

"Hellenistic" Greece:

324 - 100 B.C.E.

•Mr. Cegielski

Essential Questions:

- 1) How did Alexander the Great so easily conquer Classical Greece?
- 2) How did Alexander the Great transform ancient Greek civilization?
- 3) How did Greek civilization and culture spread during this time period? In what fields did the greatest achievements occur?



The "Known" World – 3c B.C.E.



Labels on map: EUROPE, ASIA, AFRICA, NILE, TIBER, MEDITERRANEAN SEA, PERSIAN GULF, INDIAN OCEAN, NORTH SEA, ARABIA, INDIA, CHINA, JAPAN, AUSTRALIA, ANTARCTICA, EQUATOR, 0, 15, 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180, 195, 210, 225, 240, 255, 270, 285, 300.



THE GREEK WORLD

•Review of Peloponnesian War

- Sparta invades Athenian lands.
- Destruction of the Athenian fleet at Aegospotami
- Plague in Athens in 430 B.C.E.
- Siege of Athens--Food supply cut off
- Unconditional surrender of Athens in 404 BCE

•Dominance and Fall of Sparta

- Sparta installs the **Thirty Tyrants** in Athens
- Athenian exiles in Thebes and Corinth build a new army
- Pausanias allows the restoration of the Athenian democracy under the control of Sparta
- Sparta seizes Thebes in peace time and attempts to seize Athens
- Athenian and Theban alliance defeat Spartans at Leuctra
- Helots are freed and given a separate state
- Sparta ceases to be a first-rank power

•Rise of Macedonian Power

- In 359 B.C.E, **Phillip II** became king of Macedonia.
- He had **3 objectives**:
 - (1) create a strong army
 - (2) unify the quarreling Greek states
 - (3) destroy the Persian Empire
- Invasion of Greece
 - Defeat of Athenian and Theban military by 338 B.C.E.
- During his preparations to invade Persia, Philip was murdered either by a Persian agent or by a assassin hired by his first wife, Olympias.



Macedonia



Alexander the Great

356-323 B.C.E.



Alexander Establishes an Empire

- Alexander III takes power at age 20
- Beginning in 334 B.C.E., he leads an invasion force of 30,000 soldiers into Persia and soon liberates all of the Ionian city states.



Alexander's Victories

- Invades and conquers Syria
- Enters Egypt and is greeted as liberator, Pharaoh, and Re. Establishes a new city and named it Alexandria.
- By 331 B.C.E. he invades Mesopotamia and eventually wins the Battle of Gaugamela near the Tigris River.
- By 327 B.C.E., he invades frontier region of India as far east as the Indus river but then is forced to turn around by his exhausted troops.

SUMMARY: Conquests of Alexander

- | | |
|---------------------------|-----|
| • Ionia and Anatolia | 333 |
| • Syria, Palestine, Egypt | 332 |
| • Mesopotamia | 331 |
| • Persepolis | 330 |
| • King of Persia | 330 |
| • India | 327 |
| • Returns to Susa | 324 |
| • Dies (age 33) | 323 |

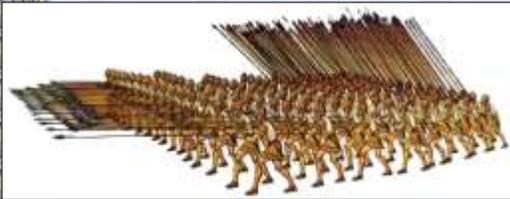


Alexander the Great's Empire



Warfare in the Age of Alexander

- **Phalanx:** A formation of infantry carrying overlapping shields and long spears, developed by Philip II and used by Alexander the Great



Warfare in the Age of Alexander

- **Hoplite**
 - The main melee warrior of the Macedonian army.
 - Worked mainly in the tight phalanx formation, creating impregnable lines that often left the enemy demoralized.

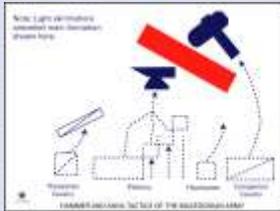


Hoplites in Action



Warfare in the Age of Alexander

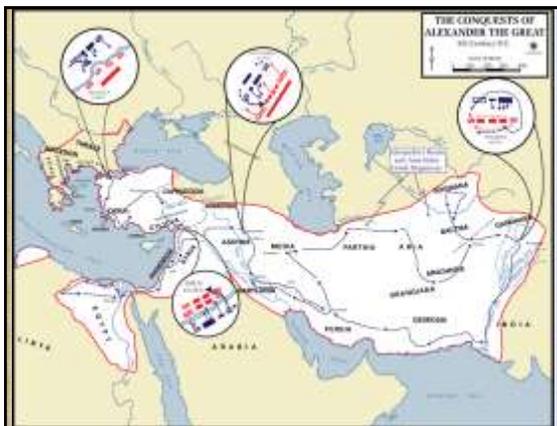
- Companions
 - Alexander's **elite cavalry**, the offensive arm of his army, and his elite guard.
 - They would be used in conjunction with the phalanx. The phalanx would fix the enemy in place and then the companion cavalry would attack on the flank.
 - Alexander would lead the charge with his cavalry, normally in a wedge formation.
 - These troops would also protect the flanks of the Macedonian line during battle.



Warfare in the Age of Alexander

- Sieges involved the surrounding and blockading of a town or fortress by an army trying to capture it.
- A variety of weapons were built to hurl projectiles over city walls, scale or batter the walls, and transport soldiers over them.





One of Alexander's greatest conquests: Tyre

- "... if Alexander deserves permanent commemoration as a general, then it is above all in his capacity as a besieger, and of all his sieges Tyre was his masterpiece."
- Paul Cartledge, Alexander the Great, 147

Tyre

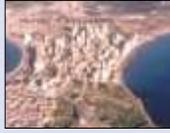
- Old city on the mainland was abandoned
- New city built on an island two miles long and separated from the coast by a half mile channel
 - Walls were 150 feet high
- Had two harbors (Sidonian and Egyptian)
- Alexander originally had no ships so he built a **mole**—a breakwater--across the channel to the island.





Tyre

- Mole was designed to be 200 feet wide and was built by driving piles into the bottom and filling in the space with stones, earth, and wood
- Entire trees --- branches, leaves, and all --- were thrown beside the piles to serve as a breakwall
- Stone was hauled in from the old city
- "A city and a forest were exhausted to build this wonderful mole."
- Theodore Dodge, *Alexander*, 330.



•Alexander's original mole has grown over the centuries and is now a broad landbridge with roads and buildings on it.

Tyre

- Tyrians attacked the mole with missiles, ships, and divers
- Alexander was forced to build two towers on the end of the mole to fend off attacks
- Tyrians launched a fire ship carrying cauldrons of sulfur, naphtha, and chemical oils to destroy the towers
- Fire ship burned down the towers and cracked the end of the mole so that it later was washed away by waves
- The work of months was lost in an hour, but Alexander began building another, better mole

Tyrian Fire Ship Burns the Towers



Tyre

- Alexander collected a fleet of over 200 ships and maneuvered them into moorings off the Sidonian and Egyptian harbors
- Blockaded the Tyrian fleet in its harbors and now was at liberty to use his siege engines to reduce the city's walls



No. of ships	Origin
• 80	Sidon, Aradus, and Byblus
• 10	Rhodes
• 3	Soli and Mallus
• 10	Lycia
• 1	Macedon
• 120	Cyprus

•Composition of Alexander's Fleet

Tyre

- Finally the engines penetrated the wall on the side toward Egypt
- The fleet had captured the north and south fronts of the city
- Ladders were thrown up against the walls and the Macedonians burst in



•5th Century Greek Battering Ram

Tyre

- After a seven month siege, Tyre fell
- 8,000 Tyrians were killed in the fighting
 - 2,000 more were hung afterwards
- 400 Macedonians were killed in the siege and just 20 in the assault



Gaugamela (Arbela) and the Fall of the Persian Empire

- “Most agree that this was Alexander’s greatest set-piece battle.”
 - Paul Cartledge, *Alexander the Great*, 151.

Gaugamela (Arbela): The Fall of the Persian Empire

- At Issus, Alexander captured **Persian King Darius III**’s family and was holding them hostage but treating them well
- “Darius appeared to have lost the character for strength which he was thought at one time to possess. An excellent ruler in peace, he was his own worst enemy in war.”
 - Theodore Dodge, *Alexander the Great*, 360.



•Seal of King Darius

Gaugamela (Arbela)

- Darius had assembled a huge army from all the Persian nationalities for a stand-off at **Gaugamela**—a flat plain in modern-day northern Iraq.
 - Estimates range from 200,000 to a million infantry and 45,000 to 100,000 cavalry
 - 200 scythed chariots
 - 15 elephants
- Alexander had about 40,000 men



•Darius III, King of Persia
•336-330 B.C.

Gaugamela (Arbela)

- Darius drew his army up on a large plain near Gaugamela
- The ground was carefully leveled, obstacles removed, and brush cut down to allow free movement of his chariots and horses
- Darius wanted to lure Alexander into a battlefield of his own choosing so Darius could employ his masses



•Scythed chariot

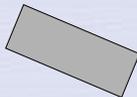
Gaugamela (Arbela)

- Alexander advanced and camped within sight of Darius's army on Sept 30, 331 B.C.
- Darius feared a night attack and kept his men alert all night
- When Alexander did attack the next day, Darius's men were tired
- In the opening moves, the Persians tried to outflank Alexander
 - Larger force had given them this capability

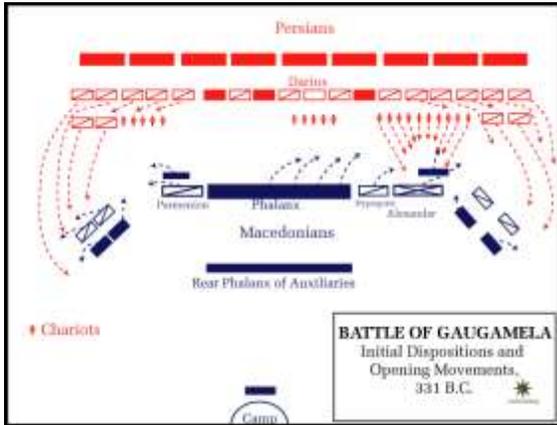


Gaugamela (Arbela)

- Alexander was able to counter with his reserve
 - Two flying columns behind each wing which could wheel outward to meet any outflanking foe, to guard the rear, or to reinforce the phalanx in the center
 - First such use of a reserve in history



•Oblique order



Gaugamela (Arbela)

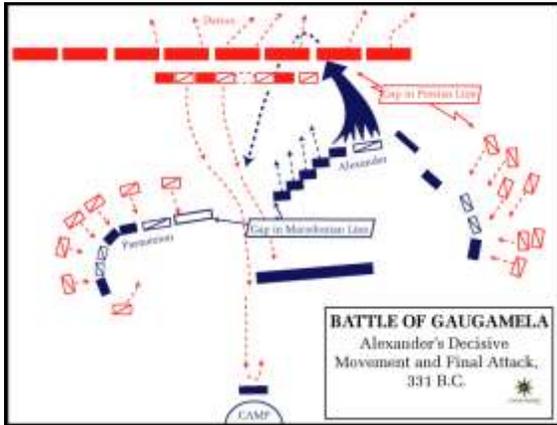
- Alexander attacked on the right to avoid Darius's obstacles—caltrops-- in the center
- Darius countered with his chariots and cavalry, but Alexander checked them with his right flying column

Caltrops—is an antipersonnel weapon made up of two or more sharp nails or spines arranged in such a manner that one of them always points upward from a stable base (for example, a tetrahedron). They may be thought of as the landmines of antiquity, useful to shape the battlefield and force the enemy into certain paths and approaches, or to provide a passive defense as part of a defensive works system. Caltrops serve to slow down the advance of horses, war elephants, and human troops. They were said to be particularly effective against the soft feet of camels.

Gaugamela (Arbela)

- Alexander then advanced against the Persian left center, exploiting a gap that had been created when Darius shifted to meet the earlier threat to his right
- Alexander formed his men into a wedge and struck the gap
- A column of Persian cavalry exploited a gap of Alexander's own and attacked to Alexander's rear, but Alexander defeated them with his left flying column

Wedge Formation



Gaugamela (Arbela)

- Darius now feared for his own safety and fled the field
- The entire Persian center and left also fled
- The Persian army was dispersed
- Alexander pursued for 70 miles to Arbela (modern day Arbil) but couldn't catch Darius
- **The Persians lost 40,000 to 90,000!**
- The Macedonians only 500!

Why did Alexander win at Gaugamela (Arbela)?

- The military genius of Alexander
 - "The Persians still relied on multitudes. Alexander was introducing new tactics."
 - Theodore Dodge, *Alexander the Great*, 385.
- Flying column reserves
- The wedge to penetrate an opening
- Striking not merely with mass but at the right place and time
- All around security
- Discipline of troops
- Ability to determine the enemy weakness and seize opportunity rapidly

After Gaugamela

- Darius's escape frustrated Alexander because it prevented him from full claim to being king of Persia
- Eventually Darius's followers assassinated him
- As Alexander became king of Persia and continued to advance east, he took on an increasingly Eastern attitude

The End of the Empire

- Alexander
 - Married Roxanna and had his men also intermarry
 - Adopted Eastern dress and habits
 - Publicly insisted upon his descent from the gods
 - Began giving key positions to Persians
- The Macedonians were tired of campaigning and resented the changes in Alexander's behavior and become mutinous
- Alexander died in June 323, perhaps as a result of poisoning



•"The Marriage of Alexander the Great and Roxanna" by Ishmail Parbury

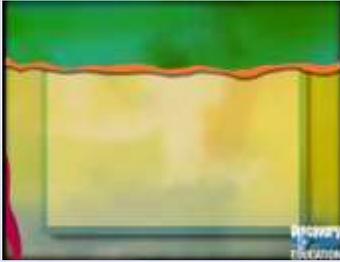
Route of Alexander the Great's Campaigns—Easternmost Extent



The route taken by Alexander the Great in his conquest of the Persian Empire, 334–323 b.c.e. Starting from the Macedonian capital at Pella, he traveled to Bactria where he marries the Bactrian princess – **Roxanne**. He reached the Indus valley before being turned back by his own restive troops. Tragedy then strikes Alexander.

Alexander the Great (24:59)

Introduction:
 Alexander's triumphs over the Persian Empire remain one of history's greatest campaigns of conquest. What inner conflicts drove this great military leader, a former student of Aristotle? Follow the story of a man who ruled the world stage for a brief time, but whose influence was felt years after his death.



QUESTIONS:

- 1) As you watch the program, think about the concept of strong leadership and identify Alexander's personality traits, strategic abilities, and leadership methods that justify this label. Were there any limitations to his leadership and decision-making abilities?
- 2) Alexander spread his empire through three continents, and he imposed Greek culture and law throughout these conquered lands. Discuss the ethics of starting wars for the purpose of territorial expansion.
- 3) Discuss the role of cultural diffusion in spreading Greek culture and transforming other cultures in conquered territories.
- 4) What would happen if a present-day leader carried out a similar campaign to Alexander's?

ALTERNATIVE VIDEO: "ENGINEERING AN EMPIRE- ALEXANDER THE GREAT" (APPROX. 50 M)

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- 3) Discuss the role of cultural diffusion in spreading Hellenistic architecture and engineering. Choose three of Alexander's greatest achievements in this field.
- 4) What would happen if a present-day leader carried out a similar campaign to Alexander's?

•Alexander's Death

- Plans to return to Greece where he would build a fleet to return to India
- Dies from a fever in the city of Babylon, Mesopotamia, at age 33
- Since Alexander did not produce a child, there is no heir to the empire.

After Alexander

- After Alexander died, his generals jockeyed for power and by 275 they had divided up his kingdom into three large states
 - Antigonos took Greece and Macedon
 - Ptolemy took Egypt
 - Seleucus took the former Achaemenid empire
- The period of Alexander and his successors is called the Hellenistic period to reflect the broad influence of Greek culture beyond Greece's borders



Partitioning of an Empire

- **Ptolemy I**
 - Egypt
- **Seleucus I**
 - Mesopotamia
- **Antigonos I**
 - Asia Minor and Macedon
- Greece begins to see incursions from the barbarians to the West
- By 200 BCE Rome has taken all of Greek empire except Egypt

The Breakup of Alexander's Empire

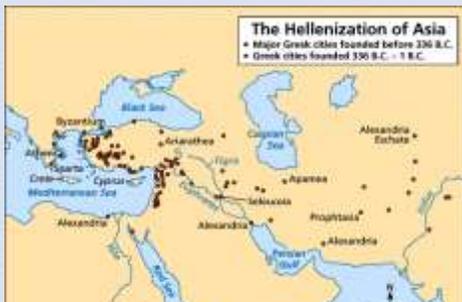


The Incursion of Rome into the Hellenistic World



•Cultural Diffusion: •The Spread of Hellenistic Culture

Building Greek Cities in the East



During his conquests, Alexander established several cities which acted as centers of trade for his empire.



**Pergamum:
A New
“Hellenistic”
City**

Cosmopolitan
Culture



Trade in the Hellenistic World



The Economy of the Hellenistic Era

Production & exports	Oil
Gold	Pearls
Grain	Silk
Horses	Slaves
Lumber	Wine

■ Hellenistic economic sphere
■ Seleucid economic sphere
— Trade routes

Alexandria: The Center of Hellenistic Culture

- **Alexandria**— an Egyptian city established by Alexander the Great— became an intellectual center with the first museum, including a library of nearly a million volumes, an institute for scientific research, a zoo, and a botanical garden.
- It reaped the economic benefits from a double harbor that could hold 1,200 trading vessels.
- It also had a **great lighthouse**—one of the 7 wonders of the world.
- Jewish scholars translated the Hebrew Bible into Greek.
- The social status of women improved. Women moved freely, learned how to read and write, and often entered such occupations as real estate, banking, and government.



Library at Alexandria (333 B.C.E.)



Hellenistic Philosophers

- § **Cynics → Led by Diogenes**
 - Avoid luxuries and live a humble, simple life in accord with nature.
- § **Epicurians → Led by Epicurus**
 - avoid joy and pain by accepting the world as is, ignoring politics, and living the simple life.

Hellenistic Philosophers

- § **Stoics → Led by Zeno**
 - nature is the expansion of divine will.
 - concept of natural law—ignore emotion and follow reason.
 - get involved in politics, not for personal gain, but to perform virtuous acts for the good of all.
 - true happiness is found in great achievements.

Hellenic vs. Hellenistic Art



•Hellenistic Art & •Literature

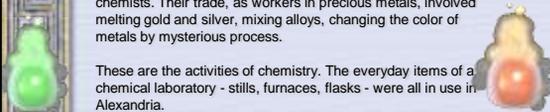
- Hellenistic artists departed from earlier Greek styles.
 - Emphasized the display of emotions
 - Carved portrait heads
- Playwrights, such as Menander, wrote comedies instead of tragedies.

Greek science in Alexandria: from the 3rd century BC

- Classical Greece has produced a brilliant tradition of theorists and scientists.
- In this bustling commercial centre, linked with long Egyptian traditions of skilled work in precious metals, people are interested in making practical use of Greek scientific theory. If Aristotle says that the difference in material substances is a matter of balance, then that balance might be changed. Copper might become gold.

Among the practical scientists of Alexandria were men who can be seen as the first alchemists and the first experimental chemists. Their trade, as workers in precious metals, involved melting gold and silver, mixing alloys, changing the color of metals by mysterious process.

These are the activities of chemistry. The everyday items of a chemical laboratory - stills, furnaces, flasks - were all in use in Alexandria.



\$ **Scientists / Mathematicians:**

- **Ptolemy** → geocentric theory.
- **Aristarchus** → heliocentric theory—the earth revolves around the sun.
- **Eratosthenes** → estimated the earth's circumference to within 1 percent of the correct figure.
- **Euclid** → geometry.
- **Archimedes** → pulley and cylinder-screw, which is still used to lift water for irrigation.

Euclid and Archimedes: 3rd century BC

- **Euclid** taught in Alexandria during the reign of Ptolemy. No details of his life are known, but his brilliance as a teacher is demonstrated in the *Elements*, his thirteen books of geometrical theorems. Many of the theorems derive from Euclid's predecessors (in particular Eudoxus), but Euclid presents them with a clarity which ensures the success of his work. It becomes Europe's standard textbook in geometry, retaining that position until the 19th century.
- **Archimedes** was a student at Alexandria, possibly within the lifetime of Euclid. He returns to his native Syracuse, in Sicily, where he far exceeds the teacher in the originality of his geometrical researches.
 - **What was Archimedes' death ray?** Archimedes calculated pi and developed calculus proofs 2,000 years before the subject was invented. Did he really create a death machine with mirrors?



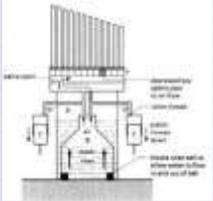
Human vivisection of convicted criminals: c.300 BCE

- Early in the 3rd century BCE two surgeons in Alexandria, **Herophilus** and **Erasistratus**, make the first scientific studies designed to discover the workings of human anatomy.
- The cost of their contribution to science would be considered too high in modern times (they acquire much of their information from vivisection of convicted criminals). But Celsus, a Roman writer on medical history, energetically justifies the suffering of the criminals as providing 'remedies for innocent people of all future ages'.



Mechanical organ: 3rd century BC

- Pipes of varying sorts are among the earliest of musical instruments, and pipers must often have imagined a pipe too large for human lungs. A scientist in Alexandria, by the name of **Ctesibius**, is credited with being the first to invent an organ - with a hand-operated pump sending air through a set of large Pipes. Each pipe is played by pressing a note on a board. This is the beginning of keyboard instruments.
- By the time of the Roman empire, a few centuries later, the organ is a familiar and popular instrument - playing a prominent part in public games and circuses as well as private banquets. The emperor Nero, an enthusiastic performer, is proud of his talents on the organ.

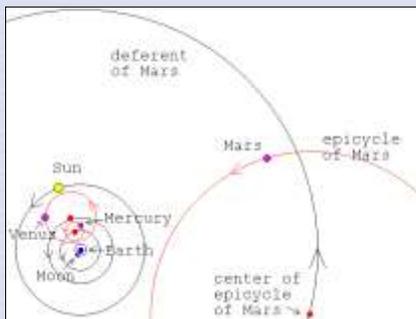


The circumference of the earth: calculated c. 220 BC

- **Eratosthenes**, the librarian of the museum at Alexandria, had more on his mind than just looking after the scrolls. He was making a map of the stars (he will eventually catalogue nearly 700), and he was busy with his search for prime numbers; he does this by an infinitely laborious process now known as the 'sieve of Eratosthenes'.
- But his most significant project is working out the circumference of the earth.
- Eratosthenes hears that in noon at midsummer the sun shines straight down a well at Aswan, in the south of Egypt. He finds that on the same day of the year in Alexandria it casts a shadow 7.2 degrees from the vertical. If he can calculate the distance between Aswan and Alexandria, he will know the circumference of the earth (360 degrees instead of 7.2 degrees, or 50 times greater).
- He discovers that camels take 50 days to make the journey from Aswan, and he measures an average day's walk by this fairly predictable beast of burden. It gives him a figure of about 46,000 km for the circumference of the earth. This is, amazingly, only 15% out (40,000 km is closer to the truth).



Ptolemaic View of the Universe



ALEXANDRIA IN THE ROMAN WORLD

- **A Roman port: 1st - 4th century AD**
- During the Roman empire Alexandria retained its commercial importance as the port through which the grain of Egypt passes on its way to the granaries of Italy.
- With the decline of Greek influence, the city lost something of its intellectual edge - though the encyclopedic efforts of Ptolemy in the 2nd century AD would exert a long and profound influence, and an important step in algebra is taken in Alexandria at much the same time.
- A disaster in AD 215 demonstrated that the inhabitants had also retained an independent spirit. The emperor Caracalla, visiting Alexandria, became the butt of some disrespectful satires. His response was to order a widespread massacre of the citizens of Alexandria.

CRITICAL THINKING QUESTIONS:

1. Alexander believed that the true "blood" of a city is trade. Do you agree with this opinion? How is trade similar to blood? If you do not agree, what do you think is the true "blood" of a city?
2. Of all the achievements of Alexander the Great, which three do you think were the most significant? Why?
3. How would the world be different today if money had never been invented?
4. In your opinion, what was the greatest invention or discovery of the scientists of Alexandria? Why?
