



Pyramids on the Nile

MAIN IDEA

SCIENCE AND TECHNOLOGY
Using mathematical knowledge and engineering skills, Egyptians built magnificent monuments to honor dead rulers.

WHY IT MATTERS NOW

Many of the monuments built by the Egyptians stand as a testament to their ancient civilization.

TERMS & NAMES

- delta
- Narmer
- pharaoh
- theocracy
- pyramid
- mummification
- hieroglyphics
- papyrus

SETTING THE STAGE To the west of the Fertile Crescent in Africa, another river makes its way to the sea. While Sumerian civilization was on the rise, a similar process took place along the banks of this river, the Nile in Egypt. Yet the Egyptian civilization turned out to be very different from the collection of city-states in Mesopotamia. Early on, Egypt was united into a single kingdom, which allowed it to enjoy a high degree of unity, stability, and cultural continuity over a period of 3,000 years.

The Geography of Egypt

From the highlands of East Africa to the Mediterranean Sea, the Nile River flows northward across Africa for over 4,100 miles, making it the longest river in the world. (See the map on page 36.) A thin ribbon of water in a parched desert land, the great river brings its water to Egypt from distant mountains, plateaus, and lakes in present-day Burundi, Tanzania, Uganda, and Ethiopia.

Egypt's settlements arose along the Nile on a narrow strip of land made fertile by the river. The change from fertile soil to desert—from the Black Land to the Red Land—was so abrupt that a person could stand with one foot in each.

The Gift of the Nile As in Mesopotamia, yearly flooding brought the water and rich soil that allowed settlements to grow. Every year in July, rains and melting snow from the mountains of east Africa caused the Nile River to rise and spill over its banks. When the river receded in October, it left behind a rich deposit of fertile black mud called silt.

Before the scorching sun could dry out the soil, the peasants would prepare their wheat and barley fields. All fall and winter they watered their crops from a network of irrigation ditches.

In an otherwise parched land, the abundance brought by the Nile was so great that the Egyptians worshiped it as a god who gave life and seldom turned against them. As the ancient Greek historian Herodotus (hih•RAHD•uh•tuhs) remarked in the fifth century B.C., Egypt was the “gift of the Nile.”

Environmental Challenges Egyptian farmers were much more fortunate than the villagers of Mesopotamia. Compared to the unpredictable Tigris and Euphrates rivers, the Nile was as regular as clockwork. Even so, life in Egypt had its risks.

TAKING NOTES

Summarizing Use a web diagram to summarize Egyptian achievements.





The Mighty Nile
 The Landsat image (left) shows the Nile flowing into its delta. An outline of the continental United States (right) shows the length of the Nile's course. The actual length of the Nile with all its twists and turns is more than 4,100 miles.

GEOGRAPHY SKILLBUILDER: Interpreting Maps

- 1. Movement** In which direction does the Nile flow?
- 2. Location** Describe the location of Upper Egypt and Lower Egypt.

- When the Nile's floodwaters were just a few feet lower than normal, the amount of fresh silt and water for crops was greatly reduced. Thousands of people starved.
- When floodwaters were a few feet higher than usual, the unwanted water destroyed houses, granaries, and the precious seeds that farmers needed for planting.
- The vast and forbidding deserts on either side of the Nile acted as natural barriers between Egypt and other lands. They forced Egyptians to live on a very small portion of the land and reduced interaction with other peoples.

However, the deserts shut out invaders. For much of its early history, Egypt was spared the constant warfare that plagued the Fertile Crescent. **A**

Upper Egypt and Lower Egypt Ancient Egyptians lived along the Nile from the mouth well into the interior of Africa. River travel was common, but it ended at the point in the Nile where boulders turn the river into churning rapids called a cataract (KAT•uh•rakt). This made it impossible for riverboats to pass this spot, known as the First Cataract, to continue upstream south to the interior of Africa.

Between the First Cataract and the Mediterranean lay two very different regions. Because its elevation is higher, the river area in the south is called Upper Egypt. It is a skinny strip of land from the First Cataract to the point where the river starts to fan out into many branches. To the north, near the sea, Lower Egypt includes the Nile delta region. The delta begins about 100 miles before the river enters the Mediterranean. The delta is a broad, marshy, triangular area of land formed by deposits of silt at the mouth of the river.

MAIN IDEA

Contrasting

A What was the main difference between the flooding of the Nile and that of the rivers in Mesopotamia?

The Nile provided a reliable system of transportation between Upper and Lower Egypt. The Nile flows north, so northbound boats simply drifted with the current. Southbound boats hoisted a wide sail. The prevailing winds of Egypt blow from north to south, carrying sailboats against the river current. The ease of contact made possible by this watery highway helped unify Egypt's villages and promote trade.

Egypt Unites into a Kingdom

Egyptians lived in farming villages as far back as 5000 B.C., perhaps even earlier. Each village had its own rituals, gods, and chieftain. By 3200 B.C., the villages of Egypt were under the rule of two separate kingdoms, Lower Egypt and Upper Egypt. Eventually the two kingdoms were united. There is conflicting historical evidence over who united Upper and Lower Egypt. Some evidence points to a king called Scorpion. More solid evidence points to a king named Narmer.

The king of Lower Egypt wore a red crown, and the king of Upper Egypt wore a tall white crown shaped like a bowling pin. A carved piece of slate known as the Narmer Palette shows Narmer wearing the crown of Lower Egypt on one side and the crown of Upper Egypt on the other side. Some scholars believe the palette celebrates the unification of Egypt around 3000 B.C.

Narmer created a double crown from the red and white crowns. It symbolized a united kingdom. He shrewdly settled his capital, Memphis, near the spot where Upper and Lower Egypt met, and established the first Egyptian dynasty. Eventually, the history of ancient Egypt would consist of 31 dynasties, spanning 2,600 years. Historians suggest that the pattern for Egypt's great civilization was set during the period from 3200 to 2700 B.C. The period from 2660 to 2180 B.C., known as the Old Kingdom, marks a time when these patterns became widespread.

Pharaohs Rule as Gods The role of the king was one striking difference between Egypt and Mesopotamia. In Mesopotamia, kings were considered to be representatives of the gods. To the Egyptians, kings were gods. The Egyptian god-kings, called **pharaohs** (FAIR•ohz), were thought to be almost as splendid and powerful as the gods of the heavens. This type of government in which rule is based on religious authority is called a **theocracy**.

The pharaoh stood at the center of Egypt's religion as well as its government and army. Egyptians believed that the pharaoh bore full responsibility for the kingdom's well-being. It was the pharaoh who caused the sun to rise, the Nile to flood, and the crops to grow. It was the pharaoh's duty to promote truth and justice. **B**

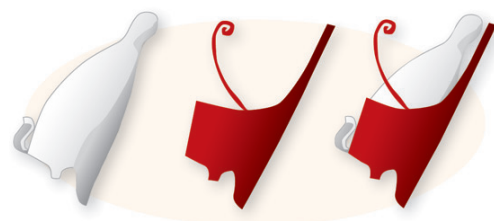
Builders of the Pyramids Egyptians believed that their king ruled even after his death. He had an eternal life force, or *ka*, which continued to take part in the governing of Egypt. In the Egyptians' mind, the *ka* remained much like a living king in its needs and pleasures. Since kings expected to reign forever, their tombs were even more important than their palaces. For the kings of the Old Kingdom, the resting place after death was an immense structure called a **pyramid**. The Old Kingdom was the great age of pyramid building in ancient Egypt.

Connect to Today

Scorpion King

In 1999 Egyptologists discovered a series of carvings on a piece of rock about 18 by 20 inches. The tableau scene has symbols that may refer to a king named Scorpion.

The rock shows a figure carrying a staff. Near the head of the figure is a scorpion. Another artifact, a macehead, also shows a king with the scorpion symbol. Both artifacts suggest that Egyptian history may go back to around 3250 B.C. Some scholars believe the Scorpion is the earliest king to begin unification of Egypt, represented by the double crown shown below.



crown of
Upper Egypt

crown of
Lower Egypt

crown of Upper
and Lower Egypt

MAIN IDEA

Making Inferences

B Why were Egypt's pharaohs unusually powerful rulers?

These magnificent monuments were remarkable engineering achievements, built by people who had not even begun to use the wheel. Unlike the Sumerians, however, the Egyptians did have a good supply of stone, both granite and limestone. For the Great Pyramid of Giza, for example, the limestone facing was quarried just across the Nile. Each perfectly cut stone block weighed at least 2 1/2 tons. Some weighed 15 tons. More than 2 million of these blocks were stacked with precision to a height of 481 feet. The entire structure covered more than 13 acres.

The pyramids also reflect the strength of the Egyptian civilization. They show that Old Kingdom dynasties had developed the economic strength and technological means to support massive public works projects, as well as the leadership and government organization to carry them out.

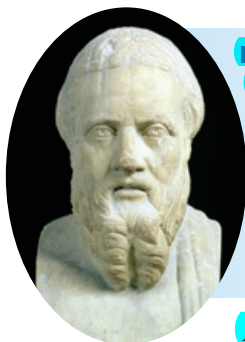
Egyptian Culture

With nature so much in their favor, Egyptians tended to approach life more confidently and optimistically than their neighbors in the Fertile Crescent. Religion played an important role in the lives of Egyptians.

Religion and Life Like the Mesopotamians, the early Egyptians were polytheistic, believing in many gods. The most important gods were Re, the sun god, and Osiris (oh•SY•rihs), god of the dead. The most important goddess was Isis, who represented the ideal mother and wife. In all, Egyptians worshiped more than 2,000 gods and goddesses. They built huge temples to honor the major deities.

In contrast to the Mesopotamians, with their bleak view of death, Egyptians believed in an afterlife, a life that continued after death. Egyptians believed they would be judged for their deeds when they died. Anubis, god and guide of the underworld, would weigh each dead person's heart. To win eternal life, the heart could be no heavier than a feather. If the heart tipped the scale, showing that it was heavy with sin, a fierce beast known as the Devourer of Souls would pounce on the impure heart and gobble it up. But if the soul passed this test for purity and truth, it would live forever in the beautiful Other World.

People of all classes planned for their burials, so that they might safely reach the Other World. Kings and queens built great tombs, such as the pyramids, and other Egyptians built smaller tombs. Royal and elite Egyptians' bodies were preserved by mummification, which involves embalming and drying the corpse to prevent it from decaying. Scholars still accept Herodotus's description of the process of mummification as one of the methods used by Egyptians.



PRIMARY SOURCE C

First, they draw out the brains through the nostrils with an iron hook. . . . Then with a sharp stone they make an incision in the side, and take out all the bowels. . . . Then, having filled the belly with pure myrrh, cassia, and other perfumes, they sew it up again; and when they have done this they steep it in natron [a mineral salt], leaving it under for 70 days. . . . At the end of 70 days, they wash the corpse, and wrap the whole body in bandages of waxen cloth.

HERODOTUS, *The History of Herodotus*

Attendants placed the mummy in a coffin inside a tomb. Then they filled the tomb with items the dead person could use in the afterlife, such as clothing, food, cosmetics, and jewelry. Many Egyptians purchased scrolls that contained hymns, prayers, and magic spells intended to guide the soul in the afterlife. This collection of texts is known as the *Book of the Dead*.

Vocabulary

deities: gods or goddesses

MAIN IDEA

Analyzing Primary Sources

C What does this description suggest about the Egyptians' knowledge of the human body?

Pyramids and Mummies

Etched into some of the stones of the pyramids are the nicknames of the teams of workers who built them—"the Vigorous Gang," "the Enduring Gang," and "the Craftsman Gang," for example. Just as construction workers today leave their marks on the skyscrapers they build, the pyramid builders scratched messages for the ages inside the pyramids.

Who were the pyramid builders? Peasants provided most of the labor. They worked for the government when the Nile was in flood and they could not farm. In return for their service, though, the country provided the workers with food and housing during this period.



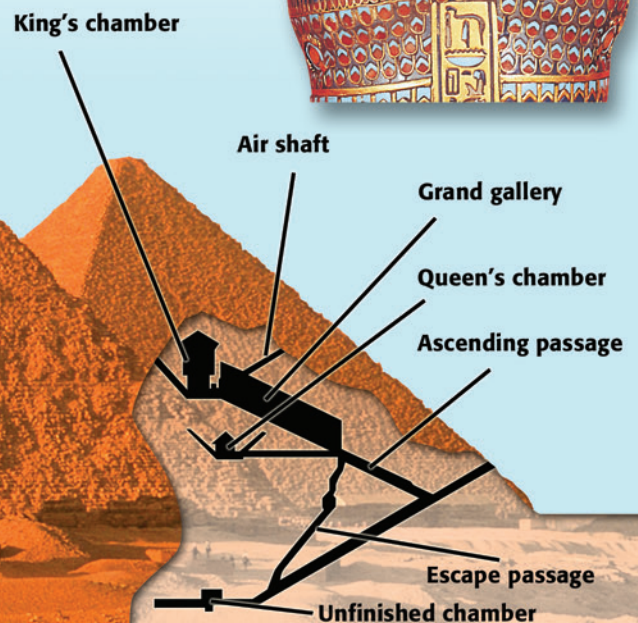
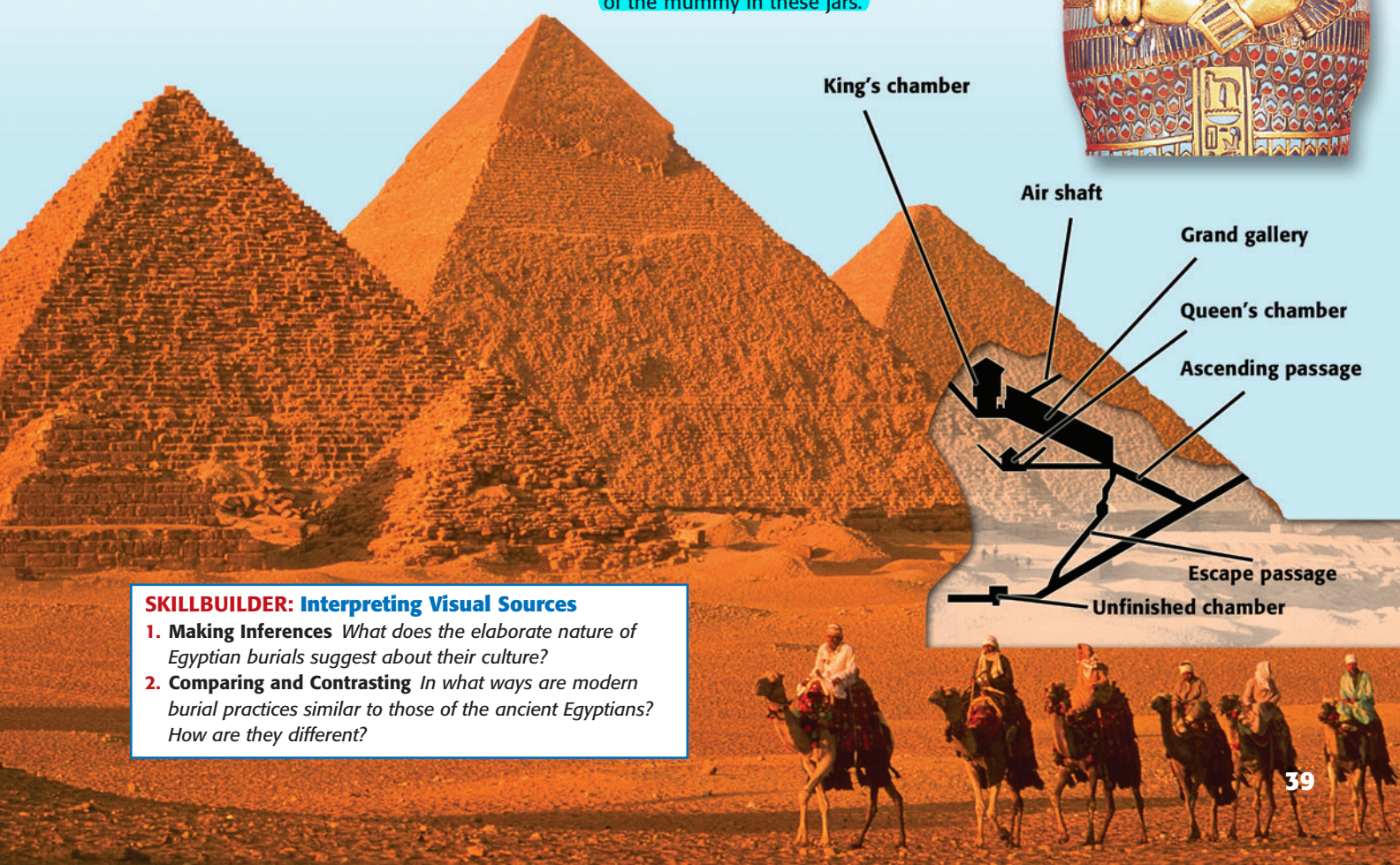
▼ The largest of the pyramids is the Great Pyramid (right background) at Giza, completed about 2556 B.C. The diagram shows how the interior of a pyramid looks.

▲ These clay vessels are called Canopic jars. After preparing the mummy, embalmers placed the brain, liver, and other internal organs of the mummy in these jars.



◀ The ancient Egyptians mummified the body so the soul could return to it later. Egyptian embalmers were so skillful that modern archaeologists have found mummies that still have hair, skin, and teeth.

▼ This solid gold death mask of the pharaoh Tutankhamen covered the head of his mummy. The mask, which weighs 22.04 pounds, is part of a popular exhibit in the Egyptian Museum in Cairo, Egypt.



SKILLBUILDER: Interpreting Visual Sources

- 1. Making Inferences** *What does the elaborate nature of Egyptian burials suggest about their culture?*
- 2. Comparing and Contrasting** *In what ways are modern burial practices similar to those of the ancient Egyptians? How are they different?*

Life in Egyptian Society

Like the grand monuments to the kings, Egyptian society formed a pyramid. The king, queen, and royal family stood at the top. Below them were the other members of the upper class, which included wealthy landowners, government officials, priests, and army commanders. The next tier of the pyramid was the middle class, which included merchants and artisans. At the base of the pyramid was the lower class, by far the largest class. It consisted of peasant farmers and laborers.

In the later periods of Egyptian history, slavery became a widespread source of labor. Slaves, usually captives from foreign wars, served in the homes of the rich or toiled endlessly in the gold mines of Upper Egypt.

The Egyptians were not locked into their social classes. Lower-and middle-class

Egyptians could gain higher status through marriage or success in their jobs. Even some slaves could hope to earn their freedom as a reward for their loyal service. To win the highest positions, people had to be able to read and write. Once a person had these skills, many careers were open in the army, the royal treasury, the priesthood, and the king's court.

Women in Egypt held many of the same rights as men. For example, a wealthy or middle-class woman could own and trade property. She could propose marriage or seek divorce. If she were granted a divorce, she would be entitled to one-third of the couple's property. **D**

Egyptian Writing As in Mesopotamia, the development of writing was one of the keys to the growth of Egyptian civilization. Simple pictographs were the earliest form of writing in Egypt, but scribes quickly developed a more flexible writing system called **hieroglyphics** (HY•ur•uh•GLIHF•ihks). This term comes from the Greek words *hieros* and *gluph*, meaning “sacred carving.”

As with Sumerian cuneiform writing, in the earliest form of hieroglyphic writing, a picture stood for an idea. For instance, a picture of a man stood for the idea of a man. In time, the system changed so that pictures stood for sounds as well as ideas. The owl, for example, stood for an *m* sound or for the bird itself. Hieroglyphs could be used almost like letters of the alphabet.

Although hieroglyphs were first written on stone and clay, as in Mesopotamia, the Egyptians soon invented a better writing surface—**papyrus** (puh•PY•ruhs) reeds. These grew in the marshy delta. The Egyptians split the reeds into narrow strips, placed them crosswise in two layers, dampened them, and then pressed them. As the papyrus dried, the plant's sap glued the strips together into a paperlike sheet.

Egyptian Science and Technology Practical needs led to many Egyptian inventions. For example, the Egyptians developed a calendar to help them keep track of the time between floods and to plan their planting season. Priests observed that the same star—Sirius—appeared above the eastern horizon just before the floods came.

MAIN IDEA

Comparing

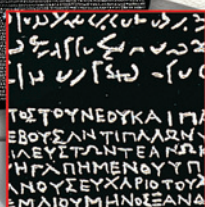
D How was the status of women similar in Egyptian and Sumerian society?

History *in* Depth

The Rosetta Stone

In 1799, near the delta village of Rosetta, some French soldiers found a polished black stone inscribed with a message in three languages. One version was written in hieroglyphics (top inset). A second version was in a simpler form of hieroglyphics, and the third was in Greek (both are shown in the bottom inset).

Since ancient Greek was a well-known language, it provided clues to the meaning of the hieroglyphics. Still, deciphering the Rosetta Stone took many years. In 1822, a French scholar named Jean François Champollion (shahm•paw•LYAWN) finally broke the code of the hieroglyphics.



They calculated the number of days between one rising of the star and the next as 365 days—a solar year. They divided this year into 12 months of 30 days each and added five days for holidays and feasting. This calendar was so accurate that it fell short of the true solar year by only six hours.

Egyptians developed a system of written numbers for counting, adding, and subtracting. The system would have helped to assess and collect taxes. Scribes used an early form of geometry to survey and reset property boundaries after the annual floods. Mathematical knowledge helped Egypt's skillful engineers and architects make accurate measurements to construct their remarkable pyramids and palaces. Egyptian architects were the first to use stone columns in homes, palaces, and temples.

MAIN IDEA

Summarizing

E What were the main achievements of the ancient Egyptians?

Egyptian medicine was also famous in the ancient world. Egyptian doctors knew how to check a person's heart rate by feeling for a pulse in different parts of the body. They set broken bones with splints and had effective treatments for wounds and fevers. They also used surgery to treat some conditions. **E**

Invaders Control Egypt

The power of the pharaohs declined about 2180 B.C., marking the end of the Old Kingdom. Strong pharaohs regained control during the Middle Kingdom (2040–1640 B.C.) and restored law and order. They improved trade and transportation by digging a canal from the Nile to the Red Sea. They built huge dikes to trap and channel the Nile's floodwaters for irrigation. They also created thousands of new acres of farmland by draining the swamps of Lower Egypt.

The prosperity of the Middle Kingdom did not last. In about 1640 B.C., a group from the area of Palestine moved across the Isthmus of Suez into Egypt. These people were the Hyksos (HIHK•sahs), which meant “the rulers of foreign lands.” The Hyksos ruled much of Egypt from 1630 to 1523 B.C.

Egypt would rise again for a new period of power and glory, the New Kingdom, which is discussed in Chapter 4. During approximately the same time period as the Old Kingdom and Middle Kingdom existed in Egypt, civilization was emerging in the Indus River Valley.

SECTION

2

ASSESSMENT

TERMS & NAMES 1. For each term or name, write a sentence explaining its significance.

- delta
- Narmer
- pharaoh
- theocracy
- pyramid
- mummification
- hieroglyphic
- papyrus

USING YOUR NOTES

2. Which of the Egyptian achievements do you consider the most important? Explain.



MAIN IDEAS

3. How did being surrounded by deserts benefit Egypt?
4. How did the Egyptians view the pharaoh?
5. Why did Egyptians mummify bodies?

CRITICAL THINKING & WRITING

6. **DRAWING CONCLUSIONS** Which of the three natural features that served as boundaries in ancient Egypt was most important to Egypt's history? Explain.
7. **RECOGNIZING EFFECTS** What impact did Egyptian religious beliefs have on the lives of Egyptians?
8. **COMPARING AND CONTRASTING** How were cuneiform and hieroglyphic writing similar? different?
9. **WRITING ACTIVITY** **SCIENCE AND TECHNOLOGY** Select an Egyptian invention or achievement. Write a **paragraph** about how your selected achievement changed the Egyptians' life.

CONNECT TO TODAY CREATING A LANGUAGE

Devise a **set of symbols** to create a language. Write several sentences and have classmates try to decipher the message.

Social History

Work and Play in Ancient Egypt

For ancient Egyptians, life often involved hard work. When the weather was good, most worked in the fields, producing food for their families and for export. During flood season, thousands of these farmers were called upon to help build the pharaohs' temples.

But life was not all about work. Archaeological digs offer evidence that both upper-class Egyptians and the common people found ways to enjoy themselves.

INTEGRATED TECHNOLOGY

RESEARCH LINKS For more on life in ancient Egypt, go to classzone.com



▲ Farmers

This detail from a tomb painting shows Egyptian farmers at work. Egyptians grew enough wheat and barley to have food reserves for themselves and for export to other civilizations. They also grew fruit and vegetables in irrigated fields.

▼ Games

Games were popular with all classes of Egyptian society. The board shown below is for the game senet—also depicted in the painting. Players threw sticks or knuckle bones to move their pieces through squares of good or bad fortune. A player won by moving all his or her pieces off the board.



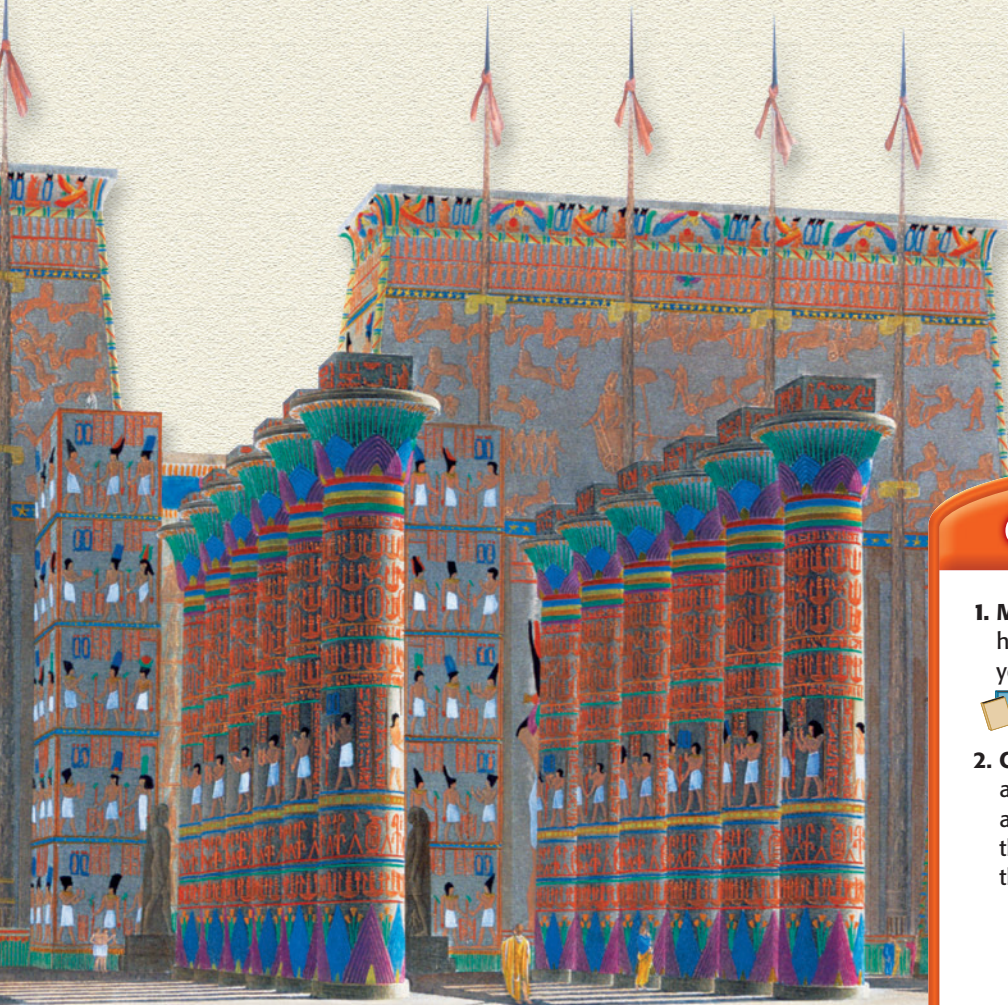


▲ Cosmetics

Ancient Egyptians used cosmetics for both work and play. They protected field workers from sun and heat and were used to enhance beauty. Egyptian men and women applied makeup, called kohl, to their eyes. They made kohl from minerals mixed with water. They also soaked flowers and fragrant woods in oil and rubbed the oil into their skin. The dark eye makeup softened the glare of the sun. The oils protected their skin from the dry air. Egyptians kept their cosmetics in chests such as the one shown above.

▼ Temple Builders

The artist's colorful drawing of what the Karnak Temple Complex might have looked like explains why Egyptian pharaohs needed thousands of laborers to build their temples. Some historians believe the laborers may have been part of a rotating workforce drafted from the agricultural classes around Egypt—a form of community service. The photo at lower left shows the temple as it is today. Although faded and eroded, the temple still inspires awe.



➤ DATA FILE


MORE ON WORK

- **Surgeons** Ancient Egypt had skilled surgeons. Written evidence shows that Egyptian surgeons knew how to stitch cuts and set broken bones. Some Egyptian mummies even show evidence of being operated on. We know the names of about 150 physicians—2 of them were women.
- **Papyrus Growers** A large industry was built around the harvesting of papyrus. Papyrus was used to make the material Egyptians wrote on. Scrolls of various sizes could be made. One mathematics papyrus was 15 feet long and 3 inches wide.

MORE ON PLAY

- **Pets** Egyptians kept various animals as pets. Nobles would even have their pets mummified and buried with them. A single pet cemetery was discovered that contained 1,000,000 bird mummies.
- **Royal Dogs** The Pharaoh hound was very popular in ancient Egypt. Artifacts from 4000 B.C. show images of the breed. Today, a Pharaoh hound puppy bred for competition can cost up to \$1,500.

Connect to Today

1. **Making Inferences** From what you have read here, what inferences can you make about Egyptian society?
 See Skillbuilder Handbook, page R10.
2. **Comparing and Contrasting** How are the work and leisure activities of ancient Egypt different from those in the United States today? How are they similar?