Indian Achievements

If YOU were there...
You are a traveler in western India in the 300s. You are visiting a cave temple that is carved into a mountain cliff. Inside the cave it is cool and quiet. Huge columns rise all around you. You don’t feel you’re alone, for the walls and ceilings are covered with paintings. They are filled with lively scenes and figures. In the center is a large statue with calm, peaceful features.

How does this cave make you feel?

Building Background
The Mauryan and Gupta empires united most of India politically. During these empires, Indian artists, writers, scholars, and scientists made great advances. Some of their works are still studied and admired today.

Religious Art
The Indians of the Mauryan and Gupta periods created great works of art, many of them religious. Many of their paintings and sculptures illustrated either Hindu and Buddhist teachings. Magnificent temples—both Hindu and Buddhist—were built all around India. They remain some of the most beautiful buildings in the world today.

Temples
Early Hindu temples were small stone structures. They had flat roofs and contained only one or two rooms. In the Gupta period, though, temple architecture became more complex. Gupta temples were topped by huge towers and were covered with carvings of the god worshipped inside.

Buddhist temples of the Gupta period are also impressive. Some Buddhists carved entire temples out of mountainsides. The most famous such temple is at Ajanta. Its builders filled the caves with beautiful wall paintings and sculpture.

The Big Idea
The people of ancient India made great contributions to the arts and sciences.

Main Ideas
1. Indian artists created great works of religious art.
2. Sanskrit literature flourished during the Gupta period.
3. The Indians made scientific advances in metalworking, medicine, and other sciences.

Key Terms
- metallurgy, p. 150
- alloys, p. 150
- Hindu-Arabic numerals, p. 150
- inoculation, p. 150
- astronomy, p. 151

Use the graphic organizer online to take notes on the achievements of ancient India.
Another type of Buddhist temple was the stupa. Stupas had domed roofs and were built to house sacred items from the life of the Buddha. Many of them were covered with detailed carvings.

Paintings and Sculpture

The Gupta period also saw the creation of great works of art, both paintings and statues. Painting was a greatly respected profession, and India was home to many skilled artists. However, we don’t know the names of many artists from this period. Instead, we know the names of many rich and powerful members of Gupta society who paid artists to create works of beauty and significance.

Most Indian paintings from the Gupta period are clear and colorful. Some of them show graceful Indians wearing fine jewelry and stylish clothes. Such paintings offer us a glimpse of the Indians’ daily and ceremonial lives.

Artists from both of India’s major religions, Hinduism and Buddhism, drew on their beliefs to create their works. As a result, many of the finest paintings of ancient India are found in temples. Hindu painters drew hundreds of gods on temple walls and entrances. Buddhists covered the walls and ceilings of temples with scenes from the life of the Buddha.

Indian sculptors also created great works. Many of their statues were made for Buddhist cave temples. In addition to the temples’ intricately carved columns, sculptors carved statues of kings and the Buddha. Some of these statues tower over the cave entrances. Hindu temples also featured impressive statues of their gods. In fact, the walls of some temples, such as the one pictured above, were completely covered with carvings and images.

**READING CHECK**

**Summarizing** How did religion influence ancient Indian art?
Sanskrit Literature

Sanskrit was the main language of the ancient Aryans. During the Mauryan and Gupta periods, many works of Sanskrit literature were created. These works were later translated into many other languages.

Religious Epics

The greatest of these Sanskrit writings are two religious epics, the *Mahabharata* (muh-HAH-BAH-ruh-tuh) and the *Ramayana* (rah-MAH-yuh-nuh). Still popular in India, the *Mahabharata* is one of the world’s longest literary works. It is a story about the struggle between two families for control of a kingdom. Included within the story are many long passages about Hindu beliefs. The most famous is called the *Bhagavad Gita* (BUG-uh-vuhd GEE-tah).

The *Ramayana*, according to Hindu tradition written prior to the *Mahabharata*, tells about a prince named Rama. In truth, the prince was the god Vishnu in human form. He had become human so he could rid the world of demons. He also had to rescue his wife, a princess named Sita. For centuries, the characters of the *Ramayana* have been seen as models for how Indians should behave. For example, Rama is seen as the ideal ruler, and his relationship with Sita as the ideal marriage.

Other Works

Writers in the Gupta period also created plays, poetry, and other types of literature. One famous writer of this time was Kalidasa (kahl-ee-DAHS-uh). His work was so brilliant that Candra Gupta II hired him to write plays for the royal court.

Sometime before 500, Indian writers also produced a book of stories called the *Panchatantra* (PUHN-chuh-TAHN-truh). The stories in this collection were intended to teach lessons. They praise people for cleverness and quick thinking. Each story ends with a message about winning friends, losing property, waging war, or some other idea. For example, the message below warns listeners to think about what they are doing before they act.

"The good and bad of given schemes
Wise thought must first reveal:
The stupid heron saw his chicks
Provide a mongoose meal."

—from the *Panchatantra*, translated by Arthur William Ryder

Eventually, translations of this collection spread throughout the world. It became popular even as far away as Europe.

**READING CHECK**

Categorizing What types of literature did writers of ancient India create?
Indian Science

**Scientific Advances**
Indian achievements were not limited to art, architecture, and literature. Indian scholars also made important advances in metalworking, math, and the sciences.

**Metalworking**
The ancient Indians were pioneers of **metallurgy** (MET-uhl-uhr-jee), the science of working with metals. Their knowledge allowed them to create high-quality tools and weapons. The Indians also knew processes for mixing metals to create **alloys**, mixtures of two or more metals. Alloys are sometimes stronger or easier to work with than pure metals.

Metalworkers made their strongest products out of iron. Indian iron was very hard and pure. These features made the iron a valuable trade item.

During the Gupta dynasty, metalworkers built the famous Iron Pillar near Delhi. Unlike most iron, which rusts easily, this pillar is very resistant to rust. The tall column still attracts crowds of visitors. Scholars study this column even today to learn the Indians’ secrets.

**Mathematics and Other Sciences**
Gupta scholars also made advances in math and science. In fact, they were among the most advanced mathematicians of their day. They developed many elements of our modern math system. The very numbers we use today are called **Hindu-Arabic numerals** because they were created by Indian scholars and brought to Europe by Arabs. The Indians were also the first people to create the zero. Although it may seem like a small thing, modern math wouldn’t be possible without the zero.

The ancient Indians were also very skilled in the medical sciences. As early as the AD 100s, doctors were writing their knowledge down in textbooks. Among the skills these books describe is making medicines from plants and minerals.

Besides curing people with medicines, Indian doctors knew how to protect people against disease. The Indians practiced **inoculation** (i-nah-kyuh-LAY-shuhn), or injecting a person with a small dose of a virus to help him or her build up defenses to a disease. By fighting off this small dose, the body learns to protect itself.
For people who were injured, Indian doctors could perform surgery. Surgeons repaired broken bones, treated wounds, removed infected tonsils, reconstructed broken noses, and even reattached torn earlobes! If they could find no other cure for an illness, doctors would cast magic spells to help people recover.

Indian interest in astronomy, the study of stars and planets, dates back to early times as well. Indian astronomers knew of seven of the planets in our solar system. They knew that the sun was a star and that the planets revolved around it. They also knew that the earth was a sphere and that it rotated on its axis. In addition, they could predict eclipses of the sun and the moon.

**READING CHECK** Finding Main Ideas What were two Indian achievements in mathematics?

**SUMMARY AND PREVIEW** From a group of cities on the Indus River, India grew into a major empire whose people made great achievements. In the next chapter, you’ll read about another civilization that experienced similar growth—China.