Greek Achievements

If YOU were there...

Everyone in Athens has been talking about a philosopher and teacher named Socrates, so you decide to go and see him for yourself. You find him sitting under a tree, surrounded by his students. “Teach me about life,” you say. But instead of answering, he asks you, “What is life?” You struggle to reply. He asks another question, and another. If he’s such a great teacher, you wonder, shouldn’t he have all the answers? Instead, all he seems to have are questions.

What do you think of Socrates?

BUILDING BACKGROUND  Socrates was only one of the brilliant philosophers who lived in Athens in the 400s BC. The city was also home to some of the world’s greatest artists and writers. In fact, all over Greece men and women made great advances in the arts and sciences. Their work inspired people for centuries.

The Arts

Among the most notable achievements of the ancient Greeks were those they made in the arts. These arts included sculpture, painting, architecture, and writings.

Statues and Paintings

The ancient Greeks were master artists. Their paintings and statues have been admired for hundreds of years. Examples of these works are still displayed in museums around the world.

Greek sculpture is admired for its realism, natural look, and details.

What You Will Learn...

Main Ideas

1. The Greeks made great contributions to the arts.
2. The teachings of Socrates, Plato, and Aristotle are the basis of modern philosophy.
3. In science, the Greeks made key discoveries in math, medicine, and engineering.

The Big Idea

Ancient Greeks made lasting contributions in the arts, philosophy, and science.

Key Terms and People

Socrates, p. 281
Plato, p. 281
Aristotle, p. 281
reason, p. 281
Euclid, p. 282
Hippocrates, p. 282

TAKING NOTES

Use the graphic organizer online to take notes on Greek achievements in the arts, philosophy, and science.
Greek statues are so admired because the sculptors who made them tried to make them look perfect. They wanted their statues to show how beautiful people could be. To improve their art, these sculptors carefully studied the human body, especially how it looked when it was moving. Then, using what they had learned, they carved stone and marble statues. As a result, many Greek statues look as though they could come to life at any moment.

Greek painting is also admired for its realism and detail. For example, Greek artists painted detailed scenes on vases, pots, and other vessels. These vessels often show scenes from myths or athletic competitions. Many of the scenes were created using only two colors, black and red. Sometimes artists used black glaze to paint scenes on red vases. Other artists covered whole vases with glaze and then scraped parts away to let the red background show through.

**Greek Architecture**

If you went to Greece today, you would see the ruins of many ancient buildings. Old columns still hold up parts of broken roofs, and ancient carvings decorate fallen walls. These remains give us an idea of the beauty of ancient Greek buildings.

---

**History Close-up**

**The Parthenon**

The Parthenon was a beautiful temple to the goddess Athena, whom the people of Athens considered their protector. The temple, which stood on the Athenian acropolis, was built by Pericles and is still one of the most famous buildings in the world.

The carvings on the west side of the Parthenon show a contest between Athena and the god Poseidon to decide who would be honored in the city.

Once a year, the people of Athens held a great festival in honor of Athena. Part of the festival included a great procession that wound through the city.
The Greeks took great care in designing their buildings, especially their temples. Rows of tall columns surrounded the temples, making the temples look stately and inspiring. Greek designers were very careful when they measured these columns. They knew that columns standing in a long row often looked as though they curved in the middle. To prevent this optical illusion, they made their columns bulge slightly in the middle. As a result, Greek columns look perfectly straight.

Ancient Greek designers took such care because they wanted their buildings to reflect the greatness of their cities. The most impressive of all ancient Greek buildings was the Parthenon (PAHR-thuh-nahn) in Athens, pictured below. This temple to Athena was built in the 400s BC on the Athenian acropolis. It was designed to be magnificent not only outside, but inside as well. As you can see, the interior was decorated with carvings and columns.

**New Forms of Writing**

Sculpture, painting, and architecture were not the only Greek art forms. The Greeks also excelled at writing. In fact, Greek writers created many new writing forms, including drama and history.

**Analyzing Visuals**

Inside the Parthenon was a magnificent statue of Athena by the sculptor Phidias, whom many people considered the greatest sculptor in all of Greece.

The Parthenon’s 46 columns are a type called Doric columns. These simple columns have no decoration at the top.

Why do you think people are bringing animals and goods with them to the temple?
The Greeks created drama, or plays, as part of their religious ceremonies. Actors and singers performed scenes in honor of the gods and heroes. These plays became a popular form of entertainment, especially in Athens.

In the 400s BC Athenian writers created many of the greatest plays of the ancient world. Some writers produced tragedies, which described the hardships faced by Greek heroes. Among the best tragedy writers were Aeschylus (E-kuh-luhs) and Sophocles (SAHF-uh-kleez). For example, Sophocles wrote about a Greek hero who mistakenly killed his own father. Other Greek dramatists focused on comedies, which made fun of people and ideas. One famous comedy writer was Aristophanes (ar-uh-STAHF-uh-nee). He used his comedy to make serious points about war, courts of law, and famous people.

The Greeks were also among the first people to write about history. They were interested in the lessons history could teach. One of the greatest of the Greek historians was Thucydides (thoo-SID-uh-deez). His history of the Peloponnesian War was based in part on his experiences as an Athenian soldier. Even though he was from Athens, Thucydides tried to be neutral in his writing. He studied the war and tried to figure out what had caused it. He may have hoped the Greeks could learn from their mistakes and avoid similar wars in the future. Many later historians modeled their works after his.

**Reading Check**

**Summarizing** What were some forms of art found in ancient Greece?

**Philosophy**

The ancient Greeks worshipped gods and goddesses whose actions explained many of the mysteries of the world. But by around 500 BC a few people had begun to think about other explanations. We call these people philosophers. They believed in the power of the human mind to think, explain, and understand life.

---

**Primary Source**

**BOOK**

**The Death of Socrates**

In 399 BC Socrates was arrested and charged with corrupting the young people of Athens and ignoring religious traditions. He was sentenced to die by drinking poison. Socrates spent his last hours surrounded by his students. One of them, Plato, later described the event in detail.

**Analysis Skill**

**Analyzing Primary Sources**

How does Socrates tell his students to act when they see him drink the poison?

> "Then raising the cup to his lips, quite readily and cheerfully he drank off the poison. And hitherto most of us had been able to control our sorrow; but now when we saw him drinking . . . my own tears were flowing fast; so that I covered my face and wept . . . Socrates alone retained his calmness: What is this strange outcry? he said . . . I have been told that a man should die in peace. Be quiet then, and have patience."

—Plato, from Phaedo
Socrates
Among the greatest of these thinkers was a man named Socrates (SAHK-ruh-teez). He believed that people must never stop looking for knowledge.

Socrates was a teacher as well as a thinker. Today we call his type of teaching the Socratic method. Socrates taught by asking questions. His questions were about human qualities such as love and courage. He would ask, “What is courage?” When people answered, he challenged their answers with more questions.

Socrates wanted to make people think and question their own beliefs. But he made people angry, even frightened. They accused him of questioning the authority of the gods. For these reasons, he was arrested and condemned to death. His friends and students watched him calmly accept his death. He took the poison he was given, drank it, and died.

Plato
Plato (PLAYT-oh) was a student of Socrates. Like Socrates, he was a teacher as well as a philosopher. Plato created a school, the Academy, to which students, philosophers, and scientists could come to discuss ideas.

Although Plato spent much of his time running the Academy, he also wrote many works. The most famous of these works was called The Republic. It describes Plato’s idea of an ideal society. This society would be based on justice and fairness to everyone. To ensure this fairness, Plato argued, society should be run by philosophers. He thought that only they could understand what was best for everyone.

Aristotle
Perhaps the greatest Greek thinker was Aristotle (ar-uh-STAHL-tuhl), Plato’s student. He taught that people should live lives of moderation, or balance. For example, people should not be greedy, but neither should they give away everything they own. Instead, people should find a balance between these two extremes.

Aristotle believed that moderation was based on reason, or clear and ordered thinking. He thought that people should use reason to govern their lives. In other words, people should think about their actions and how they will affect others.

Aristotle also made great advances in the field of logic, the process of making inferences. He argued that you could use facts you knew to figure out new facts. For example, if you know that Socrates lives in Athens and that Athens is in Greece, you can conclude that Socrates lives in Greece. Aristotle’s ideas about logic helped inspire many later Greek scientists.

Euclid
Euclid is considered one of the world’s greatest mathematicians. He lived and taught in Alexandria, Egypt, a great center of learning. Euclid wrote about the relationship between mathematics and other fields, including astronomy and music. But it is for geometry that he is best known. In fact, his works were so influential that the branch of geometry we study in school—the study of flat shapes and lines—is called Euclidean geometry.

Drawing Conclusions Why do you think a branch of geometry is named after Euclid?

BIOGRAPHY
Euclid
c. 300 BC

Euclid is considered one of the world’s greatest mathematicians. He lived and taught in Alexandria, Egypt, a great center of learning. Euclid wrote about the relationship between mathematics and other fields, including astronomy and music. But it is for geometry that he is best known. In fact, his works were so influential that the branch of geometry we study in school—the study of flat shapes and lines—is called Euclidean geometry.

Drawing Conclusions Why do you think a branch of geometry is named after Euclid?
Science
Aristotle’s works inspired many Greek scientists. They began to look closely at the world to see how it worked.

Mathematics
Some Greeks spent their lives studying mathematics. One of these people was Euclid (YOO-kluhd). He was interested in geometry, the study of lines, angles, and shapes. In fact, many of the geometry rules we learn in school today come straight from Euclid’s writings.

Other Greek mathematicians included a geographer who used mathematics to accurately calculate the size of the earth. Years later, in the AD 300s and 400s, a woman named Hypatia (hy-PAY-shuh) taught about mathematics and astronomy.

Medicine and Engineering
Not all Greek scientists studied numbers. Some studied other areas of science, such as medicine and engineering.

Greek doctors studied the human body to understand how it worked. In trying to cure diseases and keep people healthy, Greek doctors made many discoveries.

The greatest Greek doctor was Hippocrates (hip-AHK-ruh-teez). He wanted to figure out what caused diseases so he could better treat them. Hippocrates is better known today, though, for his ideas about how doctors should behave.

Greek engineers also made great discoveries. Some devices they invented are still used today. For example, farmers in many countries still use water screws to bring water to their fields. This device, which brings water from a lower level to a higher one, was invented by a Greek scientist named Archimedes (ahr-kuh-MEED-eez) in the 200s BC. Greek inventors could be playful as well as serious. For example, one inventor created mechanical toys like birds, puppets, and coin-operated machines.

**Reading Check** Summarizing What advances did Greek scientists make in medicine?

**Summary and Preview** Through their art, philosophy, and science, the Greeks have greatly influenced Western civilization. In the next chapter, you will learn about another group that has helped shape the Western world—the Romans.

---

**Section 4 Assessment**

**Reviewing Ideas, Terms, and People**

1. **Identify** What two types of drama did the Greeks invent?
   - Explain Why did Greek columns bulge in the middle?
   - Elaborate How did studying the human body help Greek artists make their statues look real?

2. **Describe** How did Socrates teach? What is this method of teaching called?

3. **Identify** In what fields did Hippocrates and Euclid make their greatest achievements?
   - **Make Inferences** Why do some people call Greece the birthplace of the Western world?

4. **Summarizing** Add a box to the bottom of your note-taking chart. Use it to summarize Greek contributions in the arts, philosophy, and science.

5. **Taking Notes about Artists and Thinkers** Add the artists and thinkers from this section to your chart. Because these people were not military leaders, all of your notes will go in the third column of your chart.
Greek Philosophers—Socrates, Plato, and Aristotle

What would the world be like if no one believed in the importance of knowledge and truth?

When did they live?  the 400s and 300s BC

Where did they live?  Athens

What did they do?  They thought. Socrates, Plato, and Aristotle thought about the world and searched for knowledge, wisdom, and truth. Between them they created the Socratic method of learning, the first political science book, and a method of scientific reasoning.

Why are they important?  In most of the ancient world, strong fighters won all the glory. But in Athens, great thinkers and wise men were honored. People listened to them and followed their advice. Even today, people admire the ideas of Socrates, Plato, and Aristotle. Their teachings are at the root of modern philosophy and science.

Making Inferences  Do you think these philosophers would have been as influential if they had lived in a different city? Why or why not?
Interpreting Charts and Tables

**Understand the Skill**

Charts present information visually to make it easier to understand. Different kinds of charts have different purposes. *Organizational charts* can show relationships among the parts of something. *Flowcharts* show steps in a process or cause-and-effect relationships. *Classification charts* group information so it can be easily compared. *Tables* are a type of classification chart that organize information into rows and columns for easy comparison. The ability to interpret charts helps you to analyze information and understand relationships.

**Learn the Skill**

Use these basic steps to interpret a chart:

1. Identify the type of chart and read its title in order to understand its purpose and subject.
2. Note the parts of the chart. Read the headings of rows and columns to determine the categories and types of information. Note any other labels that accompany the information presented in the chart. Look for any lines that connect its parts. What do they tell you?
3. Study the chart’s details. Look for relationships in the information it presents. If it is a classification chart, analyze and compare all content in the rows and columns. In flowcharts and organizational charts, read all labels and other information. Follow and analyze directional arrows or lines.

**Practice and Apply the Skill**

Apply the strategies given to interpret the chart above and answer the following questions.

1. What type of chart is this and what is its purpose?
2. In what ways were the ephors and the Assembly connected?
3. How did the roles of the Assembly and the Council of Elders differ?
4. What position in Spartan government had no direct relationship with the Assembly?
Chapter Review

Visual Summary

Use the visual summary below to help you review the main ideas of the chapter.

Sparta and Athens fought together to defeat Persia in the Persian Wars.

Spartan culture centered on the military, while Athenian culture emphasized government and the arts.

Alexander the Great built a huge empire and spread Greek culture.

The ancient Greeks made lasting contributions to architecture, philosophy, science, and many other fields.

Reviewing Vocabulary, Terms, and People

Choose one word from each word pair to correctly complete each sentence below.

1. A ruler named ________ created the Persian Empire. (Cyrus the Great/Xerxes I)
2. A ________ was a group of soldiers that stood in a square to fight. (cavalry/phalanx)
3. ________ built the largest empire the world had ever seen. (Alexander the Great/Aristotle)
4. The ________ War(s) pitted two city-states against each other. (Persian/Peloponnesian)
5. The philosopher ________ taught people by asking them questions. (Darius/Socrates)
6. The greatest medical scholar of ancient Greece was ________. (Philip II/Hippocrates)
7. Aristotle taught the importance of ________ in his writings. (reason/alliance)
8. ________ was a great mathematician. (Plato/Euclid)

Comprehension and Critical Thinking

SECTION 1 (Pages 260–265)

9. a. Identify Who were Cyrus the Great, Darius I, and Xerxes I?
   b. Analyze How did the Greeks use strategy to defeat a larger fighting force?
   c. Elaborate What were some factors that led to the success of the Persian Empire?

SECTION 2 (Pages 266–271)

10. a. Describe What was life like for Spartan women? for Athenian women?
    b. Compare and Contrast How was the education of Spartan boys different from the education of Athenian boys? What did the education of both groups have in common?
    c. Evaluate Do you agree or disagree with this statement: “The Athenians brought the Peloponnesian War on themselves.” Defend your argument.

History’s Impact

Review the video to answer the focus question:

How have ancient Greek theories influenced American civilization?

▲

6-8_SNLAESE485829_C09RT.indd   285
7/10/10   11:06:22 AM
SECTION 3  (Pages 272–276)

11. a. Describe  How did Philip II improve the phalanx?
   b. Analyze  How did the cultures that Alexander conquered change after his death?
   c. Predict  How might history have been different if Alexander had not died so young?

SECTION 4  (Pages 277–282)

12. a. Identify  What is the Parthenon? For which goddess was it built?
   b. Compare  What did Socrates, Plato, and Aristotle have in common?
   c. Evaluate  Why do you think Greek accomplishments in the arts and sciences are still admired today?

Reviewing Themes

13. Politics  Why did the Persians and the Greeks react differently to the end of the Persian Wars?
14. Politics  How were the government and the army related in Sparta?
15. Society and Culture  How were the roles of women different in Athens and Sparta?

Using the Internet

16. Activity: Writing a Dialogue  While rulers such as Alexander and Cyrus fought to gain land, thinkers like Socrates may have questioned their methods. Through your online book, write a dialogue between Socrates and a student on whether it was right to invade another country. Socrates should ask at least 10 questions to his student.

Social Studies Skills

17. Interpreting Charts and Tables  Create a chart in your notebook that identifies key Greek achievements in architecture, art, writing, philosophy, and science. Complete the chart with details from this chapter.

Reading Skills

18. Comparing and Contrasting Historical Facts  Complete the chart below to compare and contrast two powerful leaders you studied in this chapter, Cyrus the Great and Alexander the Great.

<table>
<thead>
<tr>
<th>List two characteristics that Cyrus and Alexander shared.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ______________________________________</td>
</tr>
<tr>
<td>b. ______________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How did Cyrus’s and Alexander’s backgrounds differ?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyrus</td>
</tr>
<tr>
<td>c. _______________</td>
</tr>
<tr>
<td>d. _______________</td>
</tr>
<tr>
<td>Alexander</td>
</tr>
<tr>
<td>e. _______________</td>
</tr>
<tr>
<td>f. _______________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What happened to their empires after they died?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyrus</td>
</tr>
<tr>
<td>e. _______________</td>
</tr>
<tr>
<td>f. _______________</td>
</tr>
</tbody>
</table>

19. Writing Your Poem  Look back over your notes from this chapter. Ask yourself which of the accomplishments you noted are the most significant. Do you admire people for their ideas? their might? their leadership? their brilliance? Choose one person whose accomplishments you admire. Look back through the chapter for more details about the person’s accomplishments. Then write a poem in praise of your chosen figure. Your poem should be five lines long. The first line should identify the subject of the poem. The next three lines should note his or her accomplishments, and the last line should sum up why he or she is respected.
DIRECTIONS: Read each question and write the letter of the best response.

1. The freedom which we enjoy in our government extends also to our ordinary life . . . Further, we provide plenty of means for the mind to refresh itself from business. We celebrate games and sacrifices all the year round . . . Where our rivals from their very cradles by a painful discipline seek after manliness . . . we live exactly as we please and yet are just as ready to encounter every legitimate danger.

The information in this passage suggests that the person who wrote it probably lived in
A. Athens.
B. Persia.
C. Sparta.
D. Troy.

2. The Athenians’ main rivals were from
A. Sparta.
B. Rome.
C. Macedonia.
D. Persia.

3. Which people were the chief enemies of the Greeks in the 400s BC?
A. the Romans
B. the Persians
C. the Egyptians
D. the Macedonians

4. All of the following were Greek philosophers except
A. Aristotle.
B. Plato.
C. Socrates.
D. Zoroaster.

5. Hellenistic culture developed as a result of the activities of which person?
A. Darius I
B. Philip II
C. Cyrus the Great
D. Alexander the Great

Connecting with Past Learnings

6. Cyrus the Great and Alexander the Great both built huge empires. What other leader that you have studied in this course also created an empire?
A. Moses
B. Shi Huangdi
C. Confucius
D. Hatshepsut

7. In this chapter you have read about many great philosophers and thinkers. Which of the following people you have studied was not a philosopher or thinker?
A. Socrates
B. Ramses the Great
C. Confucius
D. Siddhartha Gautama