

CHAPTER
22

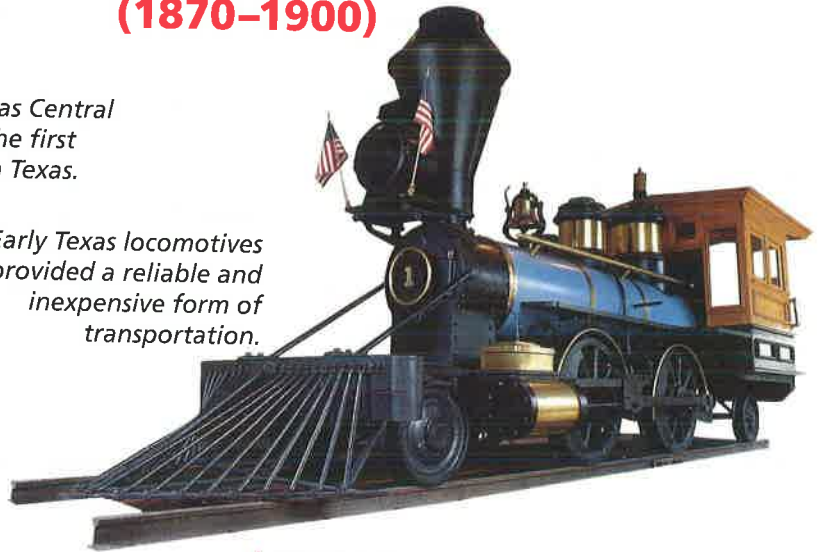
Railroads and Farming

(1870–1900)

The Houston and Texas Central Railway was one of the first railroad companies in Texas.



Early Texas locomotives provided a reliable and inexpensive form of transportation.



TEXAS

1870 Texas has 583 miles of rail lines.

1876 The Texas legislature passes a law that allows the state to fund railroads with land grants.

1881 The Texas and Pacific Railway meets the Southern Pacific line near El Paso, forming the first trans-continental railroad route through Texas.

1870

1874

1878

1882

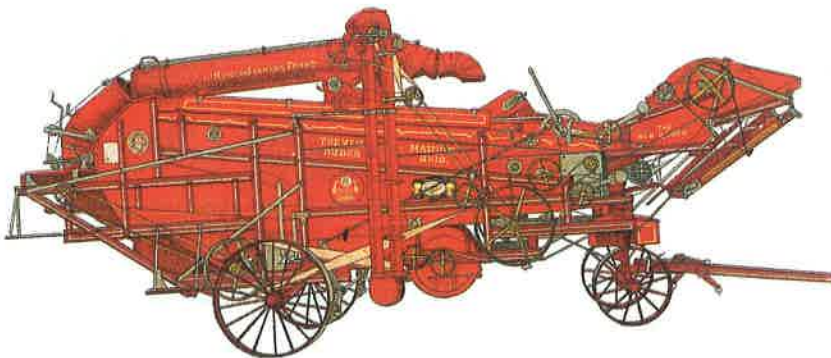
U.S. and WORLD



1875 The Huber Manufacturing Company, which builds threshers and other farm machinery, is incorporated.

1880 American farmers grow almost \$325 million worth of cotton.

1882 Thomas Edison installs electrical power plants in New York City and London.



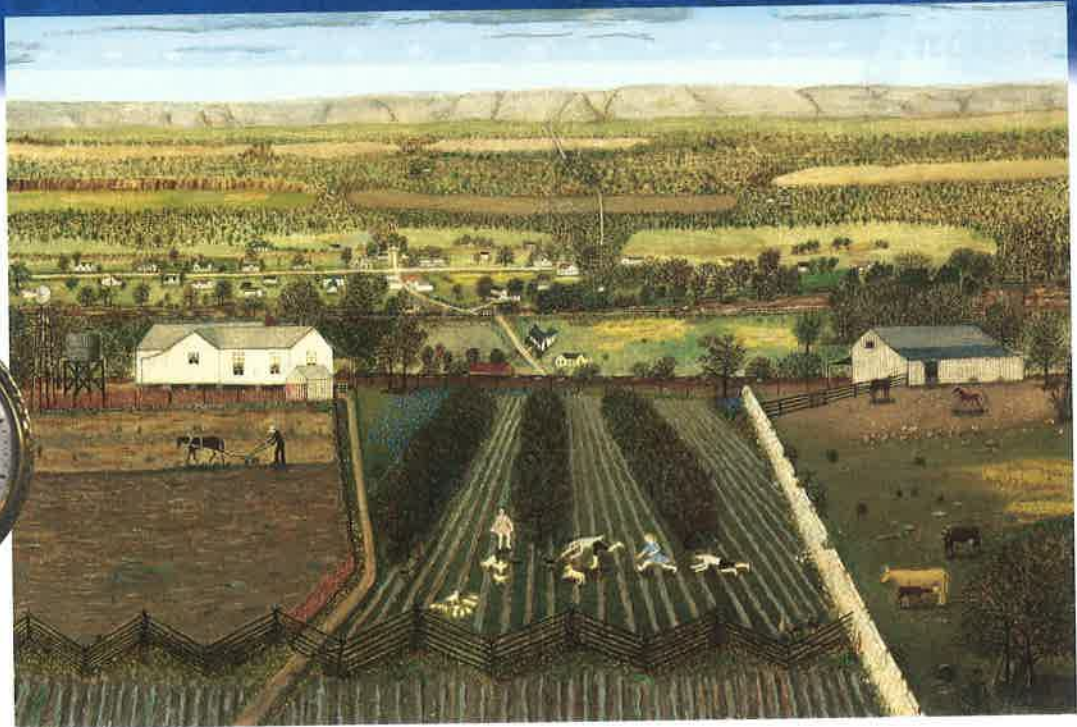
Early threshing machines were powered by horses or other livestock.

Build on What You Know

Soon after cattle ranchers settled on the Texas frontier, railroads and farmers began to press westward. The growth of farming and railroads helped spur economic progress in Texas. New businesses and technologies boomed in Texas and changed life in the state.



Railroad conductors relied on watches to keep trains on time.



With new technology such as the windmill, Texas farms became more productive.

1886 The Knights of Labor begin a major strike against Jay Gould's railroad company.
1889 There are more than 8,000 miles of railroad track in Texas.

1891 The Texas Railroad Commission is established to regulate railroads in Texas.

1900 Texas has more than 350,000 farms, and almost half of all farmers are tenant farmers.

1886

1886 A labor rally in Chicago's Haymarket Square erupts in violence.

1890

1892 The first gasoline-powered tractor is developed in Waterloo, Iowa.

1894

1898

1900 There are more than 5.7 million farms in the United States.

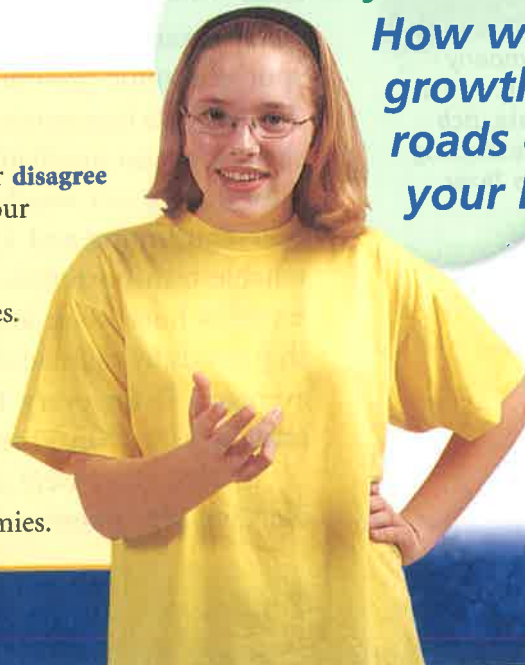
You Be The Historian



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

- **Geography** The settlement of frontier land is only possible with new technologies.
- **Science, Technology & Society** The growth of industries is dependent on new transportation technologies.
- **Economics** Only in recent times has national and international demand for agricultural goods driven local economies.

If you were there ...
How would the growth of railroads change your life?



The Growth of Railroads

Read to Discover

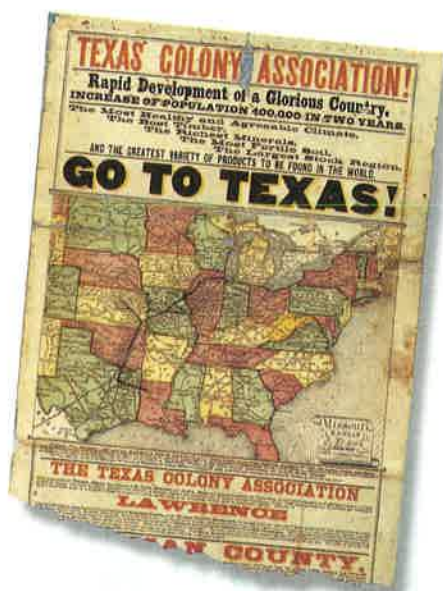
1. How did railroads compare to other means of transportation in Texas?
2. How did railroads affect life in rural and urban Texas?
3. How did railroads lead to the development of the Texas frontier?

Define

- transcontinental railroad
- junctions

Why It Matters Today

Railroads brought an economic boom to many towns. Use CNNfyi.com or other **current events** sources to learn about transportation today. Record your findings in your journal.



Railroad company advertisements promised a good climate, rich resources, and a thriving population in Texas.

The Story Continues

On Christmas morning in 1871, hundreds of people gathered outside of Austin. They hoped to get a glimpse of the first locomotive to enter the capital city. By mid-afternoon the crowd had moved to the downtown terminal. Officials hammered in the last spike of the railroad line as Austinites cheered. The crowd celebrated the completion of the rail line connecting Austin with Houston and Galveston.



New Railroad Lines

Many Texans eagerly awaited the arrival of rail lines, hoping they would spur economic growth. The state's economic development had been slowed by its transportation problems. Most Texas rivers were either too shallow or too unreliable for shipping goods, and dirt roads turned to mud during wet weather. As a result, moving people and goods was time-consuming and expensive. Railroads promised cheap, fast, and reliable transportation. A 35-mile trip that took a day and a half to travel by horse took less than two hours by rail. It was also cheaper to ship goods by railroad than by wagon. In the 1870s wagon freight rates averaged \$1 for every 100 pounds shipped 100 miles, while railroad rates were less than 50 cents for the same amount over the same distance.

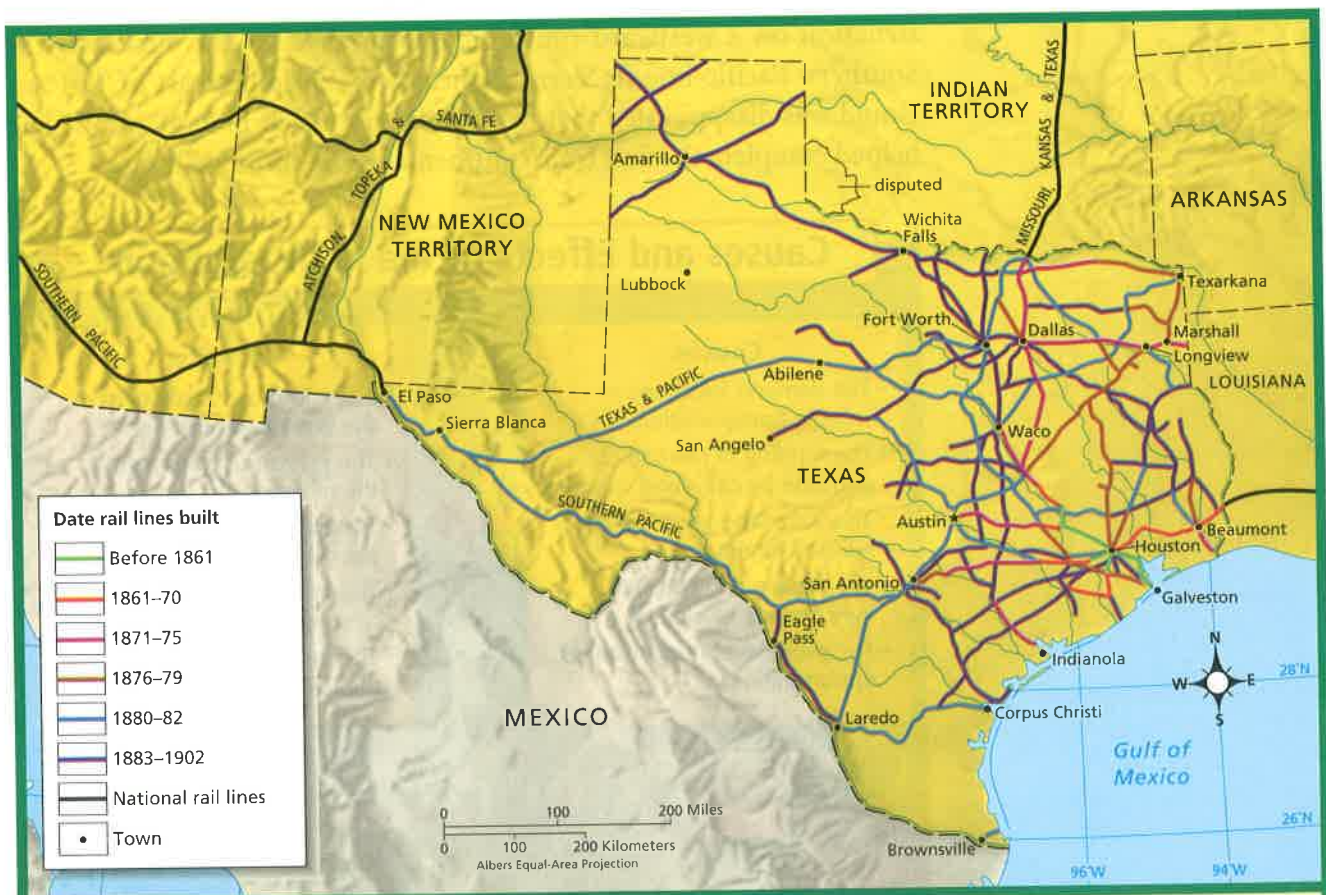
In 1861 there were about 470 miles of rail lines in Texas. However, the Civil War interrupted plans for new railroad construction. At the

end of the decade, Texas continued to lag behind the rest of the country, which had almost 53,000 miles of track in 1870. The United States even had a **transcontinental railroad**—one that runs across a continent.

Community leaders in Texas offered to fund, or help pay for, railroad construction. Many cities issued bonds to help pay for rail construction. A bond is a certificate that represents money owed by the government to private citizens. San Antonio had issued the first Texas railroad bonds in 1850. Between 1850 and 1876, Texas cities and counties issued about \$2.4 million in railroad bonds.

The Constitution of 1876 banned these local bonds but allowed the legislature to pass a general land grant law. For every continuous mile of track completed, a company could receive 16 square miles of land. The railroads were required to sell the land to finance surveying and construction of their lines. Texas eventually gave more than 32 million acres of land to more than 40 railroad companies.

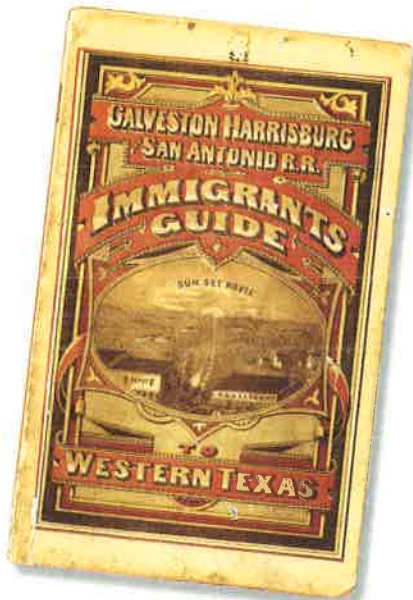
★ Reading Check Comparing and Contrasting List the advantages of railroads over other forms of transportation in Texas.



The Growth of Railroads, 1860–1902

Interpreting Maps The growth of railroads allowed farmers to ship goods to markets faster and with less cost.

TAKS Skills Environment and Society How do you think railroads affected the development of the Texas frontier? **★ TEKS**



The GH&SA Railway Company offered guidebooks to immigrants thinking about moving to West Texas.

★ The Railroad Boom

Land grants and other forms of government aid helped create a Texas railroad boom. In the early 1870s the Houston and Texas Central Railway (H&TC) built a line from Galveston to Dallas and Denison. At Denison, it met the Missouri, Kansas, and Texas line, which provided service north to St. Louis, Missouri. Between 1876 and 1879, railroad companies laid more than 750 miles of track in Texas.

During the boom, railroad companies began a race west. The Southern Pacific was building a rail line from California to Texas. Other railroad companies competed to meet the Southern Pacific first. The company with the most miles of track would profit by receiving the largest government land grants and the biggest share of business. The Galveston, Harrisburg, and San Antonio Railway Company (GH&SA) had already built a line from Galveston to San Antonio. The line eventually earned the nickname the Sunset Route. In 1881 GH&SA work crews started building a line west from San Antonio toward El Paso. However, the Texas and Pacific Railway (T&P) had a jump on the GH&SA. Jay Gould, a national-railroad owner, had bought the T&P and begun construction on a westward route. In December 1881 the T&P met the Southern Pacific line in Sierra Blanca, some 90 miles east of El Paso. Gould was disappointed that his line did not reach El Paso, but he had helped complete the first transcontinental route through Texas.

Causes and Effects of the Railroad Boom

Causes

- The demand for cheap reliable transportation
- The funding of railroad construction by cities and counties
- The state land-grant policy for railroad funding
- The expansion of Texas agriculture and industry
- The promise of new business opportunities

Effects

- The continued settlement of the West Texas frontier
- The growth of cities along the rail lines
- The expansion of commercial agriculture
- The growth of new jobs related to railroads
- The decline of cities not along the rail lines



TAKS Skills *Interpreting Charts* The railroad boom was spurred by public funding and demand. The boom affected the economic development of Texas. How did the railroad industry affect city growth? ★ **TEKS**

Texas railroad companies also encouraged trade between Texas and Mexico by running lines to the Mexican border. In the early 1880s the International and Great Northern Railway extended its line from San Antonio to Laredo. The Panhandle was one of the last regions to receive rail service. The Fort Worth and Denver City Railway (FW&DC) began construction north of Fort Worth in 1881. New towns such as Amarillo emerged along the railroad stops in the Panhandle. Many of these towns boomed with the business that the railroads brought. Between 1879 and 1889, railroad crews laid 6,000 miles of track in Texas.

TEXAS **Reading Check Drawing Inferences and Conclusions** Why did railroads compete to build lines in Texas, and how did they help expand settlement on the Texas frontier?

★ The Effects of the Rail Boom

The arrival of railroads greatly affected Texas. New cities were born, new areas were settled, and Texas became more connected to the rest of the country. Farm goods raised in Texas could be shipped out of state more easily, and goods produced elsewhere could be purchased in Texas. Towns such as Abilene, Big Spring, Eastland, and Sweetwater were established or grew with the arrival of the Texas and Pacific Railway (T&P). Cities grew rapidly at **junctions**, or the meeting places of two or more lines. These cities included Dallas, Houston, San Antonio, Galveston, Waco, El Paso, and Austin. Railroad-car repair shops and many other railway-related businesses appeared in these towns. Farmers and ranchers brought their crops and cattle to ship from cities along the railroad.

The economic boom in railroad towns attracted new residents. For example, Fort Worth grew up around a busy railroad junction. One local newspaper reported on the city's population boom.

Texas Voices

“Work on the T&P . . . has already produced a good effect on the businesses of our town. It has infused [brought in] a new life and vigor [energy] into our people which reacts on those coming here with good results. Vacant houses are filling up; hotels are crowded.”

—Fort Worth Democrat, quoted in *How Fort Worth Became the Texasmost City*, by Leonard Sanders

Towns that were bypassed by new rail lines often experienced drops in population and economic activity. For example, Jefferson was the sixth-largest Texas city in 1870. Tons of cotton and other farm products were shipped from Jefferson to New Orleans by water. But in 1873 the T&P built a rail line from Texarkana to Marshall, bypassing Jefferson. Jefferson declined in importance as goods were increasingly sent by rail.

★ **Reading Check Identifying Cause and Effect** How did railroads encourage business in some Texas cities, and what effects did this have on city populations?

GLOBAL CONNECTIONS

Famine in China

Many Chinese immigrated to the United States and found work building railroads. The first group of Chinese to arrive in Texas, some 250 people, came in 1870. More Chinese immigrated after a three-year drought struck China in 1876, destroying crops and causing a famine that killed nearly 10 million people. In 1881 approximately 2,600 Chinese workers arrived to build the Southern Pacific line east from El Paso. After the railroad was built, some of these workers stayed. **Why did Chinese immigrants come to Texas in the late 1800s?** **★** **TEKS**



Analyzing Primary Sources

Drawing Inferences and Conclusions According to this newspaper, what effects were railroads having on Fort Worth?

CONNECTING TO
ECONOMICS
AND MATH

The Railroad Boom

The growth of railroads allowed farmers to get goods to markets faster and at lower cost. The agricultural economy of Texas grew as more railroads were constructed.

YEAR	MILES	YEAR	MILES
1850	0	1930	17,569
1860	470	1940	17,057
1870	583	1950	16,296
1880	2,440	1960	15,445
1890	8,710	1970	14,683
1900	9,971	1980	13,075
1910	14,339	1990	11,541
1920	16,383	1998	11,383

Interpreting Data  **TEKS**


1. Use the information in the table to create a line graph of the miles of tracks in Texas from 1850 to 1998.
2. How many more miles of rail lines were operating in 1900 than in 1870?

 **Farmers Move West**

Railroads played a major role in opening up the Texas frontier to farming. As railroad companies built tracks through West Texas, settlers followed these lines and purchased land near railroad stops. Railroad companies encouraged this settlement, hoping to make money by selling parcels of land grants to farmers. These farmers would then raise crops or livestock and ship their goods over the companies' rail lines.

The railroad companies advertised the region's rich farmland, sending brochures out to all parts of the country. To ease farmers' concerns about the West Texas climate, some companies created demonstration farms with a wide variety of crops. The companies then brought potential land buyers to see what crops could be grown in the region. Partly as a result of such efforts, people began flocking to the frontier to find inexpensive land. The population of West Texas boomed. For example, the population of Jack County, which is northwest of Fort Worth, jumped from 694 in 1870 to more than 6,600 in 1880. Even a New Orleans newspaper commented on this trend. "Farmers are pouring into western Texas so fast that ranchmen have

just time enough to move their cattle out and prevent their tails being chopped off by the advancing hoe." The number of farms in Texas rose from some 61,000 in 1870 to 350,000 in 1900.

 **Reading Check Evaluating** How did railroad transportation contribute to the settlement and development of the West Texas frontier?

 **Section 1 Review**

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

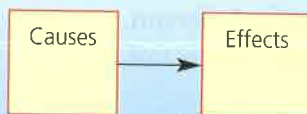
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.com **Homework Practice Online**
keyword: ST3 HP22

1 Define and explain:

- transcontinental railroad
- junctions

2 Identifying Cause and Effect

Copy the graphic organizer below. Use it to trace the development of the railroad boom and its effects on Texas.



3 Finding the Main Idea

- a. Compare the types and uses of new transportation technology in Texas in the late 1800s.
- b. How did the railroad have both positive and negative effects on urban growth in Texas?

4 Writing and Critical Thinking

Drawing Inferences and Conclusions Write a short memo describing how railroads affected the development of the Texas frontier.

Consider the following:

- the rail lines into the frontier
- the rail lines that connected Texas with U.S. and Mexican railroads

 **TAKS**

Changes in Farming

Read to Discover

1. How did new farming technology help Texans adapt to life on the frontier?
2. What were the effects of the commercial cotton-farming boom?

Why It Matters Today

In the late 1800s, Texans experienced a major farming boom that was followed by a bust in crop prices. Use CNNfyi.com or other **current events** sources to learn about boom-and-bust business cycles today. Record your findings in your journal.

Define

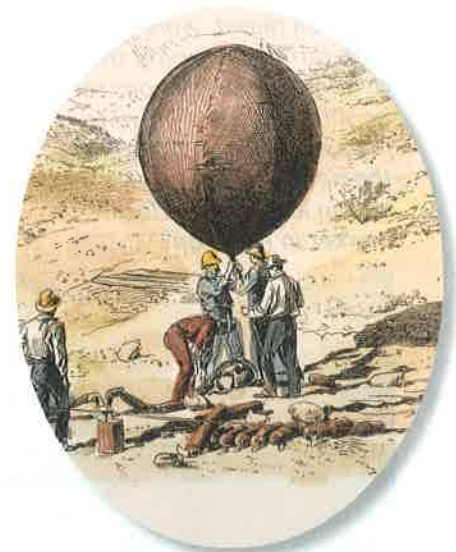
- dry farming
- threshers
- commercial farming
- supply and demand
- boll weevil

Identify

- Dora Nunn Roberts

The Story Continues

In 1891 General Robert St. George Dyrenforth began a series of government-sponsored experiments in West Texas. He believed that a big explosion in the sky might lead to rain in the dry region. Dyrenforth hauled more than 60 balloons, 100 kites, and thousands of pounds of explosives to a rural area outside of Midland. He then sent large balloons filled with hydrogen and loaded with dynamite into the air. The explosions produced gray clouds of smoke but little rain. After further experiments also failed, Dyrenforth returned \$5,000 to the U.S. government and earned the nickname Major Dry-henceforth.



General Dyrenforth used a balloon to conduct his rainfall experiments.

★ New Farming Technology


Although West Texas was dry, many farmers had moved into the region during the late 1800s because the land there was inexpensive. Farmers soon learned that certain crops grew well in West Texas. Instead of growing corn like some East Texas farmers, West Texas farmers turned to wheat and other grains such as sorghum.

Even so, farmers needed new techniques to help them grow crops in the dry climate. Many farmers practiced **dry farming** techniques such as terracing to keep moisture in the soil. Farmers built terraces, or small




Steam-powered tractors were rare in Texas during the early 1900s.

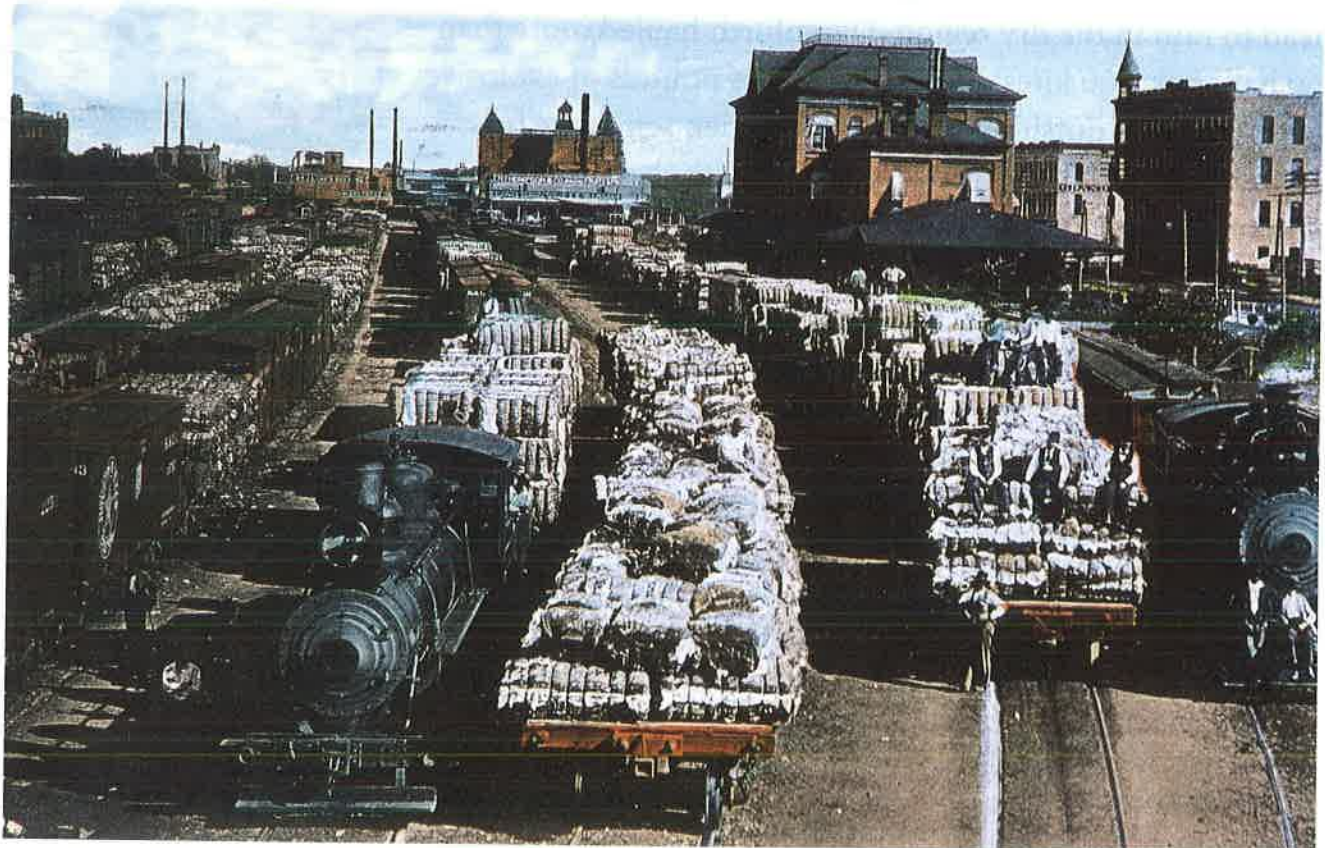
Interpreting the Visual Record

Railroads and farming. Railroad junctions, like this Houston depot, were busy with farmers bringing their cotton and other goods to be shipped to out-of-state markets. **How do you think the national demand for cotton affected the local market in Houston?** 

ridges, to catch runoff from rainfall and to help stop soil erosion. The soil in the Panhandle and some areas of West Texas was quite rich but was often very hard on the surface. John Deere's deep steel plow—widely used by 1845—helped West Texas farmers break through the hard soil. This type of plow left a layer of loose soil on top to allow crops to better absorb moisture from the air. During the 1880s a few farmers, following the lead of ranchers, began to use windmills to pump water from aquifers for crop irrigation.

Texans also began to use new mechanical farm tools. Farmers quickly gave up their old walking plows for horse-drawn ones that plowed several rows at once. Two-row planters also made planting faster and less difficult. **Threshers**—machines that separate grain or seeds from plants—made harvesting crops faster and easier. In the late 1800s a few Texas farmers even began to use steam-powered threshers and tractors. Steam-powered machines were rare and often attracted public interest. One Abilene newspaper reported the arrival of a steam-powered thresher. “The steam thresher received by T. & B. Gardner last week was a considerable source of amusement and curiosity while it remained in town.” Although often amazed by these new machines, farmers used them to increase production.

 **Reading Check Analyzing Information** How did new technology compare to past technologies and help farmers adapt to farming in West Texas?



★ Commercial Farming

New machinery, the increase in the number of farms, and the availability of railroads to ship products all encouraged agricultural growth in Texas. The increase in the state's agricultural production resulted in a boom in **commercial farming** during the late 1800s. Commercial farming is the large-scale growing of crops to sell for profit. Because cotton brought larger profits per acre than other crops, some Texas farmers began to grow only cotton. It grew well in the state's drier western regions as well as in East Texas. In 1880, Texas farmers produced about \$57 million worth of cotton. Texas had just a few textile mills in the late 1800s, so much of this cotton was shipped out of state. Railroads provided a cheap way to ship cotton to national markets. This contributed to the boom in commercial cotton farming. The development of cottonseed oil further spurred cotton production. Cottonseed oil was used in cooking products, cosmetics, and roofing material.

Railroads also opened up new areas to commercial farming. Spur lines were extended off main lines into regions where cotton could be grown. Railroad companies offered lower rates for shipping cotton and built large cotton loading platforms at each railroad stop. From 1874 to 1878, the number of cotton bales shipped on the Texas and Pacific Railway more than tripled. Railroad companies also transported other crops, including fruits, rice, and vegetables.

As commercial farming boomed, the value of Texas agricultural goods shot up. In East Texas their value rose from more than \$10 million to almost \$40 million during the late 1800s. West Texas experienced an even more dramatic shift, increasing from \$574,000 to more than \$8 million during that same period. This rise in value was the result of increased crop production rather than a rise in farm prices.

★ Reading Check Finding the Main Idea What geographic and other factors led to the boom in commercial farming of cotton in Texas?

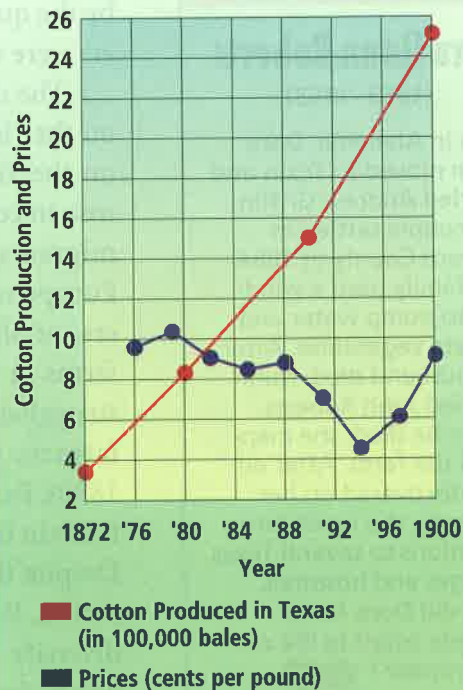
★ Farming Troubles

The boom in commercial farm production eventually led to a bust in prices. As farmers grew more crops, supply began to exceed demand, and thus prices fell. This is the economic law of **supply and demand**. If

CONNECTING TO ECONOMICS

King Cotton in Texas

Cotton production expanded rapidly during the late 1800s. Overproduction of cotton eventually led to a drop in prices.



Sources: *Historical Statistics of the United States*; *Historical Statistics of the South*

Interpreting Graphs ★ TEKS

1. How many more bales were produced in 1900 than in 1880?
2. In general, what happened to the price of cotton as production increased? Why did this happen?
3. Based on this chapter, what historical and geographic factors might have led to the rise in cotton production?

Biography




Dora Nunn Roberts (1863–1953)

Born in Alabama, Dora Nunn moved to Texas and married Andrew Griffin. The couple settled in Howard County in 1884. The family used a windmill to pump water and irrigate vegetables. After her husband died, Nunn married John Roberts. When he died, she managed the farm. After oil was discovered on her property, she made large donations to several Texas colleges and hospitals.

How did Dora Nunn Roberts adapt to life on the frontier? 

supply is more than demand, prices fall. But if demand is greater than supply, prices rise. For example, between 1874 and 1897 national production of wheat rose by 250 million bushels, and the price fell from 94 to 63 cents per bushel. Around this same period, national cotton production increased from more than 3.8 million to about 10.9 million bales. Cotton prices also fell from 11 to 6 cents per pound. Railroads had integrated Texas with the national and international markets for cotton. Therefore, the price of a bale of cotton in Texas was determined by the quantity of cotton produced in all parts of the world. Texas farmers were now vulnerable to supply and price changes in world markets.

The drop in prices hit farmers hard because the cost of farming was on the rise. Prices for farmland rose once most of the inexpensive land on the Texas frontier had been purchased. Some of the best farmland rose in cost from \$10 an acre in 1870 to more than \$500 in 1900. Many migrants from the United States and immigrants from Mexico and Europe who could not buy land worked as farm laborers, tenant farmers, or sharecroppers. Between 1880 and 1900 the number of tenant farms in Texas tripled. Texas farmers such as **Dora Nunn Roberts** also struggled to survive a lengthy drought in the 1880s. In addition, cotton farmers suffered from crop-destroying pests and weeds during the 1890s. For example, the **boll weevil**, a type of beetle, first infested cotton fields in the Rio Grande valley and then quickly spread throughout Texas. Despite the pest problems, many farmers refused to grow anything but cotton. Farm organizations and scientists tried to encourage farmers to diversify and grow a variety of crops. However, even with the falling prices, farmers still made more money on cotton than on other crops.

 **Reading Check Drawing Inferences and Conclusions** How do you think the interdependence of Texas and national and international markets and the economic law of supply and demand affected Texas farmers?



Section 2 Review

 Questions 1, 3, 4a, 4b, 5

 Homework Practice Online

keyword: ST3 HP22

1 Define and explain:

- dry farming
- threshers
- commercial farming
- supply and demand
- boll weevil

2 Identify and explain:

- Dora Nunn Roberts

3 Summarizing

Copy the graphic organizer below. Use it to explain how railroads and farming led to the integration of the Texas economy with national and international markets.

Farming and Railroads

International Markets

4 Finding the Main Idea

- Compare the new types of farming technology. How did they help Texans adapt to and modify their environment?
- Why did a boom in cotton farming occur, and what were its effects?

5 Writing and Critical Thinking

Categorizing Imagine that you had visited Texas twice, once in 1870 and again in 1900. Write a letter explaining how the commercial boom in cotton farming had both positive and negative effects on life in Texas.

Consider the following:

- the value of farm goods and changes in farming costs
- the effects of the law of supply and demand on farmers



Agricultural Industries and Workers

Read to Discover

1. What were the major Texas industries in the late 1800s?
2. What problems did labor unions face in Texas?

Why It Matters Today

New inventions helped Texas industries grow and become even more productive. Use cni.fyi.com or other **current events** sources to learn more about recent inventions. Record your findings in your journal.

Define

- labor unions
- strike

Identify

- Great Southwest Strike of 1886

The Story Continues

In 1876 a newspaper owner named Colonel A. H. Belo left his Galveston home for an exhibition in Philadelphia. He was eager to see all the new inventions that would be on display there. At the exhibition Belo and many others saw Alexander Graham Bell's new invention—the telephone. Thoroughly impressed, Belo decided that he had to have one. The telephones that he had installed at his home and at his office at the *Galveston News* were among the first in the United States.



Alexander Graham Bell exhibited this telephone in Philadelphia in 1876.

★ Leading Industries


New inventions like the telephone helped newspapers report on the state's expanding industries. The most important Texas industries continued to be ones that helped turn farm goods into products. Flour milling was the state's leading industry after agriculture. By 1870 there were more than 530 flour mills in Texas, and mills in Dallas County alone produced nearly \$3 million worth of flour.

By the 1890s lumber had overtaken flour milling in value. Between 1870 and 1900 the production of lumber in Texas increased more than eightfold to more than \$16 million. Much of the cutting and processing of timber in sawmills was done in the Piney Woods region. The growth of railroads created greater demand for lumber. Railroads used timber



Courtesy of the Witte Museum, San Antonio, Texas

Interpreting the Visual Record

Texas industries. Carl Hilmar Guenther built this mill in 1859 on the San Antonio River. **Why do you think Guenther located his mill near a river?** 

for rail ties and bridges and for fuel. Railroads also provided cheap transportation for timber products, which were used for building in the treeless frontier of western Texas and in other parts of the United States. Timber was also transported to port cities such as Galveston, where it could be shipped by boat to national and international markets. International demand for Texas lumber boosted the state's economy. One Texas businessman recognized this trend.

Analyzing Primary Sources

Identifying Points of View

How does Swinford think international trade will affect the lumber industry in Texas?


Texas Voices

“Three large [lumber] mills at Beaumont . . . [have] built up an enormous trade. . . . They will go after the foreign trade harder than ever, when they have a surplus of stock and they expect to bring to Texas for the enrichment [benefit] of this section [region] and especially of the toilers [laborers] who seek their fortunes in this business, the trade and the cash of other countries.”

—Jerome Swinford, quoted in *The Road to Spindletop*, by John Stricklin Spratt

Other industries also developed. By 1900 Texas was the number one producer of cottonseed oil for the U.S. market. Meatpacking was another leading Texas industry. Stockyards and meatpacking plants were built near railroad junctions to take advantage of refrigerated railroad cars that could transport beef across great distances.

The Texas mining industry did not develop until the 1880s, when railroad locomotives began to use coal instead of wood as fuel. Coal burned more efficiently, and trains could run faster with this fuel. Railroads in Texas continued to grow as the 1800s drew to a close.

 **Reading Check Analyzing Information** How did the growth of railroads affect Texas industries and the use of natural resources?

★ Industrial Workers

Although these growing industries created new job opportunities, most Texans still worked in agriculture. In 1900 less than 2 percent of the population worked in manufacturing. Wages and hours for industrial workers varied from job to job. Some workers joined **labor unions**—organizations that formed to support the interests of workers. Unions pushed for improvements in the hours, wages, and working conditions of laborers. However, most unions did not allow African Americans to become members. One of the first unions in Texas was the Screwmen's Benevolent Association of Galveston. The union formed in 1866 and organized workers on the shipping docks of Galveston who used screw jacks to load cotton onto ships.

In 1882 the first national labor union arrived in Texas. The Knights of Labor organized to support skilled and unskilled workers of almost every trade, including farmers. Unlike most national unions, membership in the Knights was open to women and African Americans. In Texas the Knights organized railroad workers. The union led a successful **strike** against Jay Gould's Wabash Railroad in 1885. A strike occurs when workers refuse to do their job until a company meets their demands. Another railroad strike, known as the **Great Southwest Strike of 1886**, led to violence in Fort Worth. Labor unrest continued until the state militia and Texas Rangers restored order. Many Texans were upset by the violence, while others believed that strikes and other labor actions threatened the production and transportation of goods. As a result, support for unions decreased in Texas.

★ **Reading Check Identifying Cause and Effect** Why did labor unions grow in Texas, and what led to their decline?

That's Interesting!

The Knights of Labor

When union members working for Gould's Wabash Railroad were fired in 1885, the rest of the union workers went on strike. The strike shut down the entire Wabash line in the Southwest and forced Gould to agree to the union's demands. The victory led to a dramatic rise in membership.



Section 3 Review



Questions 2, 3, 4a, 4b, 5

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keyword: ST3 HP22

1 Define and explain:

- labor unions
- strike

2 Identify and explain:

- Great Southwest Strike of 1886

3 Categorizing

Copy the graphic organizer below. Use it to describe how agricultural industries contributed to the growth of the Texas economy.

Industry	Effect on Agriculture	Effect on Texas Economy
Flour milling		
Lumber		
Cottonseed oil		

4 Finding the Main Idea

- What were the leading manufacturing industries in Texas for 1870 and 1890?
- List two reasons why labor unions did not succeed in Texas.


5 Writing and Critical Thinking

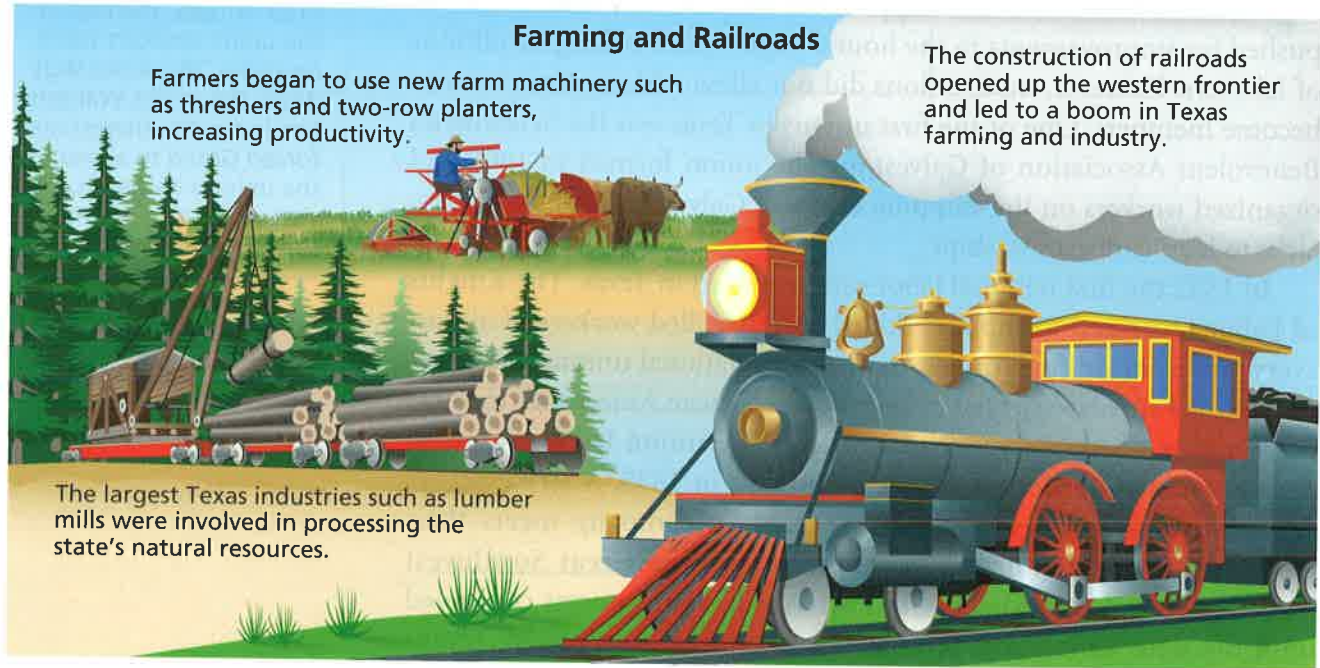
Analyzing Information Imagine that you are traveling through Texas in 1870 looking for industries in which to invest money. Write a memo to other investors on the effect of national and international markets on Texas. Consider the following:

- the growth of railroads
- the demand for natural resources



The Chapter at a Glance

Examine the following visual summary of the chapter. Then use the visual to pose and answer questions about how Texas industries were affected by geographic factors and natural resources. 



Farming and Railroads

Farmers began to use new farm machinery such as threshers and two-row planters, increasing productivity.

The construction of railroads opened up the western frontier and led to a boom in Texas farming and industry.

The largest Texas industries such as lumber mills were involved in processing the state's natural resources.

Identifying People and Ideas

Use the following terms or people in historically significant sentences.

- | | |
|------------------------------|------------------------------------|
| 1. transcontinental railroad | 6. supply and demand |
| 2. junctions | 7. Dora Nunn Roberts |
| 3. dry farming | 8. boll weevil |
| 4. thresher | 9. labor unions |
| 5. commercial farming | 10. Great Southwest Strike of 1886 |

Understanding Main Ideas

Section 1 (pp. 462–466)

- How did the railroad boom affect the growth of Texas towns and local economies?
- How did railroads become a factor in settling the West Texas frontier?

Section 2 (pp. 467–470)

- Identify ways that Texans used new farming technologies to adapt to and modify their environment.
- Analyze the impact of supply and demand and international markets on Texas farmers.

Section 3 (pp. 471–473)

- What goods did Texas industries supply for national and international markets?

You Be the Historian

Reviewing Themes

- Geography** How did technology help Texans adapt to and settle the Texas frontier?
- Science, Technology & Society** How did the development of the railroad help the growth of Texas industries and cities?
- Economics** How was the Texas economy affected by the national and international demand for farm and industrial goods?



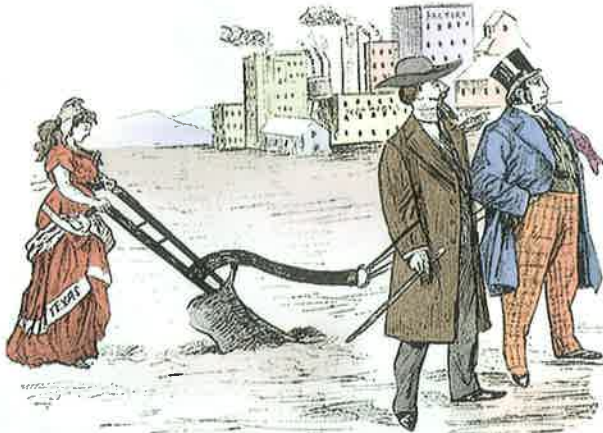
TAKS

Practice: Thinking Critically

- Drawing Inferences and Conclusions** How do you think new technology in Texas made the state more connected with the United States and the rest of the world? What were the effects?
- Identifying Cause and Effect** What factors led to the development of the West Texas frontier, and how did this affect the social, political, and economic life of the area?
- Evaluating** How did physical factors of Texas geography and human factors lead to the growth of agriculture and industry in Texas?

Interpreting Political Cartoons ★TEKS

Study the political cartoon below. Then use the information in the cartoon to answer the following questions.



Let Texas be Developed.

1. Which sentence best explains why Texas has both southern resources and northern capital yoked to her plow?
 - a. Texas is producing goods with the aid of these two forces.
 - b. These two forces are getting in the way of Texas industry.
 - c. These two forces limit Texas agriculture.
 - d. Texans dislike these two forces.
2. Based on this cartoon, how do geographic and human factors affect farming?

Analyzing Primary Sources ★TEKS

Read the following quote by a Texas newspaper editor who urged farmers to diversify their crops and thus avoid relying too heavily on cotton. Then answer the questions.

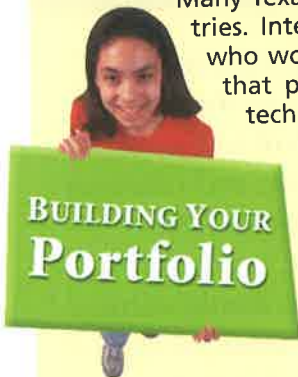
“Diversity in farming has so many advantages that it should find favor in the practice of every sensible agriculturalist [farmer]. It puts on the home table a great variety and prevents the necessity of many purchases; distributes both the labor and cash receipts pretty evenly throughout the year; prevents the overstocking in any single department, and so tends to keep up prices; is favorable to the rotation of crops, the advantage of which all appreciate; and finally is an insurance against heavy loss by distributing among many products the risks of failure of one.”

3. Which of the following is not a reason the editor gives in support of crop diversification?
 - a. Crop rotation provides a number of advantages.
 - b. It helps protect the farmer against losses from droughts.
 - c. Diversification provides the farmer with a variety of foods.
 - d. It helps protect farmers by distributing the risk of failure among many crops.
4. Why do you think some Texas farmers would not want to diversify their crops?

Alternative Assessment

Linking to Community ★TEKS

Many Texans today work on farms or in industries. Interview someone in your community who works on a farm or in an industry. Ask that person what role new machinery or technology plays in his or her work. How has that person adapted to the region’s environment? How have geographic and human factors influenced his or her work? Create a model or collage of a machine the person uses in his or her work.



internet connect

Internet Activity: go.hrw.com
KEYWORD: ST3 TX22 ★TEKS

Access the Internet through the HRW Go site to research the coming of the railroads to Texas. Then create an advertisement promoting a new railroad line. Be sure your advertisement points out the social impact and economic benefits that the new line will bring to the area’s residents. You may want to include a poster with maps and colorful illustrations with your presentation.

