Section 6: Culture in Classical Greece

Classical Greek Philosophy

The three most famous Classical Greek philosophers are Socrates, Plato, and Aristotle.

LEARNING OBJECTIVES

Understand the main philosophical beliefs of Socrates, Plato, and Aristotle

KEY TAKEAWAYS

Key Points

- Socrates is best known for having pursued a probing question-and-answer style of examination on a number of topics, usually attempting to arrive at a defensible and attractive definition of a virtue.
- In 399 BCE, Socrates was charged for his philosophical inquiries, convicted, and sentenced to death.
- Plato was a student of Socrates, and is the author of numerous dialogues and letters, as well as one of the primary sources available to modern scholars on Socrates’ life.
- In his defining work, The Republic, Plato reaches the conclusion that a utopian city is likely impossible because philosophers would refuse to rule and the people would refuse to compel them to do so.
- Aristotle was a student of Plato, the tutor of Alexander the Great, and founder of the Lyceum and Peripatetic School of philosophy in Athens. He wrote on a number of subjects, including logic, physics, metaphysics, ethics, rhetoric, politics, and botany.

Key Terms
• **allegory of the cave**: A paradoxical analogy wherein Socrates argues that the invisible world is the most intelligible, and the visible world is the least knowable and obscure. Plato has Socrates describe a gathering of people who have lived chained to the wall of a cave all of their lives, facing a blank wall upon which shadows are projected. The shadows are as close as the prisoners get to viewing reality.

• **aporia**: In philosophy, a paradox or state of puzzlement; in rhetoric, a useful expression of doubt.

• **Socrates**: A classical Greek (Athenian) philosopher credited as one of the founders of Western philosophy. Known for a question-answer style of examination.

• **Plato**: The student of Socrates and author of The Republic. A philosopher and mathematician in classical Greece.

• **Aristotle**: The student of Plato, tutor to Alexander the Great, and founder of the Lyceum. A Greek philosopher who wrote on a number of topics, including logic, ethics, and metaphysics.

Classical Greece saw a flourishing of philosophers, especially in Athens during its Golden Age. Of these philosophers, the most famous are Socrates, Plato, and Aristotle.

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**Socrates**

Socrates: Bust of Socrates, currently in the Louvre.

Socrates, born in Athens in the 5th century BCE, marks a watershed in ancient Greek philosophy. Athens was a center of learning, with sophists and philosophers traveling from across Greece to teach rhetoric, astronomy, cosmology, geometry, and the like. The great statesman Pericles was closely associated with these new teachings, however, and
his political opponents struck at him by taking advantage of a conservative reaction against the philosophers. It became a crime to investigate issues above the heavens or below the earth because they were considered impious. While other philosophers, such as Anaxagoras, were forced to flee Athens, Socrates was the only documented individual charged under this law, convicted, and sentenced to death in 399 BCE. In the version of his defense speech presented by Plato, he claims that the envy others experience on account of his being a philosopher is what will lead to his conviction.

Many conversations involving Socrates (as recounted by Plato and Xenophon) end without having reached a firm conclusion, a style known as *aporia*. Socrates is said to have pursued this probing question-and-answer style of examination on a number of topics, usually attempting to arrive at a defensible and attractive definition of a virtue. While Socrates’ recorded conversations rarely provide a definitive answer to the question under examination, several maxims or paradoxes for which he has become known recur. Socrates taught that no one desires what is bad, and so if anyone does something that truly is bad, it must be unwillingly or out of ignorance; consequently, all virtue is knowledge. He frequently remarks on his own ignorance (claiming that he does not know what courage is, for example). Plato presents Socrates as distinguishing himself from the common run of mankind by the fact that, while they know nothing noble and good, they do not know that they do not know, whereas Socrates knows and acknowledges that he knows nothing noble and good.

Socrates was morally, intellectually, and politically at odds with many of his fellow Athenians. When he was on trial, he used his method of *elenchos*, a dialectic method of inquiry that resembles the scientific method, to demonstrate to the jurors that their moral values are wrong-headed. He tells them they are concerned with their families, careers, and political responsibilities when they ought to be worried about the “welfare of their souls.” Socrates’ assertion that the gods had singled him out as a divine emissary seemed to provoke irritation, if not outright ridicule. Socrates also questioned the Sophistic doctrine that *arete* (virtue) can be taught. He liked to observe that successful fathers (such as the prominent military general Pericles) did not produce sons of their own quality. Socrates argued that moral excellence was more a matter of divine bequest than parental nurture.
Plato was an Athenian of the generation after Socrates. Ancient tradition ascribes 36 dialogues and 13 letters to him, although of these only 24 of the dialogues are now universally recognized as authentic. Most modern scholars believe that at least 28 dialogues, and two of the letters, were in fact written by Plato, although all of the 36 dialogues have some defenders. Plato’s dialogues feature Socrates, although not always as the leader of the conversation. Along with Xenophon, Plato is the primary source of information about Socrates’ life and beliefs, and it is not always easy to distinguish between the two.

Much of what is known about Plato’s doctrines is derived from what Aristotle reports about them, and many of Plato’s political doctrines are derived from Aristotle’s works, *The Republic*, the *Laws*, and the *Statesman*. *The Republic* contains the suggestion that there will not be justice in cities unless they are ruled by philosopher kings; those responsible for enforcing the laws are compelled to hold their women, children, and property in common; and the individual is taught to pursue the common good through noble lies. *The Republic* determines that such a city is likely impossible, however, and
generally assumes that philosophers would refuse to rule if the citizenry asked them to, and moreover, the citizenry
would refuse to compel philosophers to rule in the first place.

“Platonism” is a term coined by scholars to refer to the intellectual consequences of denying, as Plato’s Socrates often
does, the reality of the material world. In several dialogues, most notably The Republic, Socrates inverts the common
man’s intuition about what is knowable and what is real. While most people take the objects of their senses to be real if
anything is, Socrates is contemptuous of people who think that something has to be graspable in the hands to be real.
Socrates’s idea that reality is unavailable to those who use their senses is what puts him at odds with the common man
and with common sense. Socrates says that he who sees with his eyes is blind, and this idea is most famously captured
in his allegory of the cave, a paradoxical analogy wherein Socrates argues that the invisible world is the most intelligible
and that the visible world is the least knowable and most obscure.
In the allegory, Socrates describes a gathering of people who have lived chained to the wall of a cave facing a blank
wall. The people watch shadows projected on the wall from the fire burning behind them, and the people begin to name
and describe the shadows, which are the closest images they have to reality. Socrates then explains that a philosopher
is like a prisoner released from that cave who comes to understand the shadows on the wall are not reality.

Aristotle

Aristotle: Roman copy in marble of a Greek bronze bust of Aristotle by Lysippus, c. 330 BCE. The alabaster mantle is
modern.
Aristotle moved to Athens from his native Stageira in 367 BCE, and began to study philosophy, and perhaps even rhetoric, under Isocrates. He eventually enrolled at Plato’s Academy. He left Athens approximately twenty years later to study botany and zoology, became a tutor of Alexander the Great, and ultimately returned to Athens a decade later to establish his own school, the Lyceum. He is the founder of the Peripatetic School of philosophy, which aims to glean facts from experiences and explore the “why” in all things. In other words, he advocates learning by induction.

At least 29 of Aristotle’s treatises have survived, known as the corpus Aristotelicum, and address a variety of subjects including logic, physics, optics, metaphysics, ethics, rhetoric, politics, poetry, botany, and zoology. Aristotle is often portrayed as disagreeing with his teacher, Plato. He criticizes the regimes described in Plato’s Republic and Laws, and refers to the theory of forms as “empty words and poetic metaphors.” He preferred utilizing empirical observation and practical concerns in his works. Aristotle did not consider virtue to be simple knowledge as Plato did, but founded in one’s nature, habit, and reason. Virtue was gained by acting in accordance with nature and moderation.

Classical Greek Poetry and History

Homer, one of the greatest Greek poets, significantly influenced classical Greek historians as their field turned increasingly towards scientific evidence-gathering and analysis of cause and effect.

LEARNING OBJECTIVES

Explain how epic poetry influenced the development of classical Greek historical texts

KEY TAKEAWAYS

Key Points

- The formative influence of the Homeric epics in shaping Greek culture was widely recognized, and Homer was described as the teacher of Greece.
- The Iliad, sometimes referred to as the Song of Ilion or Song of Ilium, is set during the Trojan War and recounts the battles and events surrounding a quarrel between King Agamemnon and the warrior Achilles.
- Herodotus is referred to as “The Father of History,” and is the first historian known to have broken from Homeric tradition in order to treat historical subjects as a method of investigation arranged into a historiographic narrative.
- Thucydides, who had been trained in rhetoric, provided a model of historical prose-writing based more firmly in factual progression of a narrative, whereas Herodotus, due to frequent digressions and asides, appeared to minimize his authorial control.
- Thucydides is sometimes known as the father of “scientific history,” or an early precursor to 20th century scientific positivism, because of his strict adherence to evidence-gathering and analysis of historical cause and effect without reference to divine intervention.
- Despite its heavy political slant, scholars cite strong literary and philosophical influences in Thucydides’ work.

Key Terms

- Homer: A Greek poet of the 7th or 8th century BCE; author of the Iliad and the Odyssey.
- dactylic hexameter: A form of meter in poetry or a rhythmic scheme. Traditionally associated with the quantitative meter of classical epic poetry in both Greek and Latin, and consequently considered to be the grand style of classical poetry.
Homer

In the Western classical tradition, Homer is the author of the *Iliad* and the *Odyssey*, and is revered as the greatest of ancient Greek epic poets. These epics lie at the beginning of the Western canon of literature, and have had an enormous influence on the history of literature. Whether and when Homer lived is unknown. The ancient Greek author Herodotus estimates that Homer lived 400 years before his own time, which would place him at around 850 BCE, while other ancient sources claim that he lived much nearer to the supposed time of the Trojan War, in the early 12th century BCE. Most modern researchers place Homer in the 7th or 8th centuries BCE.

The formative influence of the Homeric epics in shaping Greek culture was widely recognized, and Homer was described as the “Teacher of Greece.” Homer’s works, some 50% of which are speeches, provided models in persuasive speaking and writing that were emulated throughout the ancient and medieval Greek worlds. Fragments of Homer account for nearly half of all identifiable Greek literary papyrus finds.

**The Iliad**

The *Iliad* (sometimes referred to as the *Song of Ilion* or *Song of Ilium*) is an ancient Greek epic poem in dactylic hexameter. Set during the Trojan War (the ten-year siege of the city of Troy (Ilium) by a coalition of Greek states), it tells of the battles and events surrounding a quarrel between King Agamemnon and the warrior Achilles. Although the story
covers only a few weeks in the final year of the war, the Iliad mentions or alludes to many of the Greek legends about the siege. The epic narrative describes events prophesied for the future, such as Achilles’ looming death and the sack of Troy. The events are prefigured and alluded to more and more vividly, so that when the story reaches an end, the poem has told a more or less complete tale of the Trojan War.

Nineteenth century excavations at Hisarlik provided scholars with historical evidence for the events of the Trojan War, as told by Homer in the Iliad. Additionally, linguistic studies into oral epic traditions in nearby civilizations, and the deciphering of Linear B in the 1950s, provided further evidence that the Homeric poems could have been derived from oral transmissions of long-form tales about a war that actually took place. The likely historicity of the Iliad as a piece of literature, however, must be balanced against the creative license that would have been taken over years of transmission, as well as the alteration of historical fact to conform with tribal preferences and provide entertainment value to its intended audiences.

**Herodotus**

Herodotus was a Greek historian who was born in Halicarnassus (modern-day Bodrum, Turkey) and lived in the 5th century BCE. He was a contemporary of Socrates. He is referred to as “The Father of History” and is the first historian known to have broken from Homeric tradition in order to treat historical subjects as a method of investigation arranged into a historiographic narrative. His only known work is a history on the origins of the Greco-Persian Wars, entitled, *The Histories*. Herodotus states that he only reports that which was told to him, and some of his stories are fanciful and/or inaccurate; however, the majority of his information appears to be accurate.

Athenian tragic poets and storytellers appear to have provided heavy inspiration for Herodotus, as did Homer. Herodotus appears to have drawn on an Ionian tradition of storytelling, collecting and interpreting oral histories he happened upon during his travels in much the same way that oral poetry formed the basis for much of Homer’s works. While these oral histories often contained folk-tale motifs and fed into a central moral, they also related verifiable facts relating to geography, anthropology, and history. For this reason, Herodotus drew criticism from his contemporaries, being touted as a mere storyteller and even a falsifier of information. In contrast to this type of approach, Thucydides, who had been trained in rhetoric, provided a model of historical prose-writing based more firmly in factual progression of a narrative, whereas Herodotus, due to frequent digressions and asides, appeared to minimize his authorial control.

**Thucydides**

Thucydides was an Athenian historian and general. His *History of the Peloponnesian War* recounts the 5th century BCE war between Athens and Sparta. Thucydides is sometimes known as the father of “scientific history,” or an early precursor to 20th century scientific positivism, because of his strict adherence to evidence-gathering and analysis of historical cause and effect without reference to divine intervention. He is also considered the father of political realism, which is a school of thought within the realm of political science that views the political behavior of individuals and the relations between states to be governed by self-interest and fear. More generally, Thucydides’ texts show concern with understanding why individuals react the way they do during such crises as plague, massacres, and civil war.

Unlike Herodotus, Thucydides did not view his historical accounts as a source of moral lessons, but rather as a factual reporting of contemporary political and military events. Thucydides viewed life in political terms rather than moral terms,
and viewed history in political terms. Thucydides also tended to omit, or at least downplay, geographic and ethnographic aspects of events from his work, whereas Herodotus recorded all information as part of the narrative. Thucydides’ accounts are generally held to be more unambiguous and reliable than those of Herodotus. However, unlike his predecessor, Thucydides does not reveal his sources. Curiously, although subsequent Greek historians, such as Plutarch, held up Thucydides’ writings as a model for scholars of their field, many of them continued to view history as a source of moral lessons, as did Herodotus.

Despite its heavy political slant, scholars cite strong literary and philosophical influences in Thucydides’ work. In particular, the *History of the Peloponnesian Wars* echoes the narrative tradition of Homer, and draws heavily from epic poetry and tragedy to construct what is essentially a positivistic account of world events. Additionally, it brings to the forefront themes of justice and suffering in a similar manner to the philosophical texts of Aristotle and Plato.

### Classical Greek Theater

Classical Greek theater, whether tragic or comic, has had great influence on modern literature and drama.

**LEARNING OBJECTIVES**

Describe the common themes found in classical Greek plays

**KEY TAKEAWAYS**

**Key Points**

- The city-state of Athens was the center of cultural power during this period, and held a drama festival in honor of the god Dionysus, called the Dionysia.
- Two dramatic genres to emerge from this era of Greek theater were tragedy and comedy, both of which rose to prominence around 500-490 BCE.
- Greek tragedy is an extension of the ancient rites carried out in honor of Dionysus; it heavily influenced the theater of ancient Rome and the Renaissance.
- Tragic plots were often based upon myths from the oral traditions of archaic epics, and took the form of narratives presented by actors.
- Aeschylus was the first tragedian to codify the basic rules of tragic drama, and is considered by many to be the “father of tragedy.” Athenian comedy is divided into three periods: Old Comedy, Middle Comedy, and New Comedy.

**Key Terms**

- **chorus**: In the context of Greek theatre, a homogeneous, non-individualized group of performers who comment, with a collective voice, on dramatic action.
- **deus ex machina**: A plot device whereby a seemingly unsolvable problem is suddenly and abruptly resolved by the unexpected intervention of some new event, character, ability, or object.
- **monody**: In the context of ancient Greek theater and literature, lyric poetry sung by a single performer rather than by a chorus.

The theatrical culture of ancient Greece flourished from approximately 700 BCE onward. The city-state of Athens was the center of cultural power during this period and held a drama festival in honor of the god Dionysus, called the...
Dionysia. This festival was exported to many of Athen’s numerous colonies to promote a common cultural identity across the empire. Two dramatic genres to emerge from this era of Greek theater were tragedy and comedy, both of which rose to prominence around 500-490 BCE.

**Greek Tragedy**

Sometimes referred to as Attic tragedy, Greek tragedy is an extension of the ancient rites carried out in honor of Dionysus, and it heavily influenced the theater of ancient Rome and the Renaissance. Tragic plots were often based upon myths from the oral traditions of archaic epics, and took the form of narratives presented by actors. Tragedies typically began with a prologue, in which one or more characters introduce the plot and explain the background to the ensuing story. The prologue is then followed by paraodos, after which the story unfolds through three or more episodes. The episodes are interspersed by stasima, or choral interludes that explain or comment on the situation that is developing. The tragedy then ends with an exodus, which concludes the story.

**Aeschylus and the Codification of Tragic Drama**

Aeschylus was the first tragedian to codify the basic rules of tragic drama. He is often described as the father of tragedy. He is credited with inventing the trilogy, a series of three tragedies that tell one long story. Trilogies were often performed in sequence over the course of a day, from sunrise to sunset. At the end of the last play, a satyr play was staged to revive the spirits of the public after they had witnessed the heavy events of the tragedy that had preceded it.
According to Aristotle, Aeschylus also expanded the number of actors in theater to allow for the dramatization of conflict on stage. Previously, it was standard for only one character to be present and interact with the homogeneous chorus, which commented in unison on the dramatic action unfolding on stage. Aeschylus's works show an evolution and enrichment in dialogue, contrasts, and theatrical effects over time, due to the rich competition that existed among playwrights of this era. Unfortunately, his plays, and those of Sophocles and Euripides, are the only works of classical Greek literature to have survived mostly intact, so there are not many rival texts to examine his works against.
The Reforms of Sophocles

Sophocles was one such rival who triumphed against the famous and previously unchallenged Aeschylus. Sophocles introduced a third actor to staged tragedies, increased the chorus to 15 members, broke the cycle of trilogies (making possible the production of independent dramas), and introduced the concept of scenery to theater. Compared to the works of Aeschylus, choruses in Sophocles' plays did less explanatory work, shifting the focus to deeper character development and staged conflict. The events that took place were often left unexplained or unjustified, forcing the audience to reflect upon the human condition.

The Realism of Euripides

Euripides differs from Aeschylus and Sophocles in his search for technical experimentation and increased focus on feelings as a mechanism to elaborate the unfolding of tragic events. In Euripides' tragedies, there are three experimental aspects that reoccur. The first is the transition of the prologue to a monologue performed by an actor informing spectators of a story's background. The second is the introduction of deus ex machina, or a plot device whereby a seemingly unsolvable problem is suddenly and abruptly resolved by the unexpected intervention of some new event, character, ability, or object. Finally, the use of a chorus was minimized in favor of a monody sung by the characters.
Another novelty introduced by Euripidean drama is the realism with which characters’ psychological dynamics are portrayed. Unlike in Aeschylus or Sophocles’ works, heroes in Euripides’ plays were portrayed as insecure characters troubled by internal conflict rather than simply resolute. Female protagonists were also used to portray tormented sensitivity and irrational impulses that collided with the world of reason.
Greek Comedy

As Aristotle wrote in his *Poetics*, comedy is defined by the representation of laughable people, and involves some kind of blunder or ugliness that does not cause pain or disaster. Athenian comedy is divided into three periods: Old Comedy, Middle Comedy, and New Comedy. The Old Comedy period is largely represented by the 11 surviving plays of Aristophanes, whereas much of the work of the Middle Comedy period has been lost. New Comedy is known primarily by the substantial papyrus fragments of Menander. In general, the divisions between these periods is largely arbitrary, and ancient Greek comedy almost certainly developed constantly over the years.

Old Comedy and Aristophanes

Aristophanes, the most important Old Comic dramatist, wrote plays that abounded with political satire, as well as sexual and scatological innuendo. He lampooned the most important personalities and institutions of his day, including Socrates in *The Clouds*. His works are characterized as definitive to the genre of comedy even today.

Middle Comedy

Although the line between Old and Middle Comedy is not clearly marked chronologically, there are some important thematic differences between the two. For instance, the role of the chorus in Middle Comedy was largely diminished to the point where it had no influence on the plot. Additionally, public characters were no longer impersonated or personified onstage, and objects of ridicule tended to be more general rather than personal, and in many instances, literary rather than political. For some time, mythological burlesque was popular among Middle Comic poets. Stock characters also were employed during this period. In-depth assessment and critique of the styling of Middle Comedy is difficult, given the lack of complete bodies of work. However, given the revival of this style in Sicily and Magna Graecia, it appears that the works of this period did have considerable widespread literary and social impact.

New Comedy

The style of New Comedy is comparable to what is contemporarily referred to as situation comedy or comedy of manners. The playwrights of Greek New Comedy built upon the devices, characters, and situations their predecessors had developed. Prologues to shape the audience’s understanding of events, messengers’ speeches to announce offstage action, and *ex machina* endings were all well established tropes that were used in New Comedies. Satire and farce occupied less importance in the works of this time, and mythological themes and subjects were replaced by everyday concerns. Gods and goddesses were, at best, personified abstractions rather than actual characters, and no miracles or metamorphoses occurred. For the first time, love became a principal element in this type of theater.

Three playwrights are well known from this period: Menander, Philemon, and Diphilus. Menander was the most successful of the New Comedians. Menander’s comedies focused on the fears and foibles of the ordinary man, as opposed to satirical accounts of political and public life, which perhaps lent to his comparative success within the genre. His comedies are the first to demonstrate the five-act structure later to become common in modern plays. Philemon’s comedies dwell on philosophical issues, whereas Diphilus was noted for his use of farcical violence.
Classical Greek Architecture

Classical Greek architecture can be divided into three separate styles: the Doric Order, the Ionic Order, and the Corinthian Order.

LEARNING OBJECTIVES

Describe the distinguishing characteristics of Classical Greek Architecture

KEY TAKEAWAYS

Key Points

- Classical Greek architecture is best represented by substantially intact ruins of temples and open-air theaters.
- The architectural style of classical Greece can be divided into three separate orders: the Doric Order, the Ionic Order, and the Corinthian Order. All three styles have had a profound impact on Western architecture of later periods.
- While the three orders of Greek architecture are most easily recognizable by their capitals, the orders also governed the form, proportions, details, and relationships of the columns, entablature, pediment, and stylobate.
- The Parthenon is considered the most important surviving building of classical Greece, and the zenith of Doric Order architecture.

Key Terms

- **stylobate**: In classical Greek architecture, a stylobate is the top step of a stepped platform upon which colonnades of temple columns are placed. In other words, the stylobate comprises the temple flooring.
- **capitals**: In architecture, a capital forms the topmost member of a column.
- **entablature**: An entablature is the superstructure of moldings and bands that lay horizontally above columns and rest on capitals.
- **pediment**: A pediment is an element in classical, neoclassical, and baroque architecture that is placed above the horizontal structure of an entablature, and is typically supported by columns.

Classical Greek architecture is highly formalized in structure and decoration, and is best known for its temples, many of which are found throughout the region as substantially intact ruins. Each classical Greek temple appears to have been conceived as a sculptural entity within the landscape, and is usually raised on higher ground so that its proportions and the effects of light on its surface can be viewed from multiple angles. Open-air theaters are also an important type of building that survives throughout the Hellenic world, with the earliest dating from approximately 525-480 BCE.

Greek architectural style can be divided into three separate orders: the Doric Order, the Ionic Order, and the Corinthian Order. These styles have had a profound impact on Western architecture of later periods. In particular, the architecture of ancient Rome grew out of Greek architecture. Revivals of Classicism have also brought about renewed interest in the architectural styles of ancient Greece. While the three orders of Greek architecture are most easily recognizable by their capitals, the orders also governed the form, proportions, details, and relationships of the columns, entablature, pediment, and stylobate. Orders were applied to the whole range of buildings and monuments.
The Doric Order

The Doric Order developed on mainland Greece and spread to Italy. It is most easily recognized by its capital, which appears as a circular cushion placed on top of a column onto which a lintel rests. In early examples of the Doric Order, the cushion is splayed and flat, but over time, it became more refined, deeper, and with a greater curve.

Doric columns almost always feature fluting down the length of the column, numbering up to 20 flutes. The flutes meet at sharp edges, called arrises. Doric columns typically have no bases, with the exception of a few examples dating from the Hellenistic period. Columns of an early Doric temple, such as the Temple of Apollo at Syracuse, could have a column height to an entablature ratio of 2:1, and a column height to a base diameter ratio of only 4:1. Later, a column height to a diameter ratio of 6:1 became more usual, and there is a column height to an entablature ratio at the Parthenon of approximately 3:1.

Doric entablatures consist of three parts: the architrave, the frieze, and the cornice. The architrave is composed of stone lintels that span the space between columns. On top of this rests the frieze, one of the major areas of sculptural decoration. The frieze is divided into triglyphs and metopes. The triglyphs have three vertical grooves, similar to columnar fluting, and below them are guttae, small strips that appear to connect the triglyphs to the architrave below. The triglyphs are located above the center of each capital and the center of each lintel.

Pediments in the Doric style were decorated with figures in relief in early examples; however, by the time the sculptures on the Parthenon were created, many pediment decorations were freestanding.

The Parthenon

The Parthenon is considered the most important surviving building of classical Greece and the zenith of Doric Order architecture. It is a former temple on the Athenian Acropolis dedicated to the patron goddess of Athens, Athena. Construction began on the Parthenon in 447 BCE, when the Athenian Empire was at its peak. Construction was completed in 438 BCE, but decoration of the building continued until 432 BCE. Although most architectural elements of the Parthenon belong to the Doric Order, a continuous sculptured frieze in low relief that sits above the architrave belongs to the Ionic style.
The Ionic Order

The Ionic Order coexisted with the Doric Order and was favored by Greek cities in Ionia, Asia Minor, and the Aegean Islands. It did not evolve into a clearly defined style until the mid-5th century BCE. Early Ionic temples in Asia Minor were particularly ambitious in scale.

The Ionic Order is most easily identified by its voluted capital. The cushion placed on top of the column is similarly shaped to that of the Doric Order, but is decorated with a stylized ornament and surmounted by a horizontal band that scrolls under to either side.

Ionic Order columns are fluted with narrow, shallow flutes that do not meet at a sharp edge, but have a flat band between them. The usual number of flutes is 24, but there can be as many as 44. The architrave is not always decorated, but more often it rises in three outwardly-stepped bands. The frieze runs in a continuous band and is separated from other members by rows of small projecting blocks.

The Ionic Order is lighter in appearance than the Doric Order, with columns that have a 9:1 ratio, and the diameter and the whole entablature appears much narrower and less heavy than those of the Doric. Decorations were distributed with some variation, and Ionic entablatures often featured formalized bands of motifs. The external frieze often contained a continuous band of figurative sculpture of ornament, though this was not always the case. Caryatids—draped female figures used as supporting members to the entablature—were also a feature of the Ionic Order.

The Corinthian Order

The Corinthian Order grew directly from the Ionic in the mid-5th century BCE, and was initially of a very similar style and proportion, with the only distinguishing factor being its more ornate capitals. The capitals of the Corinthian Order were
much deeper than those of the Doric and Ionic Orders. They were shaped like a bell-shaped mixing bowl and ornamented with a double row of acanthus leaves above which rose splayed, voluted tendrils. The ratio of column height to diameter of the Corinthian Order is generally 10:1, with the capital taking up more than a tenth of the height. The ratio of capital height to diameter is generally about 1:16:1.

Initially the Corinthian Order was used internally in such sites as the Temple of Apollo Epicurius at Bassae. By the late 300s, features of the Corinthian Order began to be used externally at sites such as the Choragic Monument of Lysicrates and the Temple of Zeus Olympia, both in Athens. During the Hellenistic period, Corinthian columns were sometimes built without fluting. The Corinthian Order became popular among the Romans, who added a number of refinements and decorative details.

Scientific Advancements in the Classical Period

The Hellenistic Period witnessed significant scientific advancements, due to the mixing of Greek and Asian culture and royal patronage.

LEARNING OBJECTIVES

Describe the various scientific advancements made during the Hellenistic period

KEY TAKEAWAYS

Key Points

- Great seats of learning rose during the Hellenistic Period, including those at Alexandria and Antioch.
- Scientific inquiries were often sponsored by royal patrons.
- The discoveries of several Greek mathematicians, including Pythagoras and Euclid, are still used in mathematical teaching today. Important developments include the basic rules of geometry, the idea of a formal mathematical proof, and discoveries in number theory, mathematical analysis, and applied mathematics.
- The Greeks also developed the field of astronomy, which they treated as a branch of mathematics to a highly sophisticated level.
- Hippocrates was a physician of the classical period, and is considered one of the most outstanding figures in the history of medicine. Most notably, he founded the Hippocratic school of medicine, which revolutionized medicine in ancient Greece by establishing it as a discipline distinct from other fields, and making medicine a profession.

Key Terms

- **Hellenistic period**: The period of ancient Greek and Mediterranean history between the death of Alexander the Great in 323 BCE and the emergence of the Roman Empire, as signified by the Battle of Actium in 31 BCE.
- **Alexandria**: An important seat of learning within the Hellenistic civilization and the capital of Hellenistic, Roman, and Byzantine Egypt for almost 1,000 years, until the Muslim conquest of Egypt in 641 CE.

Hellenistic Culture

Hellenistic culture produced seats of learning in Alexandria, Egypt and Antioch, Syria, along with Greek-speaking populations across several monarchies. Hellenistic science differed from Greek science in at least two ways. First, it
benefited from the cross-fertilization of Greek ideas with those that had developed in the larger Hellenistic world. Secondly, to some extent, it was supported by royal patrons in the kingdoms founded by Alexander’s successors.

Especially important to Hellenistic science was the city of Alexandria in Egypt, which became a major center of scientific research in the 3rd century BCE. Two institutions established there during the reigns of Ptolemy I Soter (reigned 323-283 BCE) and Ptolemy II Philadelphus (reigned 281-246 BCE) were the Library and the Museum. Unlike Plato ‘s Academy and Aristotle ‘s Lyceum, these institutions were officially supported by the Ptolemies, although the extent of patronage could be precarious, depending on the policies of the current ruler.

![The Great Library of Alexandria](https://human.libretexts.org/Bookshelves/History/Book%3A_World_History_(Boundless)/Chapter_7%3A_Ancient_Greece_and_the_Hellenistic_World/Section_6%3A_Culture_in_Classical_Greece)


**Mathematics and Astronomy**

The discoveries of several Greek mathematicians, including Pythagoras and Euclid, are still used in mathematical teaching today. Important developments include the basic rules of geometry, the idea of a formal mathematical proof, and discoveries in number theory, mathematical analysis, and applied mathematics. Ancient Greek mathematicians also came close to establishing integral calculus.

The Greeks also developed the field of astronomy, which they treated as a branch of mathematics, to a highly sophisticated level. The first geometrical, three-dimensional models to explain the apparent motion of the planets was developed in the 4th century BCE, by Eudoxus of Cnidus and Callippus of Cyzicus. Their younger contemporary, Heraclides Ponticus, proposed that the Earth rotates around its axis. In the 3rd century BCE, Aristarchus of Samos was the first to suggest a heliocentric system. In the 2nd century BCE, Hipparchus of Nicea made a number of contributions, including the first measurement of precession and the compilation of the first star catalog, in which he proposed the modern system of apparent magnitudes.
The Antikythera mechanism, a device for calculating the movements of the planets, was the first ancestor of the astronomical computer. It dates from about 80 BCE, and was discovered in an ancient shipwreck off the Greek island of Antikythera. The device became famous for its use of a differential gear, which was previously believed to have been invented in the 16th century, as well as the miniaturization and complexity of its parts, which has been compared to that of clocks produced in the 18th century.

The Medical Field

The ancient Greeks also made important discoveries in the medical field. Hippocrates was a physician of the classical period, and is considered one of the most outstanding figures in the history of medicine. He is sometimes even referred to as the “father of medicine.” Most notably, he founded the Hippocratic school of medicine, which revolutionized medicine in ancient Greece by establishing it as a discipline distinct from other fields, and making medicine a profession.

Other notable Hellenistic scientists and their achievements include:

- Herophilos (335-280 BCE), who was the first to base medical conclusions on dissection of the human body and to describe the nervous system
- Archimedes (c. 287-212 BCE), a geometer, physicist, and engineer who laid the foundations of hydrostatics and statics, and explained the principle of the lever
- Eratosthenes (c. 276 BCE-195/194 BCE), who measured the distance between the Sun and the Earth, as well as the size of the Earth