

1. Ancient Greek Contributions to Literature and History

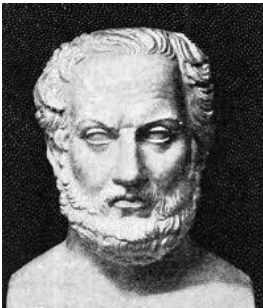
Did you know that the word *alphabet* comes from the first two of the Greek alphabet, *alpha* and *beta*? Our alphabet grew out of the that ancient Greeks used. In addition, many English words have roots. For example, the word *telephone* is made up of the Greek *tel*, meaning “far off,” and *phone*, meaning “voice.”

A α	alpha	N ν	nu
B β	beta	Ξ ξ	ksi
Γ γ	gamma	Ο ο	omicron
Δ δ	delta	Π π	pi
Ε ε	epsilon	Ρ ρ	rho
Ζ ζ	zeta	Σ σς	sigma
Η η	eta	Τ τ	tau
Θ θ	theta	Υ υ	upsilon
Ι ι	iota	Φ φ	phi
Κ κ	kappa	Χ χ	chi
Λ λ	lambda	Ψ ψ	psi
Μ μ	mu	Ω ω	omega

Greek alphabet chart © by de Traci Pngula; licensed to About.com

letters
one
Greek
words

Even the way we write sentences comes from the language of ancient Greece. The rules of English grammar, punctuation, and paragraphing are all based on Greek writing. And don't forget literature. The Greeks created drama, including both tragedy and comedy. They also developed historical writing. Modern historians follow in the footsteps of great Greek writers such as Herodotus (huh-ROD-uh-tuhs), known as the “father of history,” and Thucydides (thoo-SID-ih-deez).



Thucydides was one of the greatest historians of ancient Greece. He wrote *History of the Peloponnesian War*, an account of the conflict between Athens and Sparta in the 400s B.C.E. Thucydides himself took part in the war, serving in the Athenian army. Although he was an eyewitness to history, he was careful to present facts rather than his own viewpoint or opinion. He is remembered today as one of the founders of historical writing.

Greek poems and stories are the oldest in the western world. For hundreds of years, Europeans and Americans have used these early works as models for their own poems and stories. Shakespeare for example borrowed many Greek plots and settings. The earliest stories were epics. These long poems told stories about heroic deeds. The first great epics of early Greece were the *Iliad* and the *Odyssey* by the poet **Homer**.

2. Ancient Greek Contributions to Government

Democratic government was a Greek idea. Democracy began in Athens. The word "democracy" combines *dêmos* (which means "people") and *krátos* (which means "power").

Our democratic government in the United States has roots in ancient Greece. However, there are a number of differences between American democracy and ancient Greek democracy. For example, in Athens, all citizens debated and voted on every issue. But, in the United States, citizens elect representatives to speak for them and make laws. Another difference is that only native-born men could be citizens in Athens. But, in the United States, all men and women born in the country are U.S. citizens, and people from other countries can become citizens, too.

The Athenians had a strong faith in their democratic system. We call their system direct democracy. In a direct democracy, people gather at huge meetings to decide on government matters. Every citizen voted directly on each law. What made direct democracy work in ancient Athens was that there were a relatively small number of citizens. In the mid-400s BCE about 43,000 male citizens over 18 years old made up the assembly. The assembly was held every 10 days. The assembly passed all laws, elected officials, and made decisions on wars and foreign affairs. Ten officials known as generals carried out the assembly's laws and policies. The *polis* of Athens, the largest of the Greek poleis, was the birthplace of democracy.

Pericles was a prominent and influential Greek statesman, speaker and general of Athens during the Golden Age. Pericles had such a deep influence on Athenian society that he is called "the first citizen of Athens. The period during which he led Athens, roughly from 461 to 429 BCE, is sometimes known as the "Age of Pericles"

The practice of having citizens serve on juries also began in Greece. In order to have punishments carried out, the Ancient Greeks needed some sort of system to "try," "convict," and "sentence" guilty persons. To do this, they created a court system. Most trials were completed in the same day.

There were no "professional" court officials, no lawyers, and no official judges. A normal case consisted of two "litigants," one who argued that an unlawful act was committed, and the other argued his defense. The audience, or "jurors," would vote for one side or the other. The result was either a guilty or not guilty, after which another vote by the jury would decide the punishment.

Greeks saw politics as a multifaceted, social process for making the polis work. We may define "work" in the Greek context as promoting economic expansion, ensuring security, and promoting civic virtue and participation.

At each point in the process, some body of citizens was charged with the duty of making decisions. And those decisions were made through deliberation and voting--both speech acts. For the Greeks, to speak was to govern. The basic principles of democracy- including civic participation and polis- were developed by the ancient Greeks. Athenians were proud that their government allowed citizens to control their own destiny. This idea remains the basis of democracy today.

3. Ancient Greek Contributions to Medicine

For centuries, the Greeks believed that gods and goddesses controlled natural events, including health and sickness. In fact, the earliest Greeks thought that illnesses and accidents were punishments sent by the gods. Ancient Greeks didn't know about the natural causes of disease and healing.

A Greek man named **Hippocrates** (hih-POK-ruh-teez) changed the way people thought about health and medicine. Hippocrates is often called the "father of medicine." He brought a scientific way of thinking to his work as a doctor. Hippocrates believed that diseases had natural causes. He taught his students to carefully observe their patients and write down what they saw.

Even more important, Hippocrates established principles of medicine that are still followed. Today, people who become doctors take the Hippocratic Oath, based on these ideas of ethical behavior. Doctors promise to be honest, to preserve life, and to keep information about their patients private.



The Greeks loved to participate in and watch competitions in sports. Their interest in athletics gave them some knowledge about how the human body moves. But their understanding of the body was limited, partly because it was forbidden to look inside the body to see how it worked. The early Greeks believed that cutting open a human body offended the gods. As these beliefs changed over time, the Greeks made new discoveries.

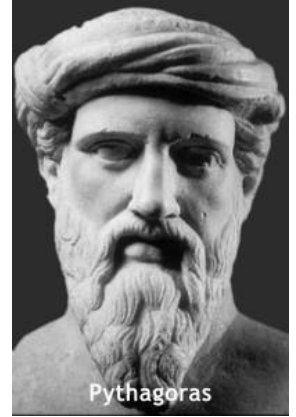
Several centuries after Hippocrates, Greek medical students were able to name and describe organs inside the body. They discovered that the heart was a pump that sent blood flowing throughout the body. They also learned that the brain was the center of the nervous system.

4. Ancient Greek Contributions to Mathematics

The Greeks loved reasoning, or looking for logical answers to nature's mysteries. Greek scientists often found those answers in the field of mathematics.

One such scientist, **Pythagoras** (pih-THAG-er-uhs), believed that numbers were the key to understanding nature. He started a school where students developed mathematical theories.

Like many Greeks, Pythagoras was especially fascinated by geometry. *Geometry* comes from a Greek word that means "to measure land." Geometry began as a system for measuring areas of land. The Egyptians could also measure shapes and spaces, but the Greeks created new and improved methods. Using geometry, they could figure out problems such as how much seed to buy for planting a field or how to lay out a city.



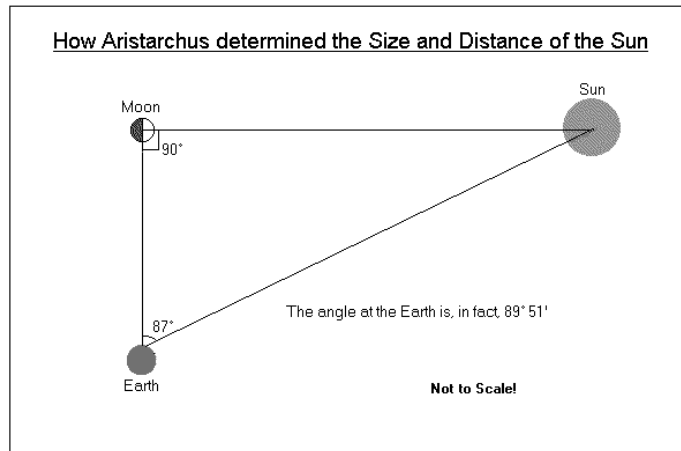
Another famous Greek mathematician was **Euclid** (YOOKlid). His geometry textbook has been used as the basis for the teaching of geometry for more than 2,000 years. His best known book *Elements* describes plane geometry which is the branch of mathematics that shows how points, lines, angles and surfaces relate to one another. **Archimedes** (AHR-kuh-MEE-deez) worked on solid geometry the study of ball like shapes called spheres and tube like shapes called cylinders. He also figured out the value of *pi*. This number is used to measure the area of circles.

Greek culture produced the first woman to earn fame as a mathematician, Hypatia (hie-PAY-shuh). Born in Egypt in about 370 C.E., she taught Greek philosophy and mathematics in the city of Alexandria.

5. Ancient Greek Contributions to Astronomy

Astronomy comes from the Greek word for “star.” Astronomy is the scientific study of outer space. Ancient Greeks were pioneers in this field. The earliest efforts to understand astronomical events were to make predictions and make the gods happy.

People in all civilizations observed the sun, moon, and stars. But a Greek scientist named **Aristarchus** (ayr-uh-STAHHR-kuhs) claimed that sun was the center of the universe and was the first person to suggest that Earth moves around the sun. This idea upset many Greeks who believed that Earth was the center of the universe.



Another astronomer, **Eratosthenes** (EHR-uh-TAHS-thuh-NEEZ) was in charge of the library at Alexandria. Eratosthenes used his knowledge of geometry and astronomy to measure the Earth's circumference—the distance around the Earth. He put two sticks in the ground far apart from each other. When the sun was directly over one stick, the shadow was shorter than the shadow at the other stick. By measuring the shadows, he was able to calculate the curve of the Earth's surface. Using similar methods, he measured the distance to the sun and the moon. His measurements were quite accurate.

Another Greek, **Hipparchus** (hih-PAHR-kuhs), is often called one of the greatest scientists of the ancient world. He studied and named more than 850 stars. He also figured out how to estimate the distances from Earth to both the sun and the moon. His theories allowed later scientists to accurately predict eclipses of the moon.



6. Ancient Greek Contributions to Geography

The early Greeks were the first to practice a form of geography that was more than just map making (cartography). Greek philosophers and scientist were also interested in learning about the spatial nature of human and physical features found on the Earth. The word geography comes from Greek words that mean "writing about the earth." The Greek historian Herodotus created the first map of the known world, in about 450 B.C.E. To gather the information for his map, **Herodotus** asked geographic questions. He found some answers to his questions by traveling and talking with other travelers. He organized the information by displaying it on a map.

The ancient Greeks were also interested in the size and geometry of the Earth. **Aristotle** (384 - 322 BCE) proved that the Earth had a spherical shape. Evidence for this idea came from his observations of lunar eclipses. Lunar eclipses occur when the Earth casts its circular shadow on to the moon's surface.

A Greek geographer even calculated the circumference of the equator to be 40,233 kilometers using simple geometric relationships. This primitive calculation was unusually accurate. Measurements of the Earth using modern satellite technology have calculated the circumference to be 40,072 kilometers.

Another great geographer of ancient times was **Ptolemy** (TAH-luh-mee). He wrote a book called *Geographia* that listed about 8,000 places around the world. His book contained maps that showed how to represent the curve of Earth on a flat surface. Some of his other important contributions include the creation of three different methods for projecting the Earth's surface on a map and development of the concepts of geographical latitude and longitude. With this system, he recorded the specific locations for the thousands of places he listed in his book. Centuries later, Arab scholars would further develop the study of geography, especially in the field of mapmaking.

Most of the Greek accomplishments in geography were passed on to the Romans. The Roman military used this information to guide the expansion of their Empire. The Romans also made several important additions to geographical knowledge.

7. Ancient Greek Contributions to Biology

Ancient Greeks developed the science of biology. About 600 B.C.E., Greek thinkers believed each event has a cause and an effect. They used this idea to study the natural world.

Curiosity led Greeks to study plants and animals. Scientists learned about the anatomy, or body structure, of animals and humans. This knowledge helped doctors in their medical studies.

The Greeks identified plants and also named their parts. The Greeks learned that plants reproduce by spreading seeds. Greek doctors used plants, such as herbs, as medicines and for pain.

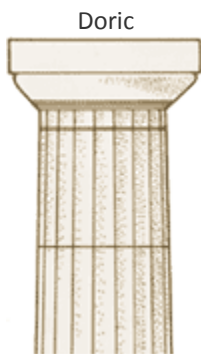
The Greek philosopher **Aristotle** was fascinated by living things. Aristotle most distinguished himself in the field of biology. He collected information about many types of animals and plants. An avid natural historian who tirelessly studied and catalogued many species of plants and animals, he then organized animals into groups, such as “those with backbones” and “those without backbones.” He divided plants into such groups as “herbs,” “shrubs,” and “trees.” The way we classify, or group, animals and plants today reflects the work of Aristotle.

8. Ancient Greeks Contributions to Architecture

Greek life was dominated by religion and so it is not surprising that the temples of ancient Greece were the biggest and most beautiful. They also had a political purpose as they were often built to celebrate civic power and pride, or offer thanksgiving to the patron god of a city for success in war.

The word architecture comes from a Greek word that means “master builder.” Greek architecture was one of the achievements of the Golden Age of Athens. One feature was the way that the Greeks used columns to make their temples look balanced and stately.

The Greeks developed three architectural systems, called orders, each with their own distinctive proportions and detailing. The Greek orders are: Doric, Ionic, and Corinthian.



The Doric style is rather sturdy and its top (the capital), is plain. This style was used in mainland Greece and the colonies in southern Italy and Sicily.



The Ionic style is thinner and more elegant. Its capital is decorated with a scroll-like design (a volute). This style was found in eastern Greece and the islands.



The Corinthian style is seldom used in the Greek world, but often seen on Roman temples. Its capital is very elaborate and decorated with acanthus leaves.

Another feature was the pediments, the triangular shapes where roof lines come together. And a third architectural feature was the decorated bands called friezes.

Today, Greek styles are still used in many buildings. They are common in public structures such as government buildings, schools, churches, libraries, and museums. The U.S. Capitol has elements of Greek architecture, such as columns and pediments. The building that houses the U.S. Supreme Court is another example of a public structure inspired by Greek architecture.

Another lasting Greek architectural contribution to world culture was the stadium. Stadiums were named after the distance (600 ancient feet or around 180 metres) of the foot-race they originally hosted - the stade or stadion

The Greek concern with simplicity, proportion, perspective, and harmony in their buildings would go on to greatly influence architects in the Roman world and provide the foundation for the classical architectural orders which would dominate the western world from the Renaissance to the present day.

9. Ancient Greek Contributions to Theater

The Greek theatre history began with festivals honoring their gods. In ancient Greece, theatre was a really big deal. Crowds of 15,000 people would gather to see a play. Theatre was so important to the ancient Greeks that prisoners would be released from jail temporarily, so they could also attend.

The word theater comes from a Greek word that means “a viewing place.” Greek theaters were built as semicircles. The rows of seats rose steeply from the stage so that everyone in the audience could see and hear. These ideas are used in theaters built today.

The Greeks even invented special effects. For example, they used hoists to lift actors off the stage, so that they appeared to be flying. They also created scenery that revolved, or turned. Revolving the scenery let them quickly change where the action in a play was taking place. In Greek drama, the chorus or the singers told the story, not the actors. Actors used gestures and masks to act out their parts. Actors changed roles by changing masks.

There were three types of plays. Tragedies: The first type they invented was the tragedy. In tragedies, one or more major characters always suffered a disastrous end.

Comedies: Comedies were invented next. In comedies, plays always had a happy end. The third type was the satire.

Satires: Satires were plays that made fun of mortal legends and of real people. In ancient Greece, you did not poke fun at the gods - not in a play, not in real life, not ever. But you could poke fun at your leaders. And that was uniquely Greek. Satires in ancient Greece were often political in nature, and could indeed affect people's opinions about current events.

Aristophanes was a Greek writer. Most of his plays were political satires highlighting the troubles in Athens during the golden age. Many of them were performed at festivals, watched and voted for by the people.

Perhaps the greatest Greek contributions to the theater are their stories and plays. Writers throughout the ages have been inspired by Greek myths and stories. Greek dramas are still performed all over the world.



10. Ancient Greek Contributions to Sports

Many modern sports trace their roots back to ancient Greece. The most famous example is the Olympic Games. The Greeks invented athletic contests and held them in honor of their gods

The ancient Olympics were rather different from the modern Games. There were fewer events, and only free men who spoke Greek could compete, instead of athletes from any country. Also, the games were always held at Olympia instead of moving around to different sites every time. All free male Greek citizens were entitled to participate in the ancient Olympic Games, regardless of their social status. Married women were not allowed to participate in, or to watch, the ancient Olympic Games. However, unmarried women could attend the competition, and the priestess of Demeter, goddess of fertility, was given a privileged position next to the Stadium altar.

The first Olympics were held in 776 B.C.E. to honor the Greek god Zeus. Today's Olympic Games reflect ancient Greek customs. During the opening ceremony, an athlete lights the Olympic flame. This custom comes from the time in ancient Greece when the first Olympic athletes lit a fire on the altar of Zeus.

Many modern Olympic events grew out of Greek contests. One example is the pentathlon. Pentathlon is a Greek word that means "five contests." The Greek pentathlon included the footrace, discus throw, long jump, javelin throw, and wrestling. The Greeks invented this event as a test of all-around athletic skill. Although the five contests are different today, the pentathlon is still an Olympic event.