How do people adapt to their environments?

Cause and Effect
Use a layered book foldable to take notes as you read Unit 6. Write The Southwest across the bottom of the foldable. Label the layers Geography, Economy, and People. Use the foldable to organize information as you read.

For more about Unit 6 go to www.macmillanmh.com

The Southwest
Between 1540 and 1542, a Spanish explorer named Francisco Vasquez de Coronado led a group of people in a search for cities of gold. Although he did not find any gold, Coronado explored the Southwest United States and Mexico.

Today you can visit the Coronado National Memorial in Arizona.

Before the Southwest became part of the United States, most of it belonged to Mexico. Mexican culture can be seen in buildings such as the St. Francis of Assisi church.

Today you can watch traditional Mexican dancers at festivals throughout the region.
By the mid-1800s, ranching and cattle herding were important to the economy of the Southwest. **Nat Love**, Addison Jones, and Bill Pickett were famous African American cowboys.

**Today** you can visit the **National Cowboys of Color Museum and Hall of Fame** in Fort Worth, Texas.

---

**The Grand Canyon** is a beautiful natural landform in our country. **John Wesley Powell** was one of the first explorers to see its deep ravines and the rushing Colorado River.

**Today** you can visit Grand Canyon National Park in Arizona and explore its many trails.
The hot, dry climate of the Southwest hosts plants, animals, and landforms.

1. Chili peppers are often used in southwestern cooking.

5. The Alamo, a Spanish mission, was the site of an 1836 battle between Texas and Mexico. Today it is a museum devoted to Texas history.
1 The Grand Canyon is one mile deep and 277 miles long.

2 The armadillo is found throughout the Southwest. Armadillo means “little armored one” in Spanish.

3 Oil is an important natural resource. Machines called oil derricks help pump oil from underground.

4 The armadillo is found throughout the Southwest. Armadillo means “little armored one” in Spanish.
The Geography of the Southwest

What is the geography of the Southwest?

A. The Southwest has coastline, plains, prairies, deserts, and mountains.
B. Erosion has caused some strange landforms in the Southwest.
C. The Southwest has long rivers.
D. The Southwest has a dry climate with little rainfall.

Essential Question

The Southwest has coastline, plains, prairies, deserts, and mountains.

VOCABULARY
- mesa p. 233
- butte p. 233
- canyon p. 234
- drought p. 236
- aquifer p. 237

READING SKILL
- Cause and Effect

Copy the chart. As you read, fill it in with information about how the geography of the Southwest formed.

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STANDARDS FOCUS

SOCIAL STUDIES
- People, Places, and Environments
- Geography

PHYSICAL SYSTEMS
There are only four states in the Southwest region, but the area it covers is huge. It’s no surprise that this region has many different landforms and environments.

There’s only one state in the Southwest that has a coastline—Texas. This coastline runs along the Gulf of Mexico. A gulf is a body of water that is partly surrounded by land. The flat lowland next to the coast is called the Gulf Coastal Plain.

As you move inland from the Texas coastline, the land rises. You soon come to broad, rolling plains which continue into Oklahoma. The plains are dry, but grass grows well there. This area is a vast prairie, or grassland. Once, Native American groups and European settlers hunted buffalo on these plains. Today cattle graze here instead.

Other Landforms
The Southwest isn’t just coast and plains. In parts of Texas, there are swamps. There are also many deserts in the Southwest. All the Southwestern states have mountains. The plants and animals in each of these environments have adapted to their surroundings.

Quick Check
Cause and Effect How has the use of the prairie in the Southwest changed?
Picture a tower of rock 1,000 feet tall that looks like a ship. Another rock has a hole through it. Still others look like mittens sticking out of the ground. Why are the rocks such unusual shapes?

**Eroded Rock**

The strange forms were made by erosion. Over millions of years, wind wore away the softer rock, leaving the remaining harder rock in unusual shapes. Some of the strangest formations are in an area of Arizona and Utah called Monument Valley.

**Plateaus, Mesas, and Buttes**

Look at the map on pages 228 and 229. Find the place where Utah, Colorado, Arizona, and New Mexico meet. Do you see why this spot is known as the Four Corners? This is where you find a huge area called the Colorado Plateau that extends into four states. A plateau is an area that rises steeply from the land.

In Monument Valley, Arizona, the softer rocks have worn away. The harder rocks that remain look like giant mittens.
around it. At 130,000 square miles, the Colorado Plateau is larger than the entire state of New Mexico!

Erosion has created other unusual landforms, too. Land that looks like high hills with flat tops are called **mesas** from the Spanish word for table. The region also has **buttes**. A butte is a hill with a flat top that is smaller than a mesa.

**Quick Check**

**Summarize** What caused the strange rock formations seen in the Southwest?

One special place on the Colorado Plateau is the **Painted Desert** in Arizona. Here the sides of the mesas and buttes look like an artist has used a giant brush to paint stripes of blue, purple, orange, red, pink, and gold.
According to a famous legend, a giant named Paul Bunyan dragged his pick behind him as he walked across Arizona. The pick left a gash in the ground a mile deep and almost 300 miles long!

Today we call this area the Grand Canyon. A **canyon** is a deep valley with steep rocky walls. Of course, we know the Grand Canyon was really formed by the Colorado River.

The Colorado River starts in the Rocky Mountains. From there, it flows through five states and empties into the Gulf of Mexico. On its way, the river carries along dirt and pebbles. As the dirt and pebbles flow downriver, they rub against the river banks. Over millions of years, the dirt and pebbles carried in the running water wore away softer rocks and carved out the Grand Canyon.

The Grand Canyon is deeper than 22 football fields are long.
How grand is the Grand Canyon? At places it is a mile deep. If there was a bridge across the Grand Canyon at its widest point (18 miles), it would take you about six hours to walk across it. Read what President Roosevelt said about the Grand Canyon.

The Rio Grande

The Rio Grande is another important river in the Southwest. Rio Grande means “big river” in Spanish. The Rio Grande flows almost 1,900 miles from the Rocky Mountains, across New Mexico, and forms the border between Texas and Mexico. Much of its water is used by farms along the way.

Quick Check

Cause and Effect  How did the Grand Canyon form?
The Southwest is the driest region of the United States. In some places, such as in the Sonoran Desert in Arizona, it rains as little as three inches a year. Because there is so little rain, having enough water is always a big concern.

The grasslands of Oklahoma and Texas normally get enough rain for prairie grasses to grow, but in some years there can be a drought. A drought is a long period of time with little or no rain. There was a drought during the 1930s. The crops died and the soil was so dry it turned to dust. The winds whipped up the dust and blew it in great drifts. The area became known as the Dust Bowl. Thousands of farmers had to sell their farms and leave the area.

**Underground Water**

Much of the water used for drinking and for watering crops in
the Midwest and Southwest now comes from the Ogallala Aquifer. An aquifer is an underground area of rock, sand, or gravel that contains water. Aquifers formed thousands of years ago from streams, rivers, and melting glaciers. They are a renewable resource. Although sometimes people take out more water in a year than the aquifer will refill from rainfall. This causes a shortage of water.

**Quick Check**

**Summarize** What are the problems with water in the Southwest?

1. **VOCABULARY** Draw a picture of each vocabulary word.
   
   mesa         butte         canyon

2. **READING SKILL** Cause and Effect  Use your chart from page 230 to write about what would happen to the water supply if the aquifers in the Southwest were emptied.

3. **Write About It**  Write a paragraph about challenges that the geography and climate of the Southwest cause for people living there.

Rain in the Southwest usually comes in the form of afternoon thunderstorms.
When you need to know the number of people who live in a place, you can look at a population map. Most population maps show population density. **Population density** measures how many people live in a certain area. The populations might be shown by state, county, or smaller areas.

Another kind of population map shows **population distribution**. This kind of map shows you where in an area people live. Look at the maps on the next page.

**Learn It**

- Map A is a population density map. On this map, the different colors stand for different population densities per square mile or square kilometer.

- The map key in Map A shows the number of people per square mile that each color represents. The color orange shows that between 15 and 99 people per square mile live in the areas that are shaded orange. Which color stands for the most people per square mile?

- Map B is a population distribution map.

- The map key in Map B shows that each dot stands for 50,000 people. By looking at where the dots are closest together, you can see where the most people live. In some places there are so many people that the dots run together.
Try It

Look at the maps. Then answer the questions.

- What does the color yellow mean in the key for Map A?
- Find New Mexico on Map B. Which city in New Mexico has the largest population?

Apply It

Look at the maps. Then answer the questions.

- What does Map B tell you that Map A does not?
- Which state has more people, Arizona or New Mexico?
Growing crops and grazing animals are important in the Southwest.

Many people in the Southwest work in technology.

Oil, minerals and cattle are natural resources of the Southwest.

What are the resources and jobs in the Southwest?

Essential Question

The Economy of the Southwest

VOCABULARY
- kerosene p. 241
- irrigation p. 242
- silicon p. 244
- solar energy p. 244

READING SKILL
Cause and Effect
Copy the chart. As you read, fill it in with information about the economy of the Southwest.

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STANDARDS FOCUS

SOCIAL STUDIES
- Science, Technology, and Society

GEOGRAPHY
- Environment and Society
If you flew over Oklahoma and Texas, you would see hundreds of oil wells. Every day, these wells pump up the Southwest’s most valuable resource—petroleum.

Most petroleum is found deep underground. In the 1850s, petroleum was hard to get. People used it to make kerosene, a fuel oil burned in lamps and heaters. Then someone discovered that oil could be pumped to the surface through wells drilled in the ground.

Almost overnight, land that contained petroleum became extremely valuable. People throughout the region began to drill oil wells. Today the oil industry provides many jobs in the Southwest. Petroleum is used to make heating oil, gasoline, paints, and plastics.

**Event**

In 1901, oil was found in Spindletop, Texas. The new oil well produced over 75,000 barrels a day.

**Mines and Metals**

Gold, silver, and copper are all metals found in the Southwest. Use the map below to learn where to find other resources of the Southwest.

**Quick Check**

**Cause and Effect** What happened after underground petroleum was discovered?

**Map Skill**

LOCATION In which states is oil a resource?
Not every resource in the Southwest is underground. If you drove through the Southwest, you would see mile after mile of farmland. The crops you see growing will vary depending on where you are.

Sugar cane and rice grow along the Gulf Coast in Texas where there is plenty of rain. In Oklahoma and Texas, farmers grow wheat and barley. Vegetables such as potatoes, cauliflower, broccoli, and lettuce are also grown in the Southwest.

In the 1830s and 1840s, many farmers moved from the Southeast to the Southwest to grow cotton. Today cotton is grown in all four southwestern states.

Because the Southwest is a dry region, farmers sometimes have a problem getting enough water. Some farmers use **irrigation** to grow crops. Irrigation is using pipes or ditches to bring water to fields. Many residents worry that the region’s limited resources cannot provide enough water for everyone to use. Using water for irrigation has caused conflicts between farmers, Native Americans, and city residents.
Grazing Fields

The plains of Oklahoma and Texas are dry. They do not have enough water for trees, but grass grows well there. Buffalo once roamed over this land and ate the grass. Today the grassy plains feed sheep and cattle.

Cattle came to the Southwest with Spanish settlers who started the region’s first ranches. Later many African Americans, Native Americans, and whites worked together as cowboys in the Southwest.

You can still find cattle and sheep ranches across the Southwest. Texas leads the nation in producing beef cattle. Think of Southwest cattle next time you eat a hamburger!

Quick Check

Make Generalizations Why is the Southwest a good place for cattle ranches?
Have you used a computer or cell phone lately? The chip in your computer or cell phone may have come from the Southwest. Texas, Arizona, and Oklahoma are all known for their computer technology industries.

New Mexico has worked hard to get technology companies to move there. New Mexico governor Bill Richardson said:

“Technology-based economic development builds on some of New Mexico’s greatest strengths in science, research and technology. . . .”

Today, central New Mexico is home to a large computer industry. The nickname for this area is “silicon mesa.” Silicon is a natural material that is found in rocks and sand. It is used to make computer chips. Did you notice a landform of the Southwest in the nickname?

Another important technology is the development of new sources of energy. One of these is solar energy, or energy that comes from the Sun. Solar energy is collected when sunlight hits solar panels. The Sun shines a lot in New Mexico, which makes it the perfect place for research into solar energy.
Ships and Spaceships

Texas has a long coast on the Gulf of Mexico. The Gulf ports of Houston, Texas, and Galveston, Texas, are major centers for shipping oil and other goods.

Another kind of ship is important in Houston, too—the space ship! Houston is the location of the Johnson Space Center, where part of our country’s space program is located.

Because of its clear skies and dry climate, the Southwest is a good place for telescopes. Scientists use these telescopes to gather data about the stars and learn more about outer space.

Quick Check

Summarize What different technology industries exist in the Southwest?

Astronaut Leroy Chiao trains in a pool at NASA’s Johnson Space Center in Houston, Texas.
Who are the people of the Southwest?

A Native American groups include the Navajo, Hopi, and Pueblo people.

B Many people in the Southwest have Spanish or Mexican heritage.

C Immigrants and older Americans are moving to the Southwest today.

D People in the Southwest celebrate their culture in festivals.
Although Chaco Canyon is quiet now, many people lived there over 1,000 years ago. Who were these people? Where did they go?

Long ago, the people called the Ancestral Pueblo lived in Chaco Canyon. **Pueblo** is the Spanish word for village, and the Spanish use it to describe both the people and their homes. The Ancestral Pueblo built their homes along the steep sides of cliffs. They were built of **adobe**, a sun-baked clay brick. The pueblo in Chaco Canyon was once the center of trade and culture for the Ancestral Pueblo. It was home to about 1,000 people.

About 700 years ago, the Ancestral Pueblo left behind their cliff buildings, pueblos, and the beautiful pottery that they made. They settled in other parts of the Southwest. Today’s Zuni, Hopi, and other Pueblo people are the descendents of the Ancestral Pueblo.

Some Pueblo people still live in pueblos today. The people of Acoma Pueblo in northwest New Mexico say that people have lived there for more than 700 years. That makes it the oldest continuously lived-in community in North America.

The **Navajo**

Between 500 and 1,000 years ago, the Navajo (or Diné) came to the Southwest from farther north. At first the Navajo lived by hunting and growing corn.

The Spanish arrived in the 1500s and brought sheep to the region. The Navajo soon learned how to raise large herds of sheep.

Today many Native Americans of the Southwest live on reservations. In fact the Navajo reservation is the largest reservation in the United States. It covers parts of three states.

**Quick Check**

**Cause and Effect** How did Navajo life change after the Spanish brought sheep?
The first Europeans to explore the Southwest were the Spanish. Some, like Francisco de Coronado, came looking for gold. He came in 1540 with nearly 300 soldiers. The Spanish had heard stories of seven cities of gold and were eager to claim such a prize. Not surprisingly, wherever they went, the Native Americans said that gold could be found far away to the north or east. The gold was never nearby.

Coronado trekked as far as Kansas before he gave up. He found no gold, but he claimed many lands for Spain.

**Spanish Settlements**

Before the Pilgrims landed on Plymouth Rock, the Spanish had already built several settlements in the Southwest. One of their earliest settlements, Santa Fe, was founded in 1607 in the area that would become New Mexico. It was one of the first European settlements in the United States. The Spanish would build many more settlements in the Southwest.

Signs of Spanish and Mexican heritage can still be seen in the Southwest. In some locations, such as San Antonio, Texas, and Santa Fe, New Mexico, the city names are Spanish. Many buildings in the Southwest
Francisco de Coronado and his soldiers explored the Southwest.

This church in Sorroco, New Mexico, was built between 1615 and 1626 in a Spanish style.

were built using Spanish styles. Today more than one out of every four people in the Southwest has either Spanish or Mexican heritage.

**Other Settlers**

Once the area became part of the United States, other settlers hurried to get there. Some came looking for silver, copper, and gold. Others came to farm or to raise cattle and sheep.

**Quick Check**

Sequence What happened to the lands that Coronado began to explore in 1540?

**Primary Sources**

The first Spanish explorer of the Southwest was Cabeza de Vaca. In 1537, he wrote in his journal about a statement made by local Native American people:

“[T]hey gave us to understand that, very far from there, was a province called Apalachen in which there was much gold.”

**Write About It** Write a journal entry describing what Cabeza de Vaca saw as he explored the Southwest.
PEOPLE OF THE SOUTHWEST TODAY

For many years, the Southwest had the fewest people of any region. In the early 1900s, artists began coming to Arizona and New Mexico. They came because of the region’s natural beauty. Today the cities of Santa Fe and Taos in New Mexico are famous as centers for art. Artists there are often inspired by the art of the region’s Native Americans.

The development of the automobile and the highways and roads that followed made it easier for people to travel across the Southwest. Roads also made it easier to ship goods. By 1911 Phoenix, Arizona, had its first paved street.

Another reason people moved to the Southwest was air conditioning. In 1911 Willis Carrier built the first air conditioner. Within 20 years, many buildings in the Southwest were cooled by air conditioning. This invention made it possible for more people to live year-round in the warm Southwestern climate.

**Population Increases**

People are still moving to the Southwest. Phoenix, Arizona, is the fastest growing city in the nation. Many newcomers to the region are immigrants from other countries, such as Mexico and Honduras.
Other newcomers come from different regions of the United States. Many older Americans retire to the Southwest. Tourists visit the Southwest, too. They are attracted by the natural beauty, the area’s history and culture, and the mild winter climate.

**Quick Check**

**Summarize** What things attract people to the Southwest today?

---

**DataGraphic**

**Population Growth**

Study the graph and map. Then answer the questions that follow.

**Population Growth in the Southwest**

![Graph showing population growth in the Southwest from 1900 to 2000.](image)

**Phoenix, Arizona**

![Map of Phoenix, Arizona with urban areas from 1955, 1975, and 2000.](image)

**Think About Changes in Population**

1. How has the size of the urban area of Phoenix, Arizona, changed since 1955?
2. What is the difference in the population between 1900 and 2000?
3. How are the data shown in the chart and in the map similar?
Like the people of other regions, Southwesterners like to celebrate their heritage. Some attend **powwows**. A powwow is a Native American festival. What can you do at a powwow? You can see Native American dancing, listen to drummers, and taste fry bread, a delicious treat. One of the largest powwows in North America is held in Albuquerque, New Mexico, every spring.

Rain is important to Native Americans. Without enough rain, it is difficult to raise crops. The Hopi people pray to kachinas, or spirits, for rain. Every two years in August, dancers perform the Snake Dance to ask these spirits for rain.

**EVENT**

Every October, hot air balloons fill the skies at the **Albuquerque Balloon Fiesta** in Albuquerque, New Mexico.

This ceremony attracts thousands of visitors to Arizona.

Some festivals are held to celebrate local foods. In Crystal Beach, Texas, a Crab Festival is held every year. At the Hatch Chile Festival in Hatch, New Mexico, people can taste the chili peppers in many different recipes.
Still other festivals are just for fun. Albuquerque, New Mexico, has a hot-air balloon fiesta every October.

**Historical Celebrations**

Many people in the Southwest celebrate Cinco de Mayo, which means the “fifth of May” in Spanish. This Mexican holiday honors the Mexican army’s victory over French soldiers at the Battle of Puebla in 1862.

March 2 is a state holiday in Texas. This holiday is called Texas Independence Day. On this day, people in Texas remember March 2, 1836. This was the day the settlers in Texas declared their independence from Mexico.

**Quick Check**

**Compare and Contrast** Describe the different celebrations in the Southwest.
Vocabulary

Copy the sentences below. Use the vocabulary words to fill in the blanks.

adobe irrigation solar energy drought

1. A farmer’s entire crop could die if there is a ______.
2. Many farmers in the Southwest depend on ______ for water.
3. Since New Mexico is sunny, it is a good place to study ______.
4. People in the Southwest use ______ bricks for building.

Comprehension and Critical Thinking

5. What natural resources are found in the Southwest?
6. To which countries did the states of the Southwest once belong?
7. Critical Thinking What makes grass important to the economy of the Southwest?
8. Reading Skill Why might it be an effect, or problem, if the population of the Southwest keeps growing?

Skill

Use Special Purpose Maps

Use the map to answer the questions.

9. Which county on the map has a population density of more than 1,000,000 people?
10. Which counties on the map have the second greatest population density?
Read the paragraph. Then answer the questions.

The artist Georgia O’Keeffe especially loved the Southwest. Although she was not born there, she loved the landscape and the light in the region. She said it inspired her to do some of her best work. When asked why she liked Texas, for instance, she replied: “The openness. The dry landscape. The beauty of that wild world.”

1. What is the main idea of this passage?
   A. Georgia O’Keeffe was a great artist.
   B. Texas has a very dry landscape.
   C. Georgia O’Keeffe loved the Southwest and thought it inspired some of her best work.
   D. Georgia O’Keeffe was not born in the Southwest.

2. Which statement best explains why the writer of the passage included a quote from Georgia O’Keeffe?
   A. The writer liked the sound of the quote.
   B. The writer liked New Mexico.
   C. The quote explains how O’Keeffe painted her pictures.
   D. The quote explains what O’Keeffe loved about the Southwest.

3. What inspired O’Keeffe to do her best work?
   A. the landscape
   B. the landscape and the light
   C. the fact that she was born there
   D. the openness

4. Why might open, beautiful landscapes inspire an artist?

5. What else do you think might inspire an artist?
Write About the Big Idea

Expository Essay
In Unit 6, you read about the geography, economy, and people of the Southwest. Review the notes in the completed foldable. Begin with an introductory paragraph describing the environment in the Southwest. Then write a paragraph describing how the geography, economy, and people of the Southwest adapt to the environment. The final paragraph should summarize the main ideas of the essay.

Planning a Garden

Work independently to plan a xeriscape garden. A xeriscape garden contains plants that need very little water. Here’s how to design your garden:

1. Do research to learn what xeriscape plants look like. Consider the height and color of the plants. Think about how much sunlight and water the plants need.

2. Choose several plants to use in your garden.

3. Draw a garden design that uses these plants.

4. Write an explanation of your plant selection and garden design.

5. Present your garden design to the class.