the foundation and a couch. Sitting on the couch was the first man's family, who were all unhurt—but understandably frightened.

Weather and Climate

Texas weather can change quickly and dramatically. But as in all places, weather in Texas follows certain patterns. Climate is an area's pattern of weather over a long period of time. The state's climate, particularly its temperature, is affected by its location. Texas is much closer to the equator than to the North Pole. The equator receives sunlight most directly. As a result, most of Texas experiences hot summers and long periods of sunshine. On some days temperatures rise above 110°F.

Wind patterns also affect the climate of Texas regions. The highest temperatures occur most often in the Rio Grande valley and areas of

north-central Texas. These areas are hotter because of winds that blow in from the west. These western winds cross deserts and carry warmer drier air into the state.

The temperature of water rises and falls more slowly than that of land. Thus, the Gulf of Mexico acts as an air conditioner for the Texas coast. In the summer, sea breezes keep nearby land areas cooler than areas farther inland. In the winter the Gulf keeps coastal lands warmer. However, Texans who live along the Gulf Coast experience higher **humidity**—the amount of moisture in the air. The high humidity often makes the warm temperatures along the Gulf Coast feel even hotter.

The Panhandle is also affected by winds. Winds that blow in from the north usually bring cooler temperatures to the Panhandle during winter months. The area often experiences cold fronts, or air masses, called northers. Temperatures can drop in a matter of minutes when a norther hits. A norther's effects are sometimes felt as far south as Central Texas and along the coast of the Gulf of Mexico. In winter a northern air mass can blow in with freezing winds, ice, and snow. One Texan in the 1840s described a norther.

Texas Voices

"These winds commonly burst forth so suddenly that the first notice of their advent [arrival] is a violent gust that almost checks respiration [takes your breath away]. . . . The temperature frequently falls fifteen to twenty degrees in as many minutes."

Francis Moore Jr., quoted in *Texas: A Geography,* by Terry G. Jordan, et al.

Elevation can also affect temperature. The temperature can be cooler in higher elevations because the air is not as dense. Air that is less dense does not absorb heat as well. Therefore, the mountains and higher elevations of West Texas generally have a cooler climate than the other parts of the state.

TEKS **Reading Check Summarizing** What weather patterns occur in different parts of Texas?

GLOBAL CONNECTIONS

El Niño

Sometimes global trends in weather affect Texas. Every few years, the ocean temperature rises along the west coast of South America. This trend, called El Niño, brings more winter rain than average to Texas. Most of this rain soaks the normally dry regions of West Texas and the Panhandle. **How does El Niño affect the Texas climate?**

Analyzing Primary Sources

Finding the Main Idea
According to Moore, how does one know a norther has arrived?

With their snow and ice, winter northers can damage Texas vegetation.

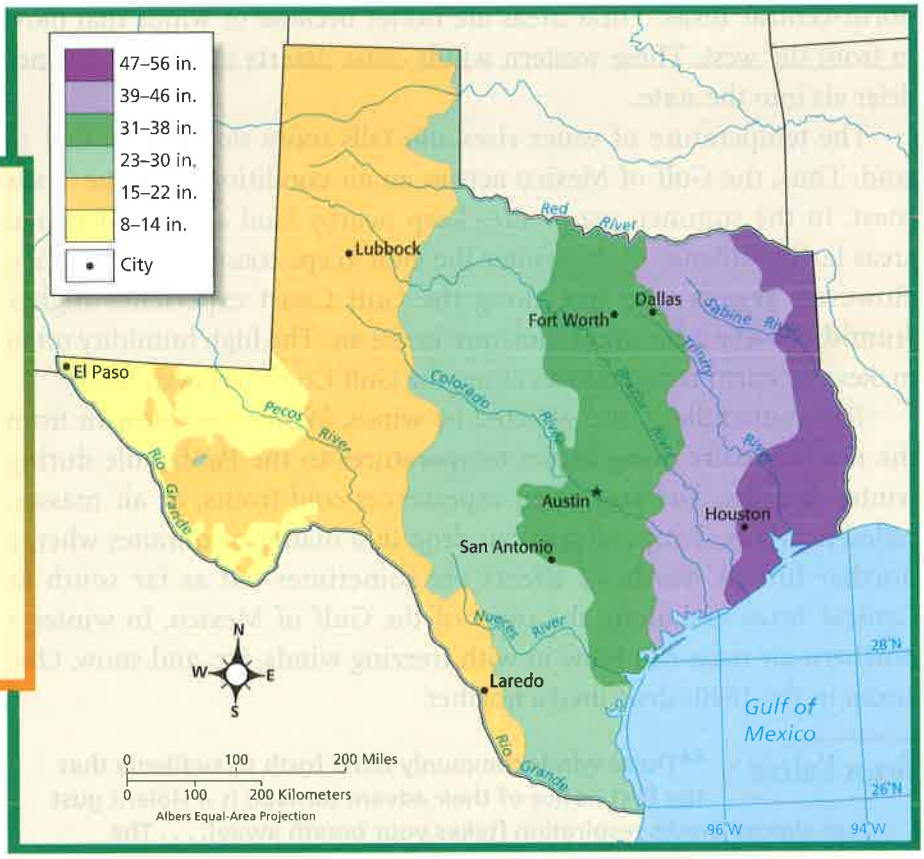
Zones of Annual Average Precipitation

interpreting Maps As you move from east to west, Texas receives less and less rainfall.

TAKS Skills

1. Places and Regions Which region of Texas receives the most precipitation?

2. Analyzing Information How much rain does the westernmost region receive? TEKS



Rainfall in Texas

An area's climate is also determined by precipitation, or moisture falling as rain, snow, sleet, hail, or mist. In Texas the amount of precipitation increases across the state from west to east. While the average rainfall total in West Texas is 8–14 inches per year, East Texas receives 39–56 inches of rain annually. One reason the eastern half of Texas receives more rain is that it is closer to the Gulf of Mexico. Warm moist air from the Gulf passes over East Texas. When this air passes over land, it meets cooler air masses. The warm air rises and often dumps rain on East Texas. The northern area of Texas receives part of its moisture from snow. The Panhandle usually gets several heavy snows each winter. The largest snowfall on record in Texas occurred in 1956, when the Amarillo area was blanketed by more than 30 inches of snow.

When rainfall is much less than the average, Texans experience a **drought**. These long periods without much rain can cause damage to crops. Texas had serious droughts in the 1890s, 1930s, 1950s, 1980s, and 1990s. Water shortages during droughts have become a greater problem as the state's population has grown. The growth of industry, irrigation, and population have placed greater demands on water resources such as aquifers. As a result, water supplies in some Texas towns have fallen to very low levels during dry summer months. Droughts are particularly damaging to the Texas farming and ranching industries.

Floods are another threat to Texans and their property. Within minutes, calm streams can become raging rivers. Rivers can overflow their banks and cover neighboring lands. Dams have helped control flooding in many areas of Texas. But other places, like the Hill Country, still have floods following heavy downpours.

Reading Check Evaluating How can changes in rainfall affect the economy of Texas?

Severe Weather

Texas gets its share of severe weather—including tornadoes, hurricanes, and blizzards. Tornadoes are violent funnel-shaped storms that develop inside severe thunderstorms. The swirling winds of tornadoes can reach speeds of more than 300 miles per hour. Texas is in the southern edge of "Tornado Alley," a region of the midwestern United States. In Texas, tornadoes usually appear in the Panhandle or the north-central part of the state. One account of a tornado in May 1868 described its effects. "[The tornado] blew cattle into the air, lodging them in trees, sucked all water from the Brazos River for a short distance and dumped a fifty-pound fish on dry land." In 1998 approximately 110 tornadoes struck Texas. Tornadoes have claimed hundreds of lives and caused millions of dollars in damage. The tornado season is usually from spring until the beginning of summer.

Toward midsummer, the season for hurricanes starts. The season lasts through early fall. These huge storms develop over the waters of the Atlantic Ocean and Gulf of Mexico. They come ashore with high

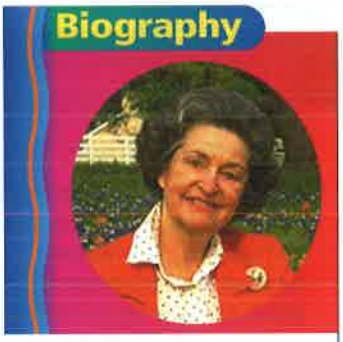
That's Interesting!

Texas Tornadoes

The wind from a tornado can cause strange things to happen. Tornadoes have driven blades of grass and pieces of straw into telephone posts. In one tornado a chicken was plucked of its feathers by the strong winds. It was otherwise left unhurt.

Interpreting the Visual Record

Hurricanes. *Hurricanes can strike the Texas coast with winds of more than 100 miles per hour.* ***How do you think severe weather like this could affect the Texas economy?***



Lady Bird Johnson

(1912–present)

Claudia Alta "Lady Bird" Taylor grew up near the East Texas town of Marshall. Claudia was nicknamed Lady Bird as a child. After earning a master's degree at the University of Texas, Lady Bird married schoolteacher Lyndon B. Johnson in 1934. Lady Bird helped her husband's political career as he rose to become a U.S. president during the 1960s.

Later in her life, Lady Bird Johnson became concerned about the decline of wild plant life. Lady Bird explained why she founded a center to study wildflowers in Austin. "The founding of the National Wildflower Research Center was my way of repaying some of the debt for the delight . . . Nature has given me all my life." **Why did Lady Bird Johnson establish the wildflower center?** TEKS

winds, heavy rains, and enormous tidal surges from the Gulf. In 1900 some 6,000 to 8,000 people were killed when a hurricane hit Galveston. An even larger storm, Hurricane Carla, came ashore in 1961 near Port Lavaca. Winds rose to 175 miles per hour, and storm tides reached 18.5 feet above normal. Despite early warnings, 34 people died. Hundreds more were injured.

Texas also gets hit by blizzards, or large snow storms. Those storms bring high winds, ice, and snow. They usually strike the Texas Panhandle or the north-central area of Texas. Blizzards are particularly dangerous to cattle and other livestock. The Great Blizzard of 1886–87 nearly destroyed the Texas cattle industry for almost a decade. With new research and technology, scientists are better able to predict when and where severe weather will strike. These developments have saved hundreds of lives.

TEKS **Reading Check Categorizing** When and where do Texans experience tornadoes, hurricanes, and blizzards?

Texas Vegetation

The diversity of the Texas climate has provided a hospitable place for native plants. All kinds of brush, bushes, native grasses, trees, and wildflowers are native to Texas. Climate, landforms, and soil all help to determine where a plant will grow. For example, only native plants that can survive long periods without water can grow in the dry lands of far West Texas. Short grasses grow in clumps there, as do cacti and plants such as yucca. Groups of coniferous, or cone-bearing, trees are found in the mountains. These trees include junipers, piñon pines, and ponderosa pines. In contrast, the prairies of the central and eastern regions of Texas have rich native grasslands.

The plains of South Texas are also hot and dry. However, they get a bit more rain than West Texas does. South Texas is often called "brush country" because it is covered by shrubs and small trees. Mesquite trees are scattered throughout this part of Texas. Oaks are also found in places with more rain. Palm trees grow along the warm Gulf Coast of South Texas. Cacti and various grasses add to the variety of the landscape. In the Panhandle, the plains stretch for miles without trees. However, the soil conditions and annual rainfall support many different kinds of grasses. Unlike in far West Texas, grasses cover most of the land in the Panhandle.

In contrast to dry western Texas, the eastern third of the state receives plenty of rain. The soil is also very fertile. As a result, bushes, forests, and tall grasses can easily grow there. Forests cover the Piney Woods in East Texas. Gideon Lincecum visited the region in the 1830s. He wrote that it was "the thickest woods I ever saw." The Piney Woods is full of loblolly, longleaf, and shortleaf pine trees. Elm, hickory, and oak trees are also common in East Texas.

Lady Bird Johnson, the wife of U.S. president Lyndon B. Johnson, worked to keep Texas highways beautiful by leading the effort to plant bluebonnets and other wildflowers along the state's roads. She also helped establish the National Wildflower Research Center in Austin. The center provides information on native plants. These plants help to prevent **erosion**, or soil loss, by holding soil in place with their roots. Many wild plants also contribute beauty to the Texas landscape.

Reading Check **Contrasting** How do the climate and geography of West Texas differ from those of East Texas? How do these factors affect plant life in Texas?

Texas Wildlife

The vegetation of Texas provides a **habitat**, or environmental home, to a wide variety of animals. The forests and prairies of Texas are home to many wild animals. These include armadillos, bears, deer, javelinas, prairie hens, raccoon, skunks, wildcats, wild turkeys, and wolves. Texas waters are also full of wildlife. These animals include alligators, catfish, oysters, redfish, shrimp, and hundreds of other types of sea life.

Wildcats live in many areas of Texas.

As the state's environment has changed, the habitats of some animals have been destroyed. The gray wolf and the whooping crane are just two animals that might become **extinct** in Texas. To be extinct means to die out completely or disappear. The populations of some animals that were once threatened with extinction have grown in recent years. For example, the buffalo population has grown dramatically.

Reading Check **Summarizing** What consequences have come from the modification of animal habitats in Texas?

Section 2 Review

TEKS Questions 3, 4a, 5

go.hrw.com Homework Practice Online keyword: ST3 HP2

1 Define and explain:

- humidity
- drought
- erosion
- habitat
- extinct

2 Identify and explain:

- Lady Bird Johnson

3 Analyzing Information

Copy the graphic organizer below. Use it to explain how each type of weather affects Texas.

	Where they occur	Effects on life and economy
Droughts		
Floods		
Tornadoes		
Hurricanes		
Blizzards		

4 Finding the Main Idea

a. How does the climate of East Texas differ from that of West Texas?

b. What weather and geographic features affect plant and animal life?

5 Writing and Critical Thinking TAKS

Summarizing In a letter to a friend, describe how the weather differs between East and West Texas.

Consider the following:

- weather trends in different regions
- the time of year

Section 3

Texans and Geography

Read to Discover

1. What groups came to Texas, and where did they settle?
2. What factors have led to the growth of the Texas population?

Define

- **immigration**
- **demography**
- **growth rate**
- **birthrate**
- **death rate**
- **age distribution**

Why It Matters Today

Texas has a growing population. Use CNNfyi.com or other **current events** sources to learn about population changes. Record your findings in your journal.

Texans of Czech descent often wear traditional clothing during festivals and cultural events.

The Geographer's World

Texas has become home for people from many different countries. These newcomers have brought cultural traditions with them. According to one Texan of Czech heritage, some Czech settlers practiced a special ritual. On Easter morning, a young Czech man would wash the face of the woman he liked. If the woman liked the young man as well, she would wash his face the day after Easter. This ritual marked the beginning of a relationship. While this old Czech tradition has faded from use, many other cultural traditions are preserved by Texans.

Who Texans Are

Texas is mostly populated by people who moved from other lands. As a result, Texans have many backgrounds, ethnicities, and races. Newcomers have brought unique cultural traditions and beliefs from their homelands. These differences contribute to the state's cultural diversity.

The first people to live in Texas were Native Americans who moved to the area thousands of years ago. After Europeans arrived, the population of Native Americans began dropping rapidly. Many Texas Indians died from warfare and diseases that the Europeans carried. During the 1700s and 1800s some Native American groups migrated to Texas from other parts of North America. In 2000 about 118,000 American Indians lived in Texas. Many Texas Indians hold religious ceremonies and

practice traditional ways of life. For example, the Alabama-Coushatta Indians hold traditional dances on their reservation near Lake Livingston.

Many Texans trace their ancestry to people who came from Europe. The movement of people from one country to another is called **immigration**. Some of the first European immigrants in Texas came from Spain. Most of these settlers came from Mexico, bringing with them the Spanish language and the Catholic faith. In recent times the largest number of immigrants to Texas have come from Mexico. In 2000 more than 6.6 million Hispanics lived in Texas. This number is more than 30 percent of the Texas population.

In 2000 the number of Texans who considered themselves white and not Hispanic was about 11 million. This number accounts for about 52 percent of the state's population. Some of these people's families first came to Texas in the early 1800s when settlers from the United States began coming to Texas. These settlers helped shape the economic system, education system, and laws of Texas. European immigrants also influenced Texas culture. Significant numbers of German, Czech, French, Irish, and other Europeans came to Texas during the 1800s and 1900s. Their presence is seen in place-names, foods, and other cultural traditions of Texas. For example, German polka music and food, such as sauerkraut, are common in some Texas Hill Country towns.

African Americans also have a long history in Texas. Many African Americans were brought to Texas as slaves during the early and mid-1800s. The African American population in Texas grew during the 1900s. In 2000 the state's African American population numbered more than 2.4 million, or about 12 percent of the Texas population that year. African Americans have influenced music, religious practices, and many other cultural traditions of Texas. For example, Scott Joplin, Huddie "Leadbelly" Ledbetter, and other African Americans in Texas helped develop ragtime, blues, and jazz.

In recent years more Asian Americans have made Texas their home. As of 2000 more than 560,000 Asian Americans lived in the state. An estimated 14 percent of immigrants to Texas in 2000 were Asian Americans. These immigrants have brought many foods and traditions. Asian Americans have brought religions such as Buddhism, Hinduism, and Islam to Texas, adding to the state's diversity.

TEKS **Reading Check Summarizing** What cultural activities have different racial and ethnic groups contributed to Texas?

Where Texans Have Settled

Some regions of Texas have been settled by people with a similar ethnic background. These groups have influenced the areas they settled. For example, people from Mexico have been migrating to the Rio Grande

Our Cultural Heritage

Religious Diversity in Texas

During its history, Texas has attracted many different groups of people. As new groups came, they brought their religious beliefs with them. Early Spanish settlers in Texas established Catholic churches. Later, American and European settlers built Methodist, Baptist, Lutheran, and other Protestant churches in their communities. Jewish settlers built synagogues. Today new groups continue to arrive in Texas. Buddhists from Vietnam and other Asian countries have built temples in several large Texas cities. Middle Eastern and Indian newcomers have established Islamic mosques and Hindu and Sikh temples. **How does the growing population of Texas affect the state's religious diversity?** TEKS

Interpreting the Visual Record

Cultural celebrations. *These children are participating in a Hindu festival outside of Austin. Asian immigrants have brought new cultural traditions to Texas.* ***How do you think cultural celebrations like this one help Asian immigrants maintain their cultural heritage?***

TEKS

valley for many years. As a result, Mexican influences are strong in South Texas. For example, many businesses and cultural institutions in this region have Spanish names.

Most early settlers from the southern United States made their home in East Texas. Many did so because the climate and soil are similar to those of the American South. Large groups of German and Czech immigrants have settled in Central Texas. These European immigrants have left their mark on the area. This can be seen in the place-names, foods, and cultural activities in the region. For example, German immigrants established the towns of Fredericksburg and New Braunfels. In these towns people still hold German music festivals called Sängerfests.

Historically, most Texans have lived in rural areas. As Texas industries grew, people began to move to cities. By 1950, more Texans lived in urban areas than on farms and ranches. As of 2000, about 85 percent of Texans lived in cities. Houston, Dallas, and San Antonio are three of the largest cities in the United States. Because most larger cities are in the central and eastern areas of Texas, the majority of Texans live in these regions. This growing population of city-dwellers marks a big change from the early days of rural settlement in Texas.

TEKS **Reading Check** **Finding the Main Idea** What settlement patterns have appeared in Texas?

The Growing Population of Texas

Texas is becoming more diverse as its population continues to increase. In 2000 Texas had a population of more than 20 million. To understand why the Texas population continues to grow, you must learn about **demography**. Demography is a branch of geography that studies human populations. When studying population **growth rate**—the speed of growth—demographers look at several factors. The **birthrate**

is the number of births per 1,000 people. The **death rate** is the number of deaths per 1,000 people. In 1999 the birthrate in Texas was 17.5, and the death rate was 7.3. Better health care is allowing more Texans, like other Americans, to live longer. As a result, the death rate has dropped. More Texans are being born than are dying. These two factors are contributing to the growing population of Texas. Immigration and migration are also factors in the growth of the Texas population. In 1998 more than 44,000 people came to Texas from foreign countries. Many of these newcomers have arrived from such different countries as Mexico, India, and Vietnam.

The number of multigenerational families with grandparents and great-grandparents is growing as Texans continue to live longer.

The growing population has brought many changes to Texas, including the age of the Texas population as a whole. As Texans live longer and more are born, the **age distribution** of the state changes. The age distribution is the portion of the population at each age. Some populations are, on the average, younger than others. This means they have a greater percentage of young people than other regions. With a higher percentage of young people, Texas is a younger state than most.

Gender distribution also affects population. As is common throughout the United States, there are just a few more women in Texas than men. One reason for this is women tend to live longer than men. In 1998 there were 95.5 men for every 100 women. This has not always been the case, however. At the beginning of the 1900s, there were approximately 110 men for every 100 women. Because Texas has a growing population, the age distribution and diversity of the state will continue to change. In addition, the population growth rate of the state will most likely increase over time.

Reading Check Summarizing What factors have contributed to the growth rate of the Texas population?

Section 3 Review

TEKS Questions 1, 2, 3a, 3b, 4

go.hrw.com Homework Practice Online keyword: ST3 HP2

1 Define and explain:

- immigration
- demography
- growth rate
- birthrate
- death rate
- age distribution

2 Evaluating

Copy the graphic organizer below. Use it to explain why the population of Texas continues to grow.

IMMIGRATION
+ BIRTHS
− DEATHS
= GROWTH

3 Finding the Main Idea

a. What groups of people came to Texas, and where did they settle in the state?

b. How have the changes in the age distribution and growth rate affected the Texas population?

4 Writing and Critical Thinking

TAKS

Analyzing Information Write an entry to a guidebook on Texas culture. Explain how these cultures benefit Texas.

Consider the following:

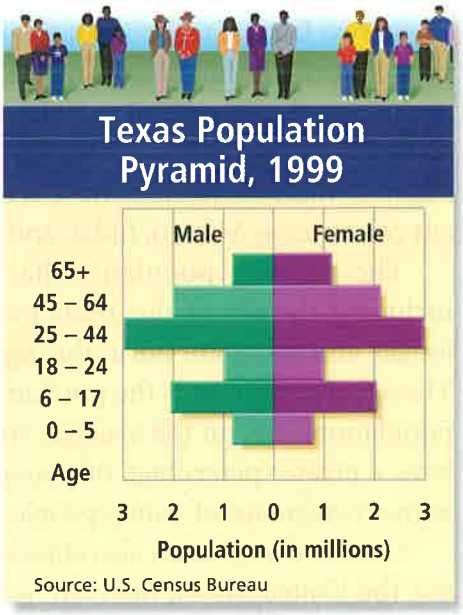
- where people of different cultures have settled
- how different cultures have influenced Texas

Connecting To

Geography

The Texas Population

The population of Texas is expected to grow. Projections, or estimates, of future populations help the government and businesses plan to meet the future needs of populations. Geographers can use pie graphs and charts to show changes in the racial and ethnic make-up of Texas.

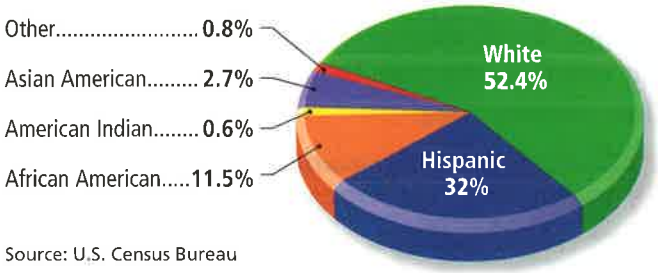


Geography Skills

Interpreting Data and Charts

1. What percentage of Texans have Hispanic and Asian American heritage?
2. In which age groups do women outnumber men in Texas?
3. How much is the total population of Texas expected to grow between 2000 and 2010?
4. Which group's population is expected to grow fastest between 2000 and 2010?
5. What effects do you think the changes in population will have on Texas? TEKS

Racial and Ethnic Heritage of Texas, 2000



Source: U.S. Census Bureau

Texas Population

	2000	2010*
Total Population	20,851,820	23,227,000
White	10,933,313	11,866,000
Hispanic	6,669,666	7,421,000
African American	2,404,566	3,058,000
American Indian	118,362	120,000
Asian American	562,319	762,000

Source: *Statistical Abstract of the United States* and U.S. Census Bureau
* Figures for 2010 are estimates.

Section 4

Natural Resources of Texas

Read to Discover

1. What natural resources can be found in Texas?
2. How have Texans used natural resources?

Define

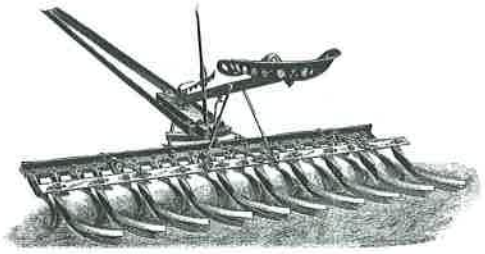
- **agriculture**
- **nonrenewable resources**
- **renewable resources**

Why It Matters Today

Texans raise a wide variety of crops and animals. Use CNNfyi.com or other **current events** sources to learn more about crops and animals in Texas today. Record your findings in your journal.

The Geographer's World

In June 1919 farmer Ruth Jones was planning to get married. Ruth and her sisters worked on their family's East Texas farm right up to the day before the wedding. Saturday afternoon, they leaned their hoes against a dead tree in the field and went home to prepare for the wedding on Sunday. On Monday morning they were back working in the fields. Farmers like Jones rarely take a break from their fields.



In the early 1900s Texas farmers used plows like this one in their field work.

Agricultural Resources

Texas has a wealth of natural resources that have contributed to the state's growth. The climate, soil, and water resources are all important to the Texas economy. Some Texans make their living from **agriculture**, or growing crops and raising animals. East Texas receives a lot of rainfall and has rich soil. Farmers in this region grow a wide range of crops, including fruits, nuts, and vegetables. Corn, tomatoes, and watermelon are some of the area's other important crops. The greater amount of rainfall in East Texas supports the growth of forests, which in turn supports a large timber industry. Along the southeastern Gulf Coast, farmers grow rice and vegetables. These crops do well in the region's warm wet climate.

Farmers in drier regions of Texas often use aquifers and rivers to irrigate their crops. The use of irrigation helps Texans overcome the climate limitations of many drier regions. In South Texas, farmers grow

Daily Life

Future Farmers of America

Learning to take care of livestock is an important undertaking for many Texas students. Many young Texans belong to organizations such as the Future Farmers of America (FFA). The FFA helps students learn and demonstrate the skill of raising livestock. The organization has some 7,000 chapters and more than 450,000 members. It helps students learn about the business of agriculture and livestock. The organization also helps to teach skills in leadership and teamwork. **Why do some Texans join the Future Farmers of America?**

crops such as alfalfa, citrus fruits, cotton, melons, and vegetables. The warm winters in the region allow farmers to grow crops year-round. Southern farmers can often grow two sets of crops per year. Farmers in the Panhandle can grow huge crops of wheat and cotton by drilling and pumping water from the Ogallala Aquifer to irrigate their fields.

The livestock industry is an important part of the Texas economy. The main livestock in Texas include cattle, chickens, horses, pigs, sheep, and turkeys. The native grasses and generally warm climate of Texas provide a natural place to raise livestock. Many livestock range the prairies of Central Texas, the Gulf Coast, and the Panhandle. In the dry Panhandle, ranchers pump water from aquifers and rivers for their livestock. Cattle ranching is a big business in Texas. In 1999, Texas ranchers had some 14 million head of cattle worth almost $7 billion. In the rockier regions of Texas, ranchers raise goats for their mohair, which is used in clothing. Texas produces more mohair than any other state in the nation.

Reading Check Evaluating How do climate and other geographic features affect what crops and animals are raised in different regions of Texas?

Energy Resources

Some of the most valuable natural resources are energy resources such as coal, natural gas, and oil. Energy resources are important because they supply fuel to run automobiles, heat homes, and power industry. The production of oil and natural gas in Texas is worth almost $20 billion per year. Texans have drilled oil wells in almost every region of the state and built refineries to process these resources. Thousands of Texans depend on jobs in the oil industry.

Coal, natural gas, and oil are **nonrenewable resources**. They cannot be replaced by Earth's natural processes. As a result, there is a limited supply of nonrenewable resources. Some Texans have turned to **renewable resources**—ones that are easily replaced by Earth's natural processes. Examples of renewable energy resources include sunshine, trees, and wind.

Texas has a number of other resources that are important to its economy. For example, the construction industry uses sand and gravel to make concrete and other building products. Texans also mine minerals such as copper, salt, and sulfur. These natural resources provide important products for the daily lives of Texans. The production of these materials also provides many jobs to Texans.

Reading Check Analyzing Information How have Texans developed technology to use the state's natural resources?

Using Resources Wisely

Texas has a wide variety of abundant natural resources. Many Texans have used these rich natural resources to build successful businesses. For example, the state's climate, soil, and water have enabled Texas farmers to raise crops, creating a multi-billion dollar agricultural industry in the state. Many other Texas industries, from oil production to construction, have grown by using fossil fuels and other natural resources of the state. A large part of the Texas economy relies upon these resources.

Texans work to balance the state's economic growth and the needs of the future. For example, an abundant supply of water in Texas aquifers is important to farmers and ranchers in drier regions of Texas. Every year billions of tons of water are pumped out of Texas aquifers for farming and human consumption. In some years enough water is pumped out of Texas aquifers to cover roughly 11 million acres of land to a depth of one foot. However, in many years only some 5 million acre-feet worth of water is refilled. The slow process of refilling aquifers has led some Texans to organize water conservation districts to manage water resources. These districts were created to help to ensure the long-term use of aquifers for irrigation and allow for a productive agricultural economy in the state.

Throughout the state's history, scientific and technological innovations have helped Texans use natural resources. Advances in drilling technology have made removing oil, natural gas, and water from underground more efficient and profitable. New advances in science and technology will bring further changes to the use of the state's natural resources.

Reading Check **Making Generalizations and Predictions** How do you think future scientific discoveries and technological innovations will affect the use of natural resources?

Citizenship and You

Recycling

Some Texas businesses have turned to recycling as a way to reduce costs and manage their use of resources. Recycling is the reuse of materials. Recycling can save energy, money, and natural resources. Texans have formed groups like the Recycling Coalition of Texas and the Texas Corporate Recycling Council. Organizations such as these have established conferences, education programs, and partnerships with Texas industries. **What have recycling organizations done to promote recycling?** TEKS

Section 4 Review

TEKS Questions 2, 3a, 3b, 4

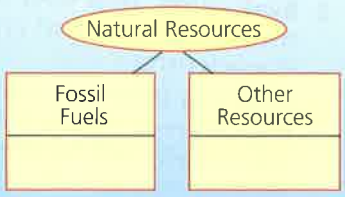
go.hrw.com Homework Practice Online keyword: ST3 HP2

1 Define and explain:

- agriculture
- nonrenewable resources
- renewable resources

2 Comparing and Contrasting

Copy the graphic organizer below. Use it to explain some of the state's natural resources.



3 Finding the Main Idea

a. How have geography and climate affected where Texans grow crops and raise livestock?

b. How do Texans make use of renewable and nonrenewable energy sources?

4 Writing and Critical Thinking TAKS

Evaluating Imagine that you are writing a friend from out of state. Explain how Texans have adapted to and changed their environment to make use of its resources.

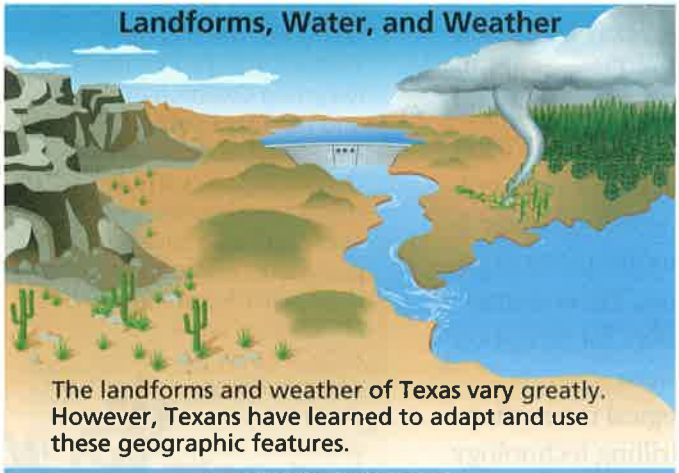
Consider the following:

- Texans using aquifers to irrigate in dry regions
- Texans drilling for oil and natural gas
- Texans using grasslands for livestock

CHAPTER 2 REVIEW

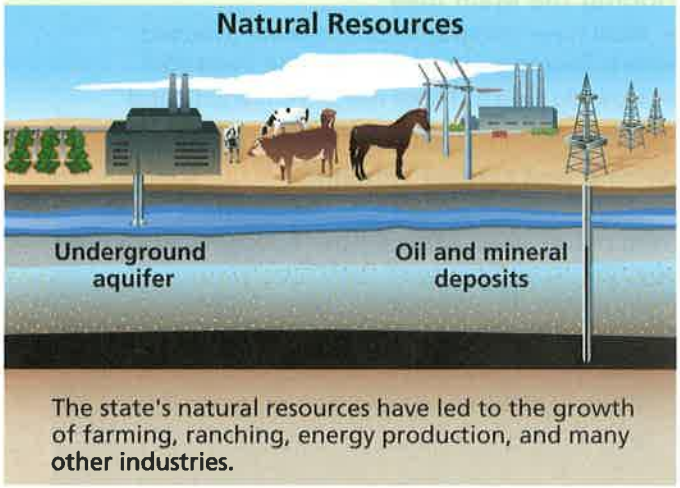
The Chapter at a Glance

Examine the following visual summary of the chapter. Then use the visual to create a model of life in Texas. TEKS



The landforms and weather of Texas vary greatly. However, Texans have learned to adapt and use these geographic features.

People have come to Texas from many different places. More Texans today live in cities than in rural areas.



The state's natural resources have led to the growth of farming, ranching, energy production, and many other industries.

Identifying People and Ideas TEKS

Use the following terms or people in sentences.

1. plains
2. irrigation
3. aquifers
4. humidity
5. drought
6. Lady Bird Johnson
7. growth rate
8. birthrate
9. death rate
10. age distribution

Understanding Main Ideas TEKS

Section 1 (pp. 20–23)

1. What types of landforms can be found in Texas?
2. How do some Texans use water resources?

Section 2 (pp. 24–29)

3. What types of severe weather threaten Texas?
4. How are Texas plants and animals affected by climate?

Section 3 (pp. 30–33)

5. What factors have contributed to a rising growth rate in Texas?
6. How has the age distribution of Texas changed?

Section 4 (pp. 35–37)

7. What types of crops and livestock are raised in Texas?
8. What natural resources can be found in Texas?

You Be the Geographer TEKS

Reviewing Themes

1. **Geography** How have Texas farmers and ranchers changed the landscape of Texas?
2. **Culture** How have people of different racial and ethnic backgrounds added to the diversity of Texas culture?
3. **Economics** In what ways have the natural resources and weather of Texas affected the economy of the state?

TAKS Practice: Thinking Critically TEKS

1. **Analyzing Information** How have Texans adapted to and modified the natural environment? What are some of the effects of these efforts?
2. **Evaluating** How does Texas benefit from the state's diversity of physical and human characteristics?
3. **Drawing Inferences and Conclusions** Make several predictions about how Texas and its natural resources will be affected by future scientific discoveries and technological innovations.

Social Studies Skills Workshop

go.hrw.com TAKS PREP ONLINE keyword: ST3 T2

Interpreting Maps TEKS

Study the map below. Then use the information on the map to answer the questions that follow.

Major Rivers of Texas

1. Which region of Texas has the fewest rivers?
   - **a.** East Texas
   - **b.** the Gulf Coast
   - **c.** South Texas
   - **d.** West Texas

2. How do you think these sources of water have affected where Texans have settled?

Analyzing Primary Sources TEKS

Read the following quotes about the now extinct passenger pigeon. Then answer the questions.

"Wild pigeons . . . in large numbers visit us in the fall and winter. . . . The wild pigeons establish a roost to which they return at night, after having gone during the day a great distance in search of food. They . . . crowd upon one another on the limbs of trees and bushes, so as to bend and even break them down."—O. M. Roberts

"I saw pigeons pass in the millions. . . . These passenger pigeons ate the mast, or acorns, from trees—it was their favorite food—and settlers went to their roost in Anderson County and killed them in great numbers, leaving them on the ground. They killed them with sticks to keep the pigeons from eating the acorns they wanted the hogs to have."—Charles R. Yarborough

3. Why do pigeons leave their roosts during the day?
   - **a.** They leave to find food.
   - **b.** They leave to migrate.
   - **c.** They like to fly.
   - **d.** They leave to find a new roost.

4. How do Roberts's and Yarborough's accounts differ? How are they similar?

Alternative Assessment

Cooperative Learning TEKS

Work with a small group to complete the following activity. Each person in your group should select one of the following features of Texas geography: a) landforms b) water resources c) vegetation d) animal life e) weather. Each member should pose questions and provide answers for a quiz show based on some of the geographic features of Texas. Be sure to ask questions about the distribution and patterns of these features. Each group may wish to quiz its members, awarding points for correct answers.

internet connect

Internet Activity: go.hrw.com
KEYWORD: ST3 TX2 TEKS

Access the Internet through the HRW Go site to research the formation of the Edwards Aquifer and its importance to urban and rural residents, wildlife, and the local economies of South and Central Texas. Then write an informative essay to report what you have found. Make sure you use standard grammar, spelling, sentence structure, and punctuation.