The Need for Irrigation

The annual flooding of the Tigris and Euphrates Rivers enriched the soil, but it could not be counted on to water the farmers' crops. When the unpredictable floods came, floodwaters often rushed over the land, destroying crops and livestock as well as sweeping away villages.

While northern Mesopotamia received enough rainfall for farmers to grow crops, southern Mesopotamia did not. People in this hot, dry climate had to deal with frequent droughts. During these times, the heat of the sun baked the clay soil.

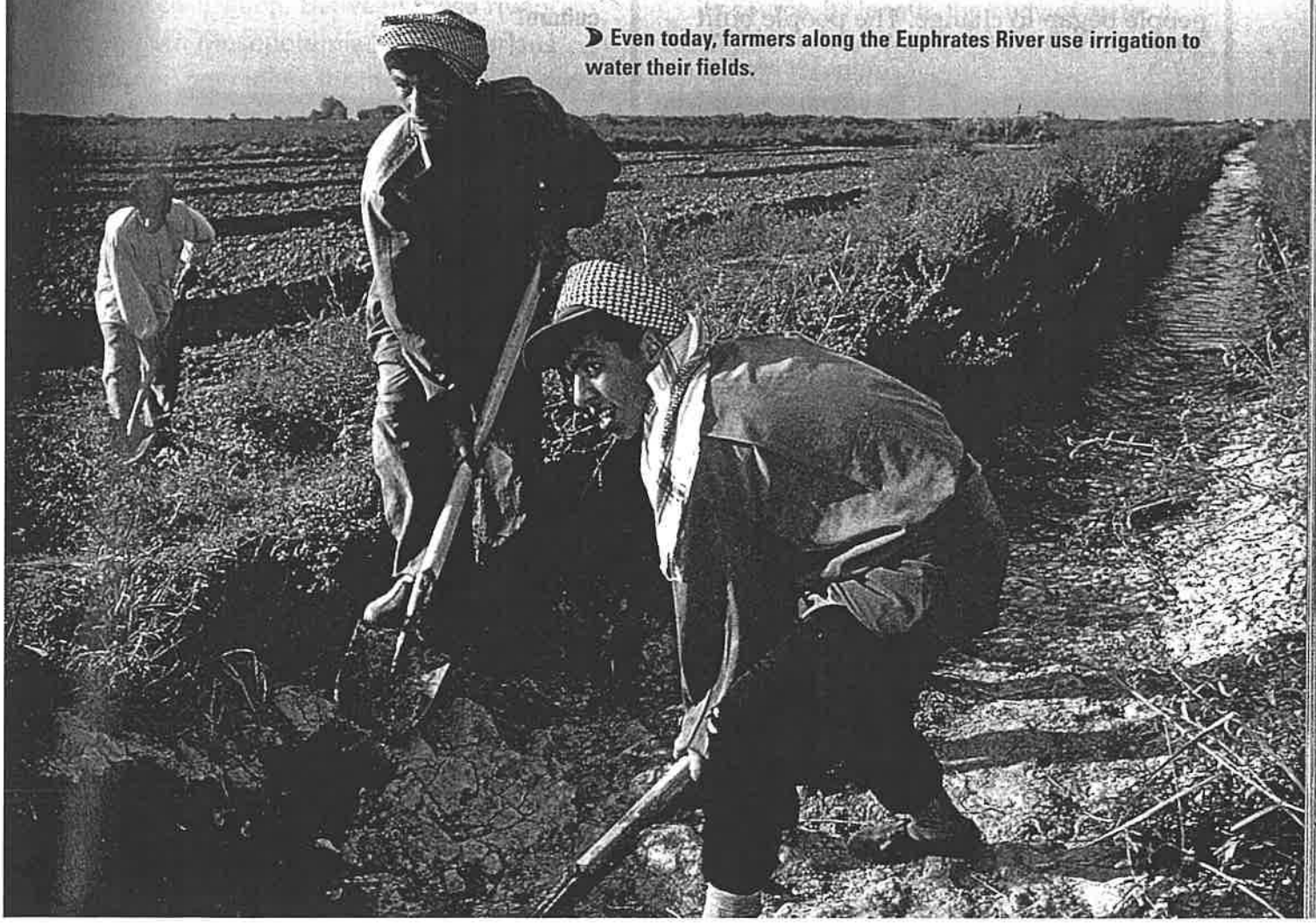
Imagine how frustrated the people of southern Mesopotamia must have been. They had plenty of river water near them but no way to use it to farm the dried-out land. They were at the mercy of the hot sun and unpredictable floods and rainfall.

In time, someone realized that irrigation would help solve this problem. So, people in southern Mesopotamia dug canals to carry water from the rivers to the land. They also stored water in areas of low land called basins to supply them with water in times of drought. To protect their lands from floods, they put up dikes, or walls of dirt, along riverbanks. They also built dams to help control the flow of water.

The development of these agricultural techniques changed the lives of the people in southern Mesopotamia. It allowed them to take up farming as a way of life and provided them with ways to produce surpluses of crops. With more than enough food, these early people developed new, more complex cultures.

READING CHECK **SUMMARIZE**

How did the people learn to deal with droughts and floods?



Even today, farmers along the Euphrates River use irrigation to water their fields.

Ubaid Culture

TIME 5000 B.C.–4000 B.C.
PLACE Southern Mesopotamia

The first known settlements in southern Mesopotamia formed in about 5000 B.C. This culture is known today as the Ubaid (oo•BY•ud) culture.

Ubaid pottery

For the most part, the people of the Ubaid culture lived simply, raising just enough crops to survive. They used stone hoes to work their fields and clay sickles to harvest their wheat and barley crops. The Ubaid people lived close to their fields in huts made of reeds and mud. They worshipped their gods in small, one-room temples. By about 4500 B.C., this ancient culture had spread across much of the Fertile Crescent.

Over time, the way of life of the Ubaid people began to change. The people built more-advanced irrigation systems and produced surpluses of crops.

The simple life gave way to one that required rules and organization. Leaders were needed, and one person in each community served as village chief. The Ubaid people began living in larger homes and building larger temples to honor their many gods.

At about this time, the Ubaid people began creating painted pottery. Boats carried the pottery and other trade goods to villages throughout the region.

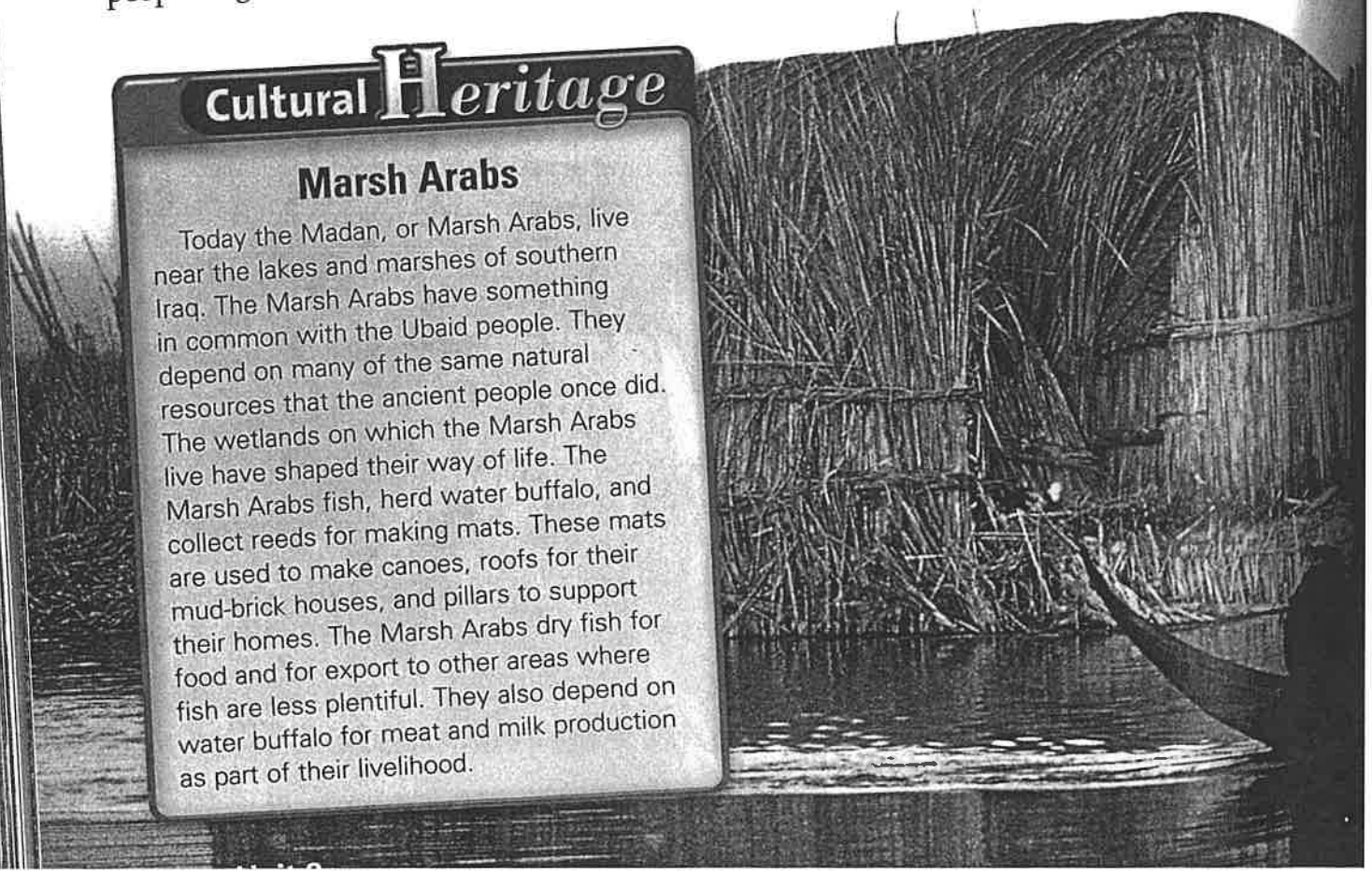
In about 4000 B.C., a new more-advanced culture developed from the Ubaid culture. Still, the Ubaid culture formed the foundation for the civilization that eventually developed in southern Mesopotamia.

READING CHECK **SUMMARIZE**
How did life change for the people of the Ubaid culture?

Cultural Heritage

Marsh Arabs

Today the Madan, or Marsh Arabs, live near the lakes and marshes of southern Iraq. The Marsh Arabs have something in common with the Ubaid people. They depend on many of the same natural resources that the ancient people once did. The wetlands on which the Marsh Arabs live have shaped their way of life. The Marsh Arabs fish, herd water buffalo, and collect reeds for making mats. These mats are used to make canoes, roofs for their mud-brick houses, and pillars to support their homes. The Marsh Arabs dry fish for food and for export to other areas where fish are less plentiful. They also depend on water buffalo for meat and milk production as part of their livelihood.



From City to Civilization

After the Ubaid culture, the people known as the Sumerians developed many new ideas in southern Mesopotamia. These ideas led to complex cultures in the region.

By 4000 B.C., farming villages had spread in southern Mesopotamia. Using agricultural techniques to produce food surpluses, some villages emerged as the first cities. The cities of **Eridu**, **Uruk**, **Kish**, and **Ur** had developed by 3500 B.C. Soon, the Sumerians formed one of the world's first civilizations in Sumer.

READING CHECK **DRAW CONCLUSIONS**

What was necessary for the development of the first cities?

Summary

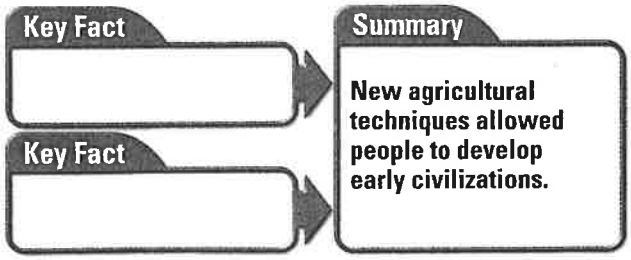
Like some other major river systems, the Tigris and Euphrates Rivers gave rise to an early civilization. Between these rivers in southern Mesopotamia, the Sumerians developed new ideas for more complex cultures there. This led to one of the world's first civilizations in Sumer.

REVIEW

1. How did the world's major river systems support the development of early civilizations?
2. Use the terms **alluvial plain** and **silt** to tell how agriculture developed in Mesopotamia.
3. What role did the Ubaid people play in the development of Mesopotamian civilization?

CRITICAL THINKING

4. ANALYSE SKILL Do you think that a civilization would have developed in the Tigris and Euphrates Valley if irrigation had not been developed there? Explain.
5. From what you have read, how do you think villagers probably reacted when their villages were washed away?
6. **Do Research** Using maps and reference books, locate and describe the four major river systems discussed in this lesson. For each river, write down its source, its length, the body of water it empties into, and the present-day countries it flows through.
7. Focus Skill **SUMMARIZE**
On a separate sheet of paper, copy and complete the graphic organizer below.



Lesson 2

Time

6000 B.C. | 3000 B.C. | B.C./A.D.

3000 B.C. City-states flourish in Sumer

2000 B.C. The city-state of Ur is abandoned

Independent Sumerian City-States

WHAT TO KNOW
What were the world's first city-states like?

- Explain the relationship among city-states.
- Understand the religious beliefs of people in city-states.

VOCABULARY
city-state p. 103
monarchy p. 104
authority p. 104
polytheism p. 104
caravan p. 105
architecture p. 106

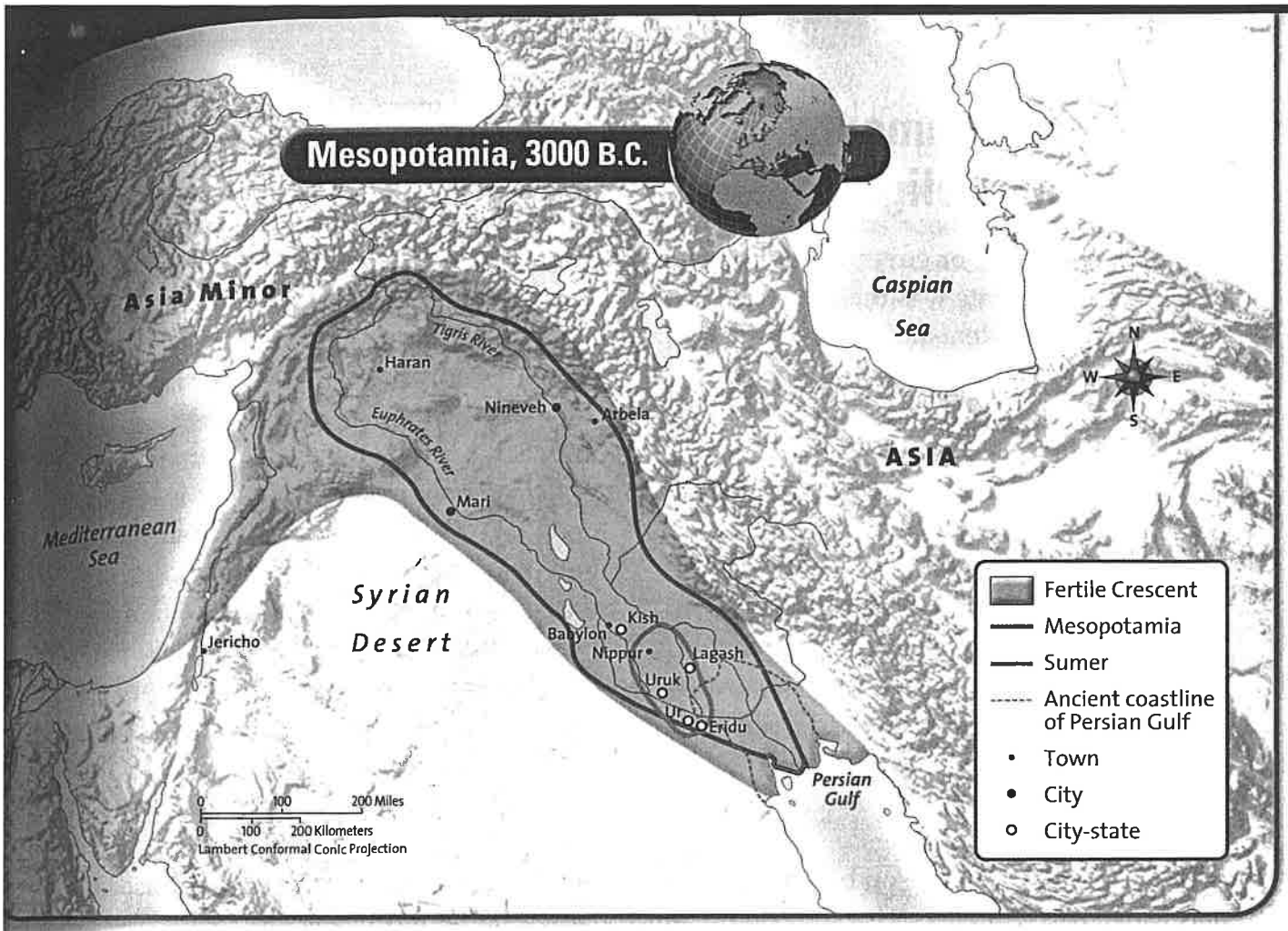
PEOPLE
Leonard Woolley

PLACES
Ur
Mesopotamia
Kish
Uruk
Eridu
Sumer

Focus Skill **SUMMARIZE**

YOU ARE THERE The year is 1933, and you're hard at work on an archaeological dig in Iraq. Uncovering the remains of the ancient Sumerian city of **Ur** is exciting work. So far, you and your team have found what seem to be royal tombs. You have identified beautiful headdresses of gold and jewels, golden cups, and even bones of people who once lived there. You wonder what the people's lives were like, what they thought about, how they dressed, and what they ate. You know that the artifacts you are finding may help answer these questions.

This photo, taken in 1933, shows the excavation of the city of Ur.



SKILL Analyze Maps **Sumerian city-states were located within the larger region of Mesopotamia. Mesopotamia is part of the Fertile Crescent.**

What physical features made Sumer a good place to settle?

The Emergence of Cities

In southern **Mesopotamia**, Sumerian cities such as Ur, **Kish**, **Uruk**, and **Eridu** proved to be very successful. Economic surpluses allowed these and other cities to emerge as centers of culture and power. By 3000 B.C., about 12 cities in **Sumer** had developed into the world's first city-states.

In ancient times, a **city-state** included a walled city and the land around it, such as farmland. Each also had its own government. Inside clearly marked borders, most early city-states covered several square miles and had populations of about 5,000 people. Over time, some city-states grew to more than 1,500 square miles, with populations of as many as 60,000 people.

Although each Sumerian city-state was independent, the people shared a common culture. They followed similar religious practices, spoke the Sumerian language, and developed a writing system. They also created buildings, art, and crafts that were unique to Sumerian society.

The Sumerians and earlier people of the region made achievements in technology as well. Many advances, such as irrigation, helped them produce economic surpluses.

All this led to the development of an early civilization in Sumer. Over time, this civilization would spread throughout Mesopotamia.

READING CHECK SUMMARIZE

What were the main features of a Sumerian city-state?

Government and Religion

The first political, or government, structure of each city-state was made up of a small group of leaders and a chief leader chosen by the group. Together, they made laws, decided what work had to be done, and dealt with disputes over land or water rights. While some disputes were settled peacefully, others led to war.

When faced with war, the different leaders who ruled a city-state could not always agree about what to do. It became clear that a single leader was needed. This led the Sumerians to form the world's first **monarchy**, or governing system ruled by a king or a queen. In Sumerian city-states, the rulers were always kings.

When a king died, his son became the new king. This change made Sumerian monarchies more stable than previous kinds of government.

From a walled palace, the king governed firmly. He had complete **authority**, or power, over religion, the economy, and everyday life. The king appointed officials to carry out his orders, often concerning economic surpluses and building projects.

Below the king, priests were the most important people in society. Sumerians practiced **polytheism**, the belief in many gods. They believed that each natural event had its own god and that one god protected each different city-state. A temple was built in the center of the city-state to worship that god. At temples, the priests held ceremonies to please the gods, especially those connected to agriculture. This religious structure was central to life.

READING CHECK **SUMMARIZE**

What new governing system came to be used in Sumer?

A Commercial Society

The cities of Sumer buzzed with activity. Their economic structures were based on economic surpluses. The ability to create surpluses led to new kinds of jobs, to the production of new goods, and to trade.

Surpluses of crops enabled some Sumerians to perform work other than farming. In each city, some people became craftworkers, metalworkers, and builders.

Finding raw materials for these workers was not always easy—neither metals nor trees could be found in Sumer. To get raw materials, the city-states exported agricultural surpluses such as grains and dates. In exchange, Sumerians imported metals, wood, and other resources.

Sumerians depended on long-distance trade. Groups of traders traveled together on long journeys. These **caravans** carried trade goods by donkeys throughout the Fertile Crescent and beyond. Later, traders used sailboats to carry goods on waterways to distant places. By 2300 B.C., Sumerian trade extended from Egypt and the eastern Mediterranean to perhaps as far as the Indus Valley in what is now Pakistan.

The Sumerians needed a way to keep track of what they traded. They began to use clay tokens to record trade. Later, they recorded such information on clay tablets.

READING CHECK **CAUSE AND EFFECT**
Why were the Sumerians able to perform work other than farming?

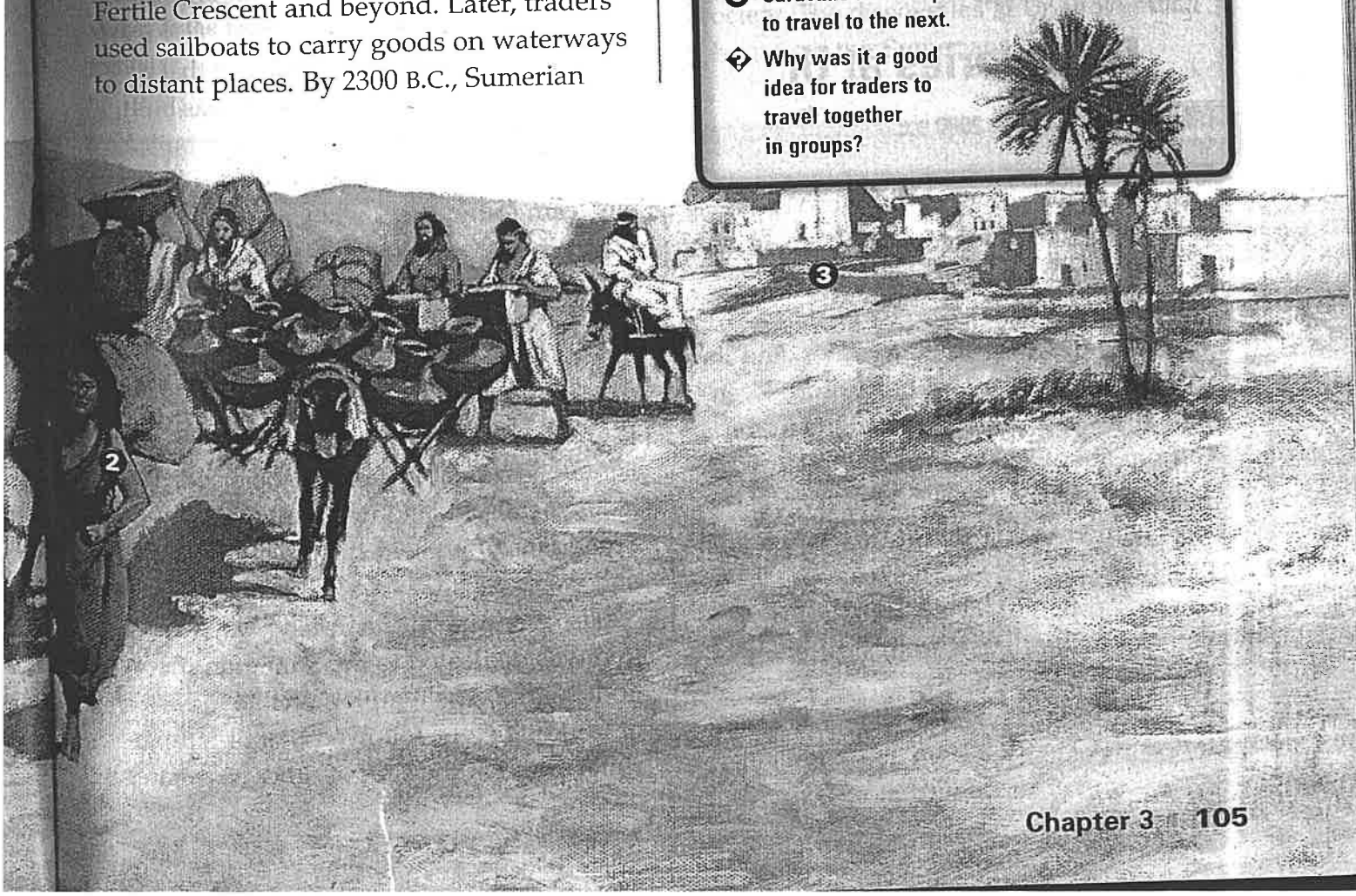
A Closer Look

Caravan

Caravans traveled between settlements to supply them with needed goods.

1. **Traders in caravans mainly used donkeys to carry their goods. Camels were used later.**
2. **Most people in caravans walked beside their animals instead of riding them because the donkeys were loaded down with goods.**
3. **Caravans left one place to travel to the next.**

Why was it a good idea for traders to travel together in groups?



The Layers of Ur

Ubaid pottery

SKILL Analyze Drawings
When Leonard Woolley and his team dug up the ruins of Ur, they found many different layers. Each layer provided a glimpse into the lives of different people who lived at different times at the location.

1. Ubaid community
2. Eight feet of mud
3. The Royal Tombs of Ur
4. Ruins of mud-brick buildings

What can be learned from studying each layer?

Discoveries at Ur

TIME 5000 B.C. to 2000 B.C.
PLACE Ur

Long ago, the city of Ur lay close to the Euphrates River, but the river has changed its course many times through the years. Today, the land where the city once stood is now 12 miles from the Euphrates, and its once fertile fields are part of a desert. Even so, the ruins of Ur offer clues to life in the area from about 5000 B.C. to 2000 B.C.

Beginning in the 1920s, a British archaeologist named **Leonard Woolley** led an excavation at Ur. He and his team uncovered many different layers in the ruins. Each layer held artifacts from a different period of Ur's history.

In the deepest layer, archaeologists found the remains of an Ubaid village. Above that layer was 8 feet of mud, evidence that a flood destroyed Ur soon after it was built.

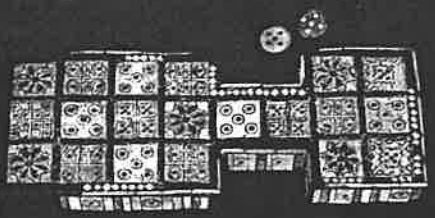
After the flood, the Sumerians rebuilt Ur. In the ruins of the rebuilt city, Woolley and his team found the Royal Cemetery of Ur, which held tombs from the 2500s B.C.

The tombs at Ur reveal a highly developed society. Artifacts from the tombs showed the skill of Sumerian craftworkers and the existence of long-distance trade. Tombs of royalty and high priests contained valuable items made of precious metals and stones. Tombs of other Sumerians often held such items as jewelry and weapons.

Discoveries at Ur included a large temple that was dedicated to the Sumerian moon god, Nanna. The temple's **architecture**, or building style, followed that of temple ruins found at the sites of other city-states.

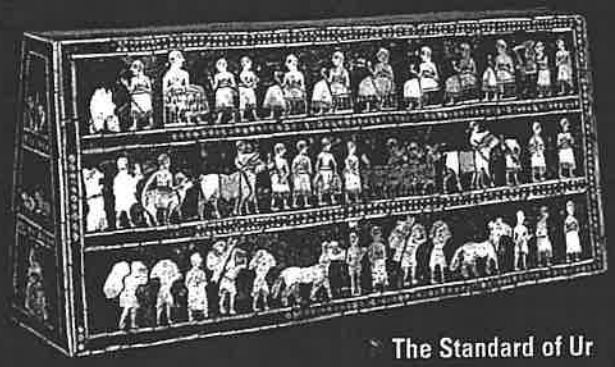
Silver lyre from Ur

Ur pendant



The Royal Game of Ur

Ur golden helmet



The Standard of Ur

The rest of the city consisted of small mud-brick houses built along narrow alleys.

The highest layer of ruins dates from about 2000 B.C. At that time, the Euphrates changed course and Ur was abandoned.

READING CHECK **SUMMARIZE**

What do the tombs at Ur reveal about the city's culture?

Summary

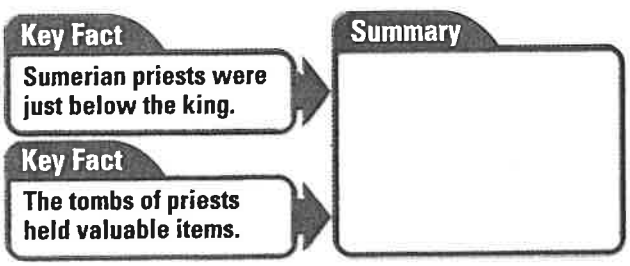
Some Sumerian cities grew into city-states, which led to an early civilization in Mesopotamia. The Sumerians had an advanced government, economy, and society. The discoveries at Ur show much about how the Sumerians lived.

REVIEW

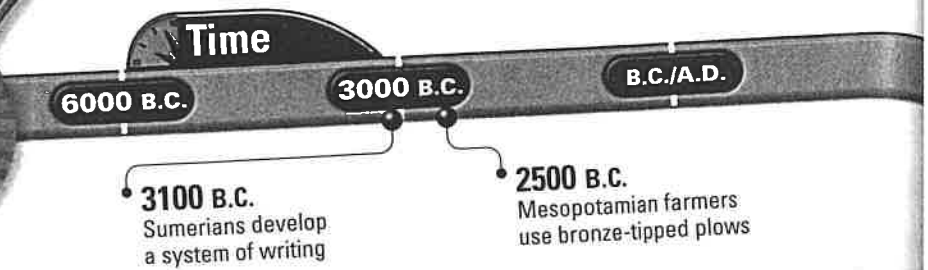
1. What were the world's first city-states like?
2. Write a sentence that includes the terms **city-state** and **monarchy**.
3. When and why was Ur abandoned?
4. What tools did the Sumerians use to keep track of trade, and how do you think they used them?

CRITICAL THINKING

5. ANALYSIS SKILL What clues do you think led archaeologists to conclude that a terrible flood had destroyed Ur?
6. How might archaeologists have known which tombs at Ur were those of royalty or priests and which tombs were not?
7. **Write an Explanation** Using the information about Ur in this lesson, write an essay that explains the importance of religion in Sumerian city-states. Tell how archaeological discoveries at Ur support your explanation.
8. FOCUS SKILL **SUMMARIZE**
   On a separate sheet of paper, copy and complete the graphic organizer below.



Lesson 3



Mesopotamian Achievements

WHAT TO KNOW
What were the achievements of people in Mesopotamia?

- Explain how the Mesopotamians were able to achieve all they did.
- Describe the development of Sumerian writing.

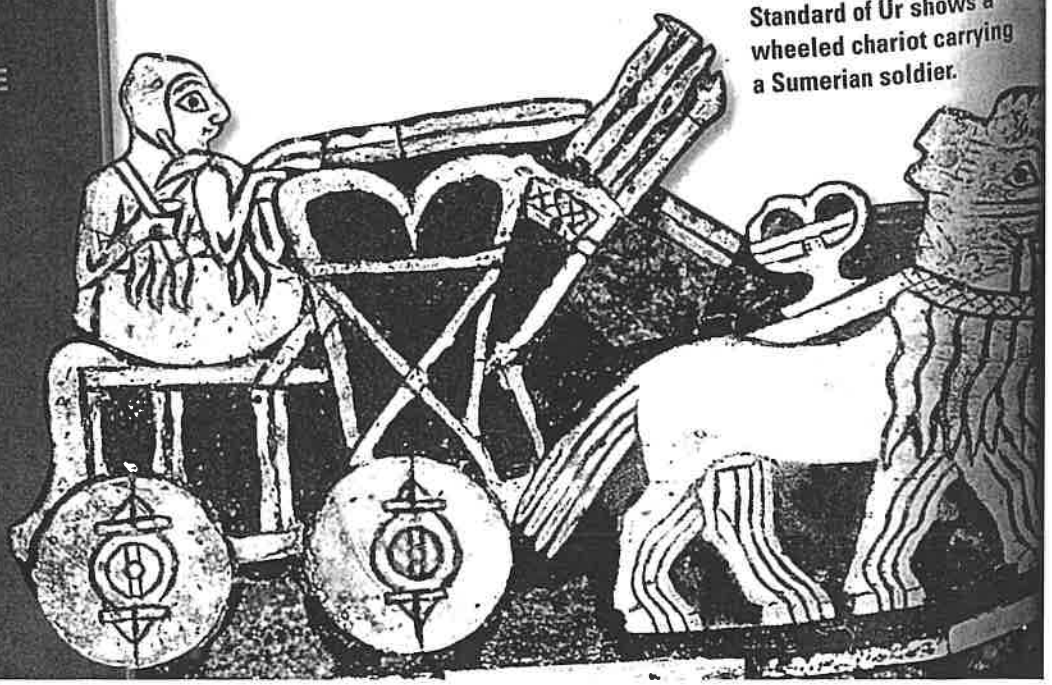
VOCABULARY
innovation p. 109
almanac p. 109
ziggurat p. 111
cuneiform p. 112
scribe p. 112

PLACES
Mesopotamia
Ur
Kish
Uruk

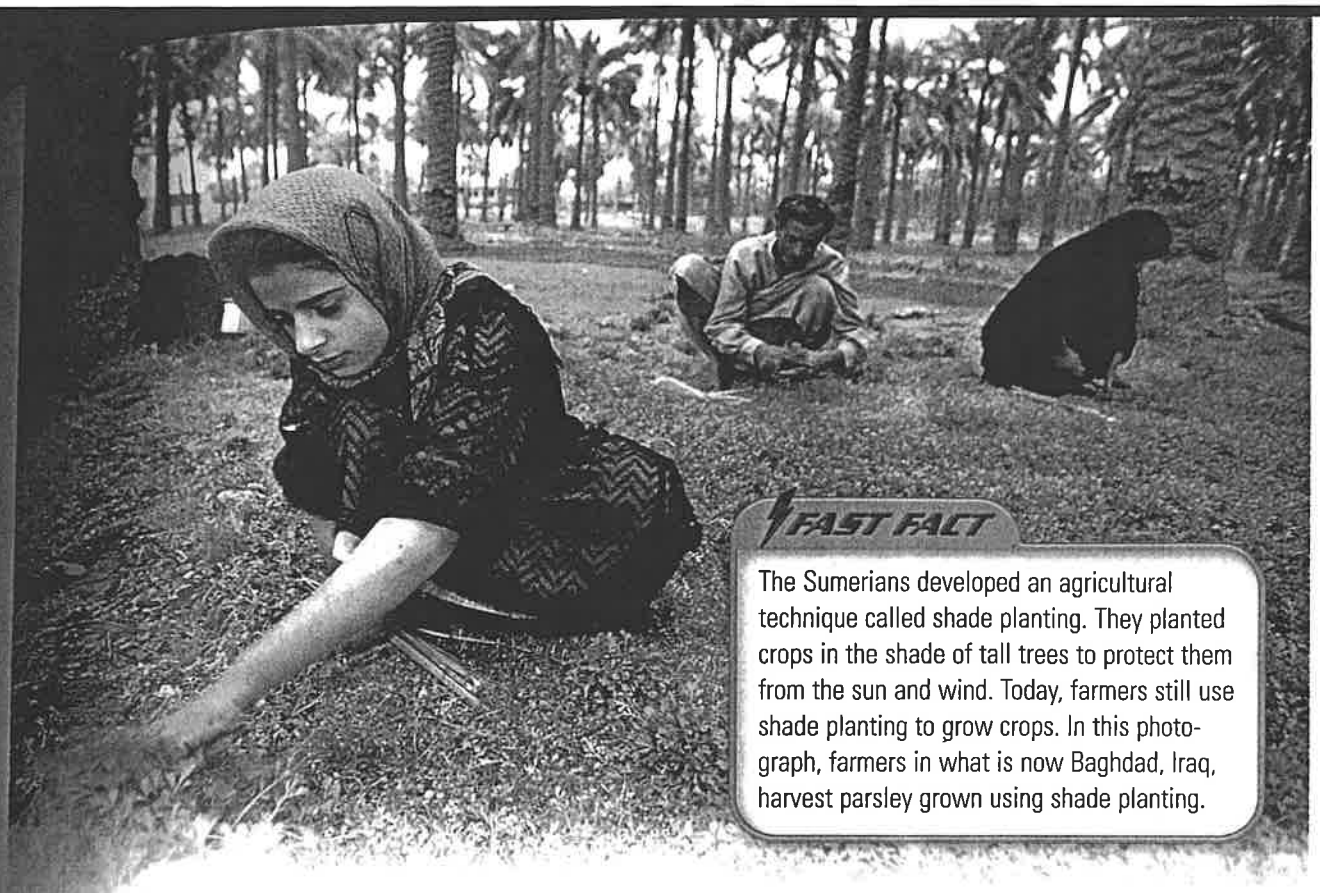
Focus Skill SUMMARIZE

YOU ARE THERE Times are changing in **Mesopotamia** in 2500 B.C. You've just loaded newly harvested wheat into your wheeled cart. You hitch your oxen to the cart and head for the place where surplus grain is stored. There, workers load your grain into baskets and weigh it, allowing you to learn exactly how much grain your farm has produced.

Afterward, you visit the metalworkers' neighborhood to trade some grain for new products. They have sturdy plows, smooth cups, and beautiful ornaments, all made of bronze. Everything looks as though it'll last forever!



▶ This close-up of the Standard of Ur shows a wheeled chariot carrying a Sumerian soldier.



FAST FACT

The Sumerians developed an agricultural technique called shade planting. They planted crops in the shade of tall trees to protect them from the sun and wind. Today, farmers still use shade planting to grow crops. In this photograph, farmers in what is now Baghdad, Iraq, harvest parsley grown using shade planting.

Agricultural Techniques

The people of Mesopotamia, especially the Sumerians, are remembered for their many **innovations**, or new ways of doing things. For example, early farmers developed new agricultural techniques, such as irrigation, leading to economic surpluses.

At first, the Mesopotamians used only simple technology for farming. Early tools, such as sickles and hoes, were made of clay and copper. In time, metalworkers started mixing copper with tin to produce bronze, which is much stronger than copper alone. By 2500 B.C., many farmers were using bronze tools such as bronze-tipped plows. With stronger plows, farmers could turn soil more easily, which led to larger fields that produced larger crops.

Next, farmers found a way to plow and plant at the same time by attaching a funnel filled with seeds to the plow. As the plow moved along each row, the seeds were released from the funnel. This agricultural technique allowed fewer farmers to plant more crops.

The Sumerians even wrote advice for farmers. In Mesopotamia, archaeologists have found **almanacs** written on clay tablets. These writings included information that described the best way to plant, to irrigate land, and to care for crops. One ancient Sumerian almanac contained these instructions:

> **"When you are about to cultivate your field, take care to open the irrigation works [so that] their water does not rise too high [in it]."***

READING CHECK **SUMMARIZE**

What agricultural techniques helped the Mesopotamians produce economic surpluses?

*Samuel Noah Kramer. *History Begins at Sumer.* The University of Pennsylvania Press, 1981.

Measurements

Growing city-states needed larger farms to feed all the people. Because of this, land became more important than ever to the early Sumerians. City officials wanted to know how much land each farmer used so that they could keep accurate records. Farmers, too, wanted to know how much land they had so that they could clearly mark the boundaries of their farms. These needs led the Sumerians to develop standard measurements of land.

One measure of land area was an *iku*, also known as the *ikum*, meaning "the field." An *iku* equaled about 37,600 square feet. The idea of the present-day acre, which equals 43,560 square feet, comes from the *iku*.

Sumerians also developed standard units of measurements for weight and volume, including the quart. They used these units to measure crop harvests and to conduct trade. Farmers no longer had to guess how much wheat or barley they were exchanging for a plow or other product.

Measurements required a carefully planned number system. The Sumerians based their number system on the number 60. Our division of time into hours, minutes, and seconds came from this system.

The Sumerians even found a way to measure time. By about 2100 B.C., the Sumerians counted off days in a year, using a 360-day calendar.

READING CHECK **SUMMARIZE**

What advances in measurements did the Sumerians develop?