

<b>Compelling Question</b>	<b>In what ways did the triremes promote democracy and in what ways did they promote imperial dominance in Athens and the Mediterranean?</b>		
<b>Standards and Practices</b>	<p><i>C3 Historical Thinking Standards – D2.His.1.9-12.</i></p> <p>Evaluate how historical events and developments were shaped by unique circumstances of time and place as well as broader historical contexts.</p> <p><i>C3 Historical Thinking Standards – D2.His.2.9-12.</i></p> <p>Analyze change and continuity in historical eras.</p> <p><i>Common Core Content Standards – CCSS.ELA-LITERACY.WHST.9-10.1.B</i></p> <p>Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner, that anticipates the audience's knowledge level and concerns.</p>		
<b>Staging the Question</b>	What are triremes and how were they used by the Athenians?		
<b>Supporting Question 1</b>	<b>Supporting Question 2</b>	<b>Supporting Question 3</b>	<b>Supporting Question 4</b>
What were the triremes and their technological foundations, and how were they used by Athens?	What were the basic principles of Athenian democracy?	In what ways were the triremes connected with Athenian democracy?	In what ways were the triremes connected with Athenian imperialism over the eastern Mediterranean?
<b>Formative Performance Task</b>	<b>Formative Performance Task</b>	<b>Formative Performance Task</b>	<b>Formative Performance Task</b>
<p><u><i>Classroom Activity:</i></u> <u><i>Introduction to the Trireme (See Below)</i></u> <u>Watch: <a href="#">IEEE REACH</a></u> <u>Video: <a href="#">Tirames(Part One)</a></u></p> <p>- (Option 2: Trireme: Definition, Facts &amp; Watch: <a href="#">Greek Diagram video on study.com</a>. Sign-up on study.com required.)</p> <p>Design a “car sales” ad for the trireme, extolling its unique features</p> <p>View: <a href="#">Trireme Olympias video (outside source)</a></p>	Create a poster “advertising” Athenian democracy. Include all the characteristics that made it unique in its time and appealing in ours.	<p><u>Watch: <a href="#">IEEE REACH</a></u> <u>Video: <a href="#">Tirames(Part Two)</a></u></p> <p>- (Option 2: Watch Study.com video (sign-up required) <a href="http://study.com/academy/lesson/pericles-the-delian-league-and-the-athenian-golden-age.html">http://study.com/academy/lesson/pericles-the-delian-league-and-the-athenian-golden-age.html</a></p> <p>After watching above video, review and answer the questions in the <a href="#">Democracy and Empire PPT</a></p> <p><a href="#">View Pilot Program video</a></p>	<p><u><i>Classroom Activity:</i></u> <u><i>Tirames of Atlantis (See Below)</i></u></p>

<p><u><b>Classroom Activity:</b></u> <u><b>Trireme Design</b></u></p> <p>- A. Review: <a href="#">Tribes Hands-on Activity "How to" PDF</a> and the <a href="#">Tribes Hands-on Activity PPT</a> before beginning the hands-on activity and the Trireme Design found below.</p> <p><u><b>Classroom Activity:</b></u> <u><b>Building Your Vessel</b></u></p> <p>- A. Review <a href="#">Tribes Hands-on Activity "How to" PDF</a></p> <p>- B. Review <a href="#">Tribes Hands-on Activity PPT</a> before classroom activity and then begin Building your Vessel found below.</p>		<p>Team Competitions: Vessel Load Test (Prerequisite: <u><b>Classroom Activities: Trireme Design, and Building your Vessel</b></u>, found in column 1 and below. This activity is the last part of the Building Your Vessel Activity)</p> <p>Optional: Vessel Speed Race (Determine if your tech department can build a pulley system as described in the <a href="#">Tribes Hands-on Activity "How to" PDF</a>, found in the Classroom Activity outline in column one.)</p> <p><u><b>Classroom Activity: Oarsman Simulation with Hands-on-Activity</b></u> (To do fully, requires model rowing platform)</p> <p>- A. View <a href="#">Trireme Olympias video</a></p> <p>- B. Review <a href="#">Oarsman Model Rowing "How To"</a> for Hands-on Activity</p>	
Featured Sources	Featured Sources	Featured Sources	Featured Sources
<p>1A. Excerpt from Hale, John R. <i>Lords of the sea: The epic story of the Athenian navy and the birth of democracy</i>. Penguin, 2009.</p> <p>1B. Examples of bow projections dated 9<sup>th</sup>-7<sup>th</sup> centuries BC from Murray, William M., Larrie D. Ferreiro, John Vardalas, and Jeffrey G. Royal. "Cutwaters Before Rams: an experimental investigation into the origins and development of the waterline</p>	<p>2A. Blackwell, Christopher W. "Athenian Democracy: A brief overview," <i>Demos</i>. (The Stoa: a Consortium for Scholarly Publication in the Humanities), February 28, 2003. <a href="http://www.stoa.org/projects/demos/article_democracy_overview?page=all">http://www.stoa.org/projects/demos/article_democracy_overview?page=all</a> (Accessed 23 October 2016)</p> <p>2B. <i>Pericles' Funeral Oration from the Peloponnesian War</i>, Thucydides (c.460/455-c.399 BCE): Peloponnesian War, Book</p>	<p>3A. Excerpt from Hale, John R. <i>Lords of the sea: The epic story of the Athenian navy and the birth of democracy</i>. Penguin, 2009.</p> <p>3B. Translation of the Decree of Troezen. Lendering, Jona. "The Troezen Decree." Livius.org: Articles on ancient history. August 25, 2015. Accessed January 02, 2017. <a href="http://www.livius.org/sources/content/the-troezen-decree/">http://www.livius.org/sources/content/the-troezen-decree/</a>.</p> <p>3C. Translation of the Decree of Troezen.</p>	<p>4A. Map of Tribute Districts of the Athenian Empire, from Hale, John R. <i>Lords of the sea: The epic story of the Athenian navy and the birth of democracy</i>. Penguin, 2009.</p> <p>4B. Excerpt from Hale, John R. <i>Lords of the sea: The epic story of the Athenian navy and the birth of democracy</i>. Penguin, 2009.</p>

<p>ram." <i>International Journal of Nautical Archaeology</i> (2016).</p> <p>1C Technical details about <i>Olympias</i>, a full-reconstruction of the trireme and insight on oarsmen, sourced from <b>"The One and Only <i>Olympias</i>." <i>The Official Trireme Website</i>. Accessed January 29, 2017. <a href="http://triremeolympias.com/design.html">http://triremeolympias.com/design.html</a>.</b></p> <p>1D. Line drawing of Athenian "three", from Murray, William, and William Michael Murray. <i>The age of titans: the rise and fall of the great Hellenistic navies</i>. OUP USA, 2012. And an excerpt from <b>"J T (Timothy) Shaw Papers." <i>The Trireme Trust</i>. Accessed January 29, 2017. <a href="http://www.triremetrust.org.uk/">http://www.triremetrust.org.uk/</a>.</b></p> <p>1E. Images of Cutwater Bow tests from Murray, William M., Larrie D. Ferreiro, John Vardalas, and Jeffrey G. Royal. "Cutwaters Before Rams: an experimental investigation into the origins and development of the waterline." <i>International Journal of Nautical Archaeology</i> 46, no. 1 (2017).</p>	<p>2.34-46, from Halsall, Paul. <i>Internet ancient history sourcebook</i>. Paul Halsall, 1998. <a href="http://sourcebooks.fordham.edu/ancient/pericles-funeralspeech.asp">http://sourcebooks.fordham.edu/ancient/pericles-funeralspeech.asp</a> (Accessed 19 November 2016)</p>	<p>Jameson, Michael H. "A Decree of Themistokles from Troizen." American School of Classical Studies at Athens. Accessed January 2, 2017. <a href="http://www.ascsa.edu.gr/pdf/uploads/hesperia/147294.pdf">http://www.ascsa.edu.gr/pdf/uploads/hesperia/147294.pdf</a>.</p> <p>3D. Image of the Decree of Troezen. Μαρσύας. "Decree of Themistocles (or Troezen)." Ancient History Encyclopedia. March 20, 2014. Accessed January 02, 2017. <a href="http://www.ancient.eu/image/2419/">http://www.ancient.eu/image/2419/</a>.</p>	
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Summative Performance Task	Argument	Write a thesis essay that directly addresses the compelling question using specific claims and relevant evidence from historical sources to support your claims while acknowledging competing views.
	Extension	Debate whether the Greek triremes primarily promoted democracy or imperial dominance.
Taking Informed Action	<p><b>UNDERSTAND:</b> Research the connection between military technology and governance around the world.</p> <p><b>ASSESS:</b> To what extent is responsible governance dependent on military technology and to what extent are they in opposition.</p> <p><b>ACTION:</b> Write a letter to an elected federal official arguing for an increase or decrease (depending on your position) in military spending for advanced technologies in order to further the goals of responsible government.</p>	

## TO THE TEACHER

All *REACH* Instructional Units are intended to be “classroom-ready.” Each unit begins with a *Unit Plan* in the form of a [C3 Inquiry Design Model](#). The *Unit Plan* includes learning objectives, content standards, formative and summative tasks, links to primary and secondary resources, and a warm-up activity.

Units are organized around a *Compelling Question* designed to inspire curiosity and promote discussion among students. To that end, we have also included a brief student introduction to the topic entitled, *Staging the Question*. Once students have been introduced to the topic, any number of *Formative Performance Tasks* may be completed using the included *Document Excerpts* (teachers may elect instead to utilize full-text documents linked within the *Featured Sources* section). *Document Excerpts* are print-ready in single-sheet format and keyed to the citations in the *Featured Sources* section of the *Unit Plan*. Teachers should select the *Formative Performance Tasks* and accompanying *Sources* that best suit their own instructional needs – content requirements, performance goals, student readiness, and time constraints. Upon the completion of each unit, students should be adequately prepared to complete the *Summative Performance Task* and *Taking Informed Action* sections of the *Unit Plan*.

To further assist the teacher, we have included a more thorough *Background Information* section. This document is intended to serve as professional reading prior to implementing the unit. Teachers may also wish to read the full-length primary and secondary sources from which the shorter excerpts were taken.

## STAGING THE QUESTION

In the fall of 480 BCE, Xerxes, the King of Persia, attacked Greece on land and at sea. While the land battle that ended with a Spartan stand to the last man at Thermopylae, has been burned into the collective memory of western civilization – think of the movie 300 – it was the Greek navy that repelled Xerxes' assault and saved Athens from certain defeat. The Persian naval attack ended with the Battle of Salamis, another David and Goliath confrontation. The Greeks were outnumbered – some historians claim by as much as 10 to 1 – but by early 479 BCE, the Persian fleet was decimated and in retreat. The source of Western democracy was safe once again.

What saved Greece from the encroachment of an empire that had already consumed much of western Asia? Was it the tenacity of Spartan warriors like at Thermopylae? Or the unique strength of free Athenians defending their homeland? While all of this played a role at Salamis, the key to the Greek victory was technology. The Athenian navy employed an innovative ship design called the Trireme. Built for speed and agility and designed as an offensive weapon, the trireme allowed the ancient Greeks to destroy most of the Persian fleet and stop the western advance of the imperial Persian king.

The trireme was powered by as many as 170 oarsmen in three tiers. In a 1985 re-creation of the ancient vessel based on historical documents, inexperienced rowers managed to achieve a top speed of 9 knots, so we might assume the ancient navy could go even faster. Speed was essential because mounted at the front of each trireme was a 400-pound bronze battering ram that could inflict fatal damage on its enemy with a single blow. In addition to its speed and offensive prowess, the trireme was perhaps the most maneuverable sea vessel of its time. Despite its 120-foot length and 200-person crew capacity, a trireme could achieve a 180-degree turn in under one minute!

Historians believe that the trireme was uniquely suited to the Athenian navy. The combination of free citizen-rowers, advanced military technology, and an astute naval commander allowed the Athenian navy to overpower a much larger enemy at the Battle of Salamis. The details have been subjects of historical debate for centuries, because accounts of the trireme in battle are often contradictory and there exists no known record of the vessel's building plans. Not subject to debate, however, is the ultimate success of the Greek trireme navy that saved a free people and a continent from the clutches of Persian imperialism.

### Document 1A

Themistocles had specified that Athens' new ships should be fast triremes: light, open, and undecked for maximum speed and maneuverability. Only gangways would connect the steersman's small afterdeck to the foredeck at the prow where the lookout, marines, and archers were stationed. The new Athenian triremes were designed for ramming attacks, not for carrying large contingents of troops.... Between the stern- and stemposts ran the long lines of planking. In triremes, the outer shell was built up by joining plank to plank, rather than by attaching planks to a skeleton of frames and ribs as in later "frame-first" traditions.... Along the narrow edges of each plank the builders bored rows of holes: tiny ones for the linen cords, larger ones for the *gomphoi* or pegs.... Once the planks were in place, the shipwright's assistants spent days squatting on the inside of the rising hull, laboriously threading linen cords through the small holes along the planks' edges and pulling them tight.... Unlike wool it would not stretch or give with the working of the ship at sea. Linen possessed the very proper nautical quality of being stronger wet than dry. The system of construction made a strong hull that could withstand severe shocks....

On top of the long slender hull the shipwright now erected the structure that set Greek triremes apart from their Phoenician counterparts: the wooden rowing frame.... Sometimes referred to as an outrigger, the rowing frame was wider than the ship's hull.... As the great size of the rowing frame suggests, oars were the prime movers of the trireme. At two hundred per ship (a total that included thirty spares), Themistocles' new fleet required twenty thousand lengths of fine quality fir wood for its oars.... One man pulled each oar.... The 62 *thranite* oarsmen on the top tier enjoyed the most prestige. Inboard and below them were placed the wooden thwarts or seats for the 54 *zygian* oarsmen and the 54 *thalamians*. The latter took their name from the *thalamus* or hold since they were entombed deep within the hull, only a little above the waterline. All the rowers faced aft toward the steersman as they pulled their oars.

Once all these wooden fittings of the hull were complete, it was time to coat the ship with pitch, an extract from the trunks and roots of conifers.... The poetical references to "dark ships" or "black ships" referred to the coating of pitch.... Through conscientious maintenance – new applications of pitch, drying out and inspection of the hulls, and prompt replacement of unsound planks – an Athenian trireme could remain in active service for twenty-five years.

The trireme's design approached the physical limits of lightness and slenderness combined with maximum length. So extreme was the design that not even the thousands of wooden pegs and linen stitches could prevent the hull from sagging or twisting under the stresses of rough seas or even routine rowing. On Athenian triremes huge *hypozomata* or girding cables provided the tensile strength that the wooden structure lacked....

The ship's beak had already been fashioned in wood as part of the hull. To complete the trireme's prime lethal weapon, the ram, metalworkers had to sheathe the beak with bronze.... Master craftsmen made the rams with the same lost-wax method that they used to cast hollow bronze statues....

**SOURCE:** Excerpt from Hale, John R. *Lords of the sea: The epic story of the Athenian navy and the birth of democracy*. Penguin, 2009.

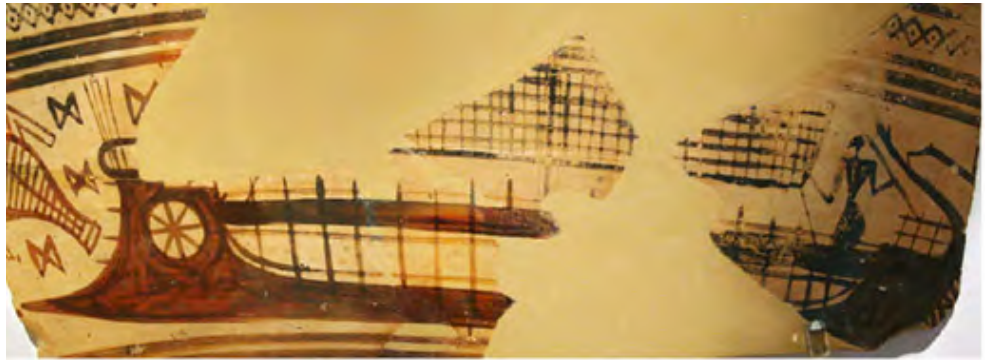


## Document 1B

### Examples of bow projections dated 9<sup>th</sup>-7<sup>th</sup> centuries BC

760–50 BCE

Fragment of a ship from an Attic 'Dipylon' Geometric vase, Athens National Archaeological Museum 802, Spathari 1995, 59, fig. 61.



735–10 BCE

Ship on an Attic Geometric krater found at Thebes London, British Museum 1899, 0219, Spathari 1995: 65, fig. 71.

c.701 BCE

Oared galley on an Assyrian relief found in the palace of Sennacherib at Kuyunjik, British Museum, 124772 A, Spathari, 1995: 76.



"Long and slender projecting forefeet can be seen in several ship depictions, and demonstrates the persistence of this feature over a multi-century period during which other evidence for ramming warfare is totally lacking."

**SOURCE:** From Murray, William M., Larrie D. Ferreiro, John Vardalas, and Jeffrey G. Royal. "Cutwaters Before Rams: an experimental investigation into the origins and development of the waterline ram." *International Journal of Nautical Archaeology* (2016).



## Document 1C

The Trireme HN Olympia is the only reconstruction of an ancient Athenian trireme in the world and an important example of experimental naval architecture. Construction on Olympias began in 1985 by a shipbuilder in Piraeus with drawing from naval architect John F. Coates. Coates created the trireme's blueprint on its reconstruction by partnering with historian J.S. Morrison....The reconstruction of the ancient warship is of a 4th and 5th century B.C. design and took into consideration ancient verification by Morrison, who was the former President of Wolfson College in Cambridge.

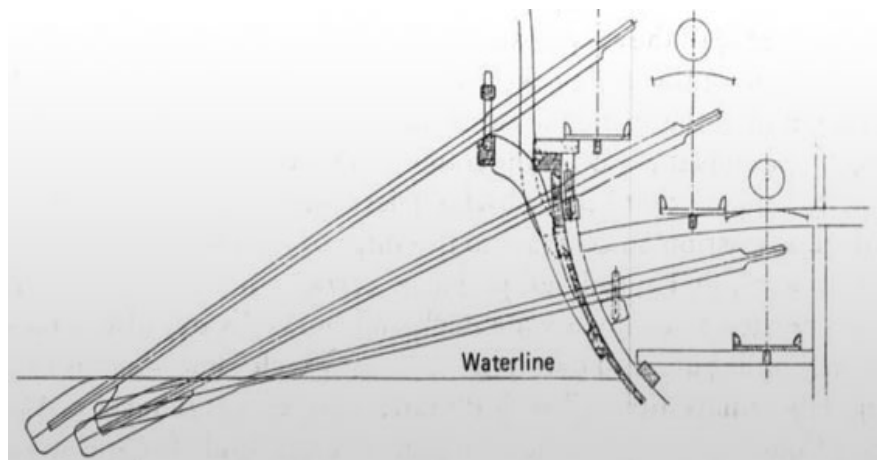
- Weight 70 tons
- Length 121 ft 1 in (36.9 m)
- Beam (high) 18 ft 1 in (5.5 m)
- Wide 17 ft (5.3 m)
- Draught 1.25
- Propulsion two large square sails and 170 oarsmen
- Speed Maximum with oars over 9 knots (17 km/h), continuous (crew rowing in turns) 2.5 mph (2.15 knots), estimated

Although no remains of triremes have been found, naval scholars had to rely on circumlocutory evidence in architecture, classical plays, a variety of ancient texts, and archaeological evidence mostly in the ship sheds of the Port of Piraeus.

The reconstruction of Olympias included consultations by English classical scholar and teacher, Charles Willink. Willink advised on the construction of the vessel based on his finding from Greek literature, art history and archaeology discoveries above and below water.

### **ROWER RECRUITMENT –**

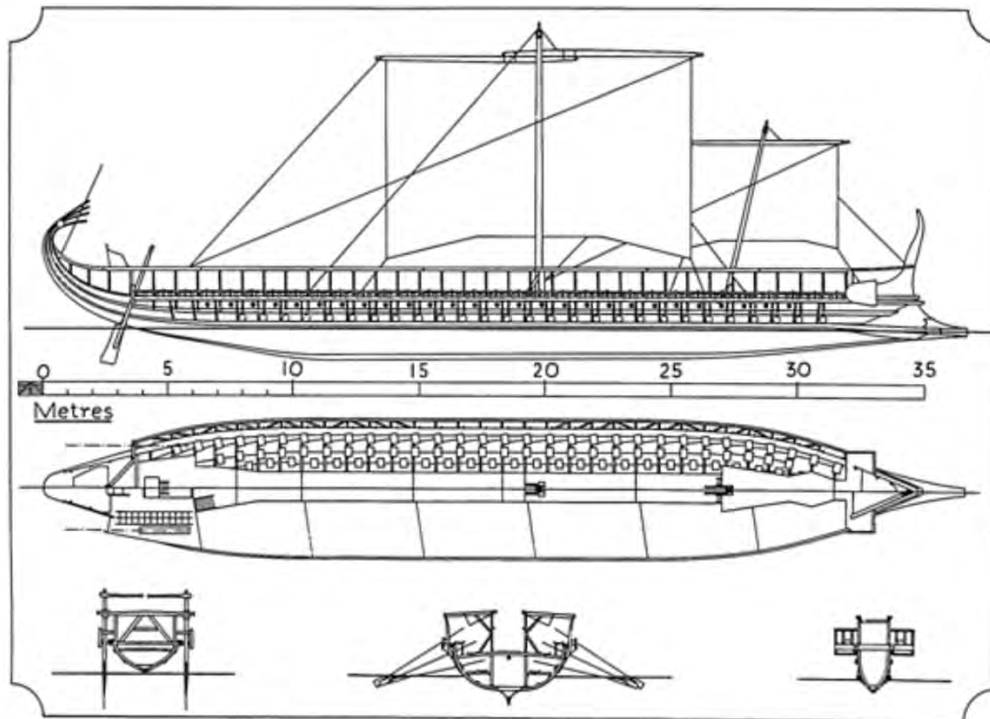
- 170 rowers supplied the driving force
- Required superior rowing skills and physical resilience and vigor to row, as the oarsmen had to maintain a constant pounding with full strokes to propel these warships through the water
- Teams of Athenian Trireme rowers were composed of free men.
- Required great coordinated rowing skills and lots of practice.



**SOURCE: "The One and Only Olympias." *The Official Trireme Website*. Accessed January 29, 2017.**

**<http://triremeolympias.com/design.html>.**

## Document 1D



Line drawing of Athenian "three" by J. F. Coates. Copyright © 2000, Cambridge University Press.

**SOURCE:** Murray, William, and William Michael Murray. *The age of titans: the rise and fall of the great Hellenistic navies*. OUP USA, 2012.

### Excerpt from the Trireme Trust

In 1982 the Trireme Trust was established by John Morrison a historian and academic naval architect along with Frank Welsh, a writer, to investigate the trireme. Their collaboration resulted in the Hellenic Navy's full-scale reconstruction of an Athenian Trireme of the 5<sup>th</sup> and 4<sup>th</sup> centuries BC, built in 1987 in Greece, known as the *Olympias*. John Coates, a naval architect worked out a design utilizing ancient evidence researched by John Morrison.

- 170 oarsman arranged in three tiers (85 to a side)
  - Thranites at the top (The name for oarsmen in the uppermost file of the trieres.)
  - Zygians in the middle (The name for oarsmen in the (vertically) middle file of the trieres.)
  - Thalamians at the bottom (The name for oarsmen in the lowest file of the trieres.)
  - The ideal crew height: 5'10", if you are over 6'1" conditions would be cramped on board.

**SOURCE:** "J T (Timothy) Shaw Papers." *The Trireme Trust*. Accessed January 29, 2017. <http://www.triremetrust.org.uk/>.

**Benefits of the Cutwater Bow Design**



*a) Control bow showing wave build-up at 10 knot equivalent;  
b) cutwater bow showing wave attenuation at 11 knot equivalent.*

**SOURCE:** Murray, William M., Larrie D. Ferreiro, John Vardalas, and Jeffrey G. Royal. "Cutwaters Before Rams: an experimental investigation into the origins and development of the waterline." *International Journal of Nautical Archaeology* 46, no. 1 (2017).

## Document 2A

The city of Athens lived under a radically democratic government from 508 until 322 BCE. Before the earlier date there was democracy to be found here and there in the government of Athens, and democratic institutions survived long after the latter date, but for those 186 years the city of Athens was self-consciously and decidedly democratic, autonomous, aggressive, and prosperous. Democracy in Athens was not limited to giving citizens the right to vote. Athens was not a republic, nor were the People governed by a representative body of legislators. In a very real sense, the People governed themselves, debating and voting individually on issues great and small, from matters of war and peace to the proper qualifications for ferry-boat captains.

The democratic government of Athens rested on three main institutions, and a few others of lesser importance. The three pillars of democracy were: the Assembly of the Demos, the Council of 500, and the People's Court. These were supplemented by the Council of the Areopagus, the Archons, and the Generals. Actual legislation involved both the Assembly and the Council, and ad hoc boards of "Lawmakers."

The Assembly was the regular gathering of male Athenian citizens (women also enjoyed a certain citizen status, but without political rights) to listen to, discuss, and vote on decrees that affected every aspect of Athenian life, both public and private, from financial matters to religious ones, from public festivals to war, from treaties with foreign powers to regulations governing ferry boats.

In the Assembly, each male citizen of Athens could speak, regardless of his station. The orator Aeschines says that "the herald, acting as a sergeant-at-arms, does not exclude from the platform the man whose ancestors have not held a general's office, nor even the man who earns his daily bread by working at a trade; nay, these men he most heartily welcomes, and for this reason he repeats again and again the invitation, 'Who wishes to address the Assembly?'"

Of course, some people might be better qualified than others to speak on certain subjects, and the citizens of Athens could be very critical when anyone tried to speak outside of his expertise. The character Socrates in Plato's *Protagoras* says that "when the Athenian Assembly is discussing construction, the citizens call for builders to speak, and when it is discussing the construction of ships they call for shipwrights, but if anyone else, whom the people do not regard as a craftsman, attempts to advise them, no matter how handsome and wealthy and well-born he may be, not one of these things induces them to accept him; they merely laugh him to scorn and shout him down, until either the speaker retires from his attempt, overborne by the clamor, or the Archers pull him from his place or turn him out altogether by order of the presiding officials". But, Socrates continues, when the discussion is not about technical matters but about the governing of the city, the man who rises to advise them on this may equally well be a smith, a shoemaker, a merchant, a sea-captain, a rich man, a poor man, of good family or of none.

**SOURCE: Blackwell, Christopher W. "Athenian Democracy: A brief overview," *Demos*. (The Stoa: A Consortium for Scholarly Publication in the Humanities), February 28, 2003.**

...Our constitution does not copy the laws of neighboring states; we are rather a pattern to others than imitators ourselves. Its administration favors the many instead of the few; this is why it is called a democracy. If we look to the laws, they afford equal justice to all in their private differences; if no social standing, advancement in public life falls to reputation for capacity, class considerations not being allowed to interfere with merit; nor again does poverty bar the way, if a man is able to serve the state, he is not hindered by the obscurity of his condition. The freedom which we enjoy in our government extends also to our ordinary life. There, far from exercising a jealous surveillance over each other, we do not feel called upon to be angry with our neighbor for doing what he likes, or even to indulge in those injurious looks which cannot fail to be offensive, although they inflict no positive penalty. But all this ease in our private relations does not make us lawless as citizens. Against this fear is our chief safeguard, teaching us to obey the magistrates and the laws, particularly such as regard the protection of the injured, whether they are actually on the statute book, or belong to that code which, although unwritten, yet cannot be broken without acknowledged disgrace....

If we turn to our military policy, there also we differ from our antagonists. We throw open our city to the world, and never by alien acts exclude foreigners from any opportunity of learning or observing, although the eyes of an enemy may occasionally profit by our liberality; trusting less in system and policy than to the native spirit of our citizens; while in education, where our rivals from their very cradles by a painful discipline seek after manliness, at Athens we live exactly as we please, and yet are just as ready to encounter every legitimate danger. In proof of this it may be noticed that the Lacedaemonians do not invade our country alone, but bring with them all their confederates; while we Athenians advance unsupported into the territory of a neighbor, and fighting upon a foreign soil usually vanquish with ease men who are defending their homes. Our united force was never yet encountered by any enemy, because we have at once to attend to our marine and to dispatch our citizens by land upon a hundred different services; so that, wherever they engage with some such fraction of our strength, a success against a detachment is magnified into a victory over the nation, and a defeat into a reverse suffered at the hands of our entire people. And yet if with habits not of labor but of ease, and courage not of art but of nature, we are still willing to encounter danger, we have the double advantage of escaping the experience of hardships in anticipation and of facing them in the hour of need as fearlessly as those who are never free from them....

In short, I say that as a city we are the school of Hellas, while I doubt if the world can produce a man who, where he has only himself to depend upon, is equal to so many emergencies, and graced by so happy a versatility, as the Athenian. And that this is no mere boast thrown out for the occasion, but plain matter of fact, the power of the state acquired by these habits proves. For Athens alone of her contemporaries is found when tested to be greater than her reputation, and alone gives no occasion to her assailants to blush at the antagonist by whom they have been worsted, or to her subjects to question her title by merit to rule. Rather, the admiration of the present and succeeding ages will be ours, since we have not left our power without witness, but have shown it by mighty proofs; and far from needing a Homer for our panegyrist, or other of his craft whose verses might charm for the moment only for the impression which they gave to melt at the touch of fact, we have forced every sea and land to be the highway of our daring, and everywhere, whether for evil or for good, have left imperishable monuments behind us. Such is the Athens for which these men, in the assertion of their

**SOURCE:** Thucydides (c.460/455-c.399 BCE): Peloponnesian War, Book 2.34-46, from Halsall, Paul.

**Internet ancient history sourcebook. Paul Halsall, 1998. (Accessed 19 November 2016)**



resolve not to lose her, nobly fought and died; and well may every one of their survivors be ready to suffer in her cause....

So died these men as became Athenians. You, their survivors, must determine to have as unfaltering a resolution in the field, though you may pray that it may have a happier issue. And not contented with ideas derived only from words of the advantages which are bound up with the defense of your country, though these would furnish a valuable text to a speaker even before an audience so alive to them as the present, you must yourselves realize the power of Athens, and feed your eyes upon her from day to day, till love of her fills your hearts; and then, when all her greatness shall break upon you, you must reflect that it was by courage, sense of duty, and a keen feeling of honor in action that men were enabled to win all this, and that no personal failure in an enterprise could make them consent to deprive their country of their valor, but they laid it at her feet as the most glorious contribution that they could offer. For this offering of their lives made in common by them all they each of them individually received that renown which never grows old, and for a sepulcher, not so much that in which their bones have been deposited, but that noblest of shrines wherein their glory is laid up to be eternally remembered upon every occasion on which deed or story shall call for its commemoration. For heroes have the whole earth for their tomb; and in lands far from their own, where the column with its epitaph declares it, there is enshrined in every breast a record unwritten with no tablet to preserve it, except that of the heart. These take as your model and, judging happiness to be the fruit of freedom and freedom of valor, never decline the dangers of war. For it is not the miserable that would most justly be unsparing of their lives; these have nothing to hope for: it is rather they to whom continued life may bring reverses as yet unknown, and to whom a fall, if it came, would be most tremendous in its consequences. And surely, to a man of spirit, the degradation of cowardice must be immeasurably more grievous than the unfelt death which strikes him in the midst of his strength and patriotism!

**SOURCE: Thucydides (c.460/455-c.399 BCE): Peloponnesian War, Book 2.34-46, from Halsall, Paul. *Internet ancient history sourcebook*. Paul Halsall, 1998. (Accessed 19 November 2016)**



**Document 3A**

[By the mid-fifth century BC...] The experiences of the common Athenian in seafaring and fighting were beginning to rival those of the aristocrats. He might not know Homer by heart, or trace his ancestry back to a warrior who had fought in the Trojan War. But the average thete had now *seen* Troy with his own eyes, a small hill off to the south as one rowed into the Hellespont on the run to Byzantium. During his naval service the ordinary citizen would follow the sea routes hallowed by the legends of Odysseus, Theseus, Jason, and Cadmus, to Asia, Africa, Europe, and the islands between. Although he cut a modest figure ashore in foreign parts, carrying his rowing pad as his only weapon instead of shield and spear, a mariner from Athens was the Odysseus of his time, widely traveled, many minded, facing dangers on the deep in the struggle to bring himself and his shipmates safely home....

An Athenian mariner's first stop outside the gates of the Navy Yard was likely to be the barbershop. In Athens haircuts and hairstyles had social and political implications. Aristocratic horsemen still wore long braids and gold hairpins. The common man (and the politicians who spoke for him) preferred a short cut, though not quite a crewcut.... From the barbershop the Athenian mariner emerged neatly trimmed and fully up to date. Flush with pay, he was now ready to plunge into the roiling marketplace of the Piraeus, located just beyond the perimeter of the shipsheds at Zea Harbor. Here the returning mariner could indulge in the luxuries that had been denied him during months of hard service with the fleet.... The food vendors provided fare fit for the Great King himself. An Athenian feast could include salt fish from the Black Sea, beef ribs from Thessaly, pork and cheese from Syracuse in Sicily, dates from Phoenicia, raisins and figs from Rhodes, pears and apples from Euboea, almonds from Naxos, and chestnuts from Asia Minor....

As the role of the navy and maritime trade expanded, the Piraeus became a great city in its own right. To create a home worthy of the Athenian navy, the Assembly hired the world's first professional urban planner, Hippodamus of Miletus.... No mere surveyor of streets, Hippodamus was in fact a utopian theorist. His quest led him in search of a physical setting for the perfect human community: social, spatial, and spiritual.... In his ideal city the population would be divided into three classes: craftsmen, farmers, and warriors. Land should also have its tripartite division: sacred, public, and private....

Hippodamus' assignment was described as dividing or cutting up the Piraeus. First he chose as his axis the long saddle of land that ran from the foot of Munychia Hill, the acropolis of the Piraeus, southwest to the Akte Hill and the quarries. On either side of this central spine Hippodamus marked out the boundaries of the sacred, public, and private areas.... In the center was the Agora, with its own council house and public offices. On the expanse of level ground north of Zea Harbor Hippodamus laid out this civic center, ever after known as the Hippodamian Agora. Near the edge of Zea Harbor the Agora widened out into an open area where the crews of triremes could assemble at the start of a naval expedition....

Uniformity of housing reinforced the message of democracy and equality. Hippodamus divided each residential city block among eight dwellings, all of which were only variations on a uniform "Piraeus house." The long and narrow lots, 40 feet by 70 feet, accommodated in one half a flagged courtyard equipped with outdoor ovens and a deep bell-shaped cistern to provide the household's water. The house itself included a family room with a hearth, with bedrooms on an upper floor above it. No one in the Piraeus was ever very far from the water. Thanks to the sloping terrain, the houses rose in tiers like

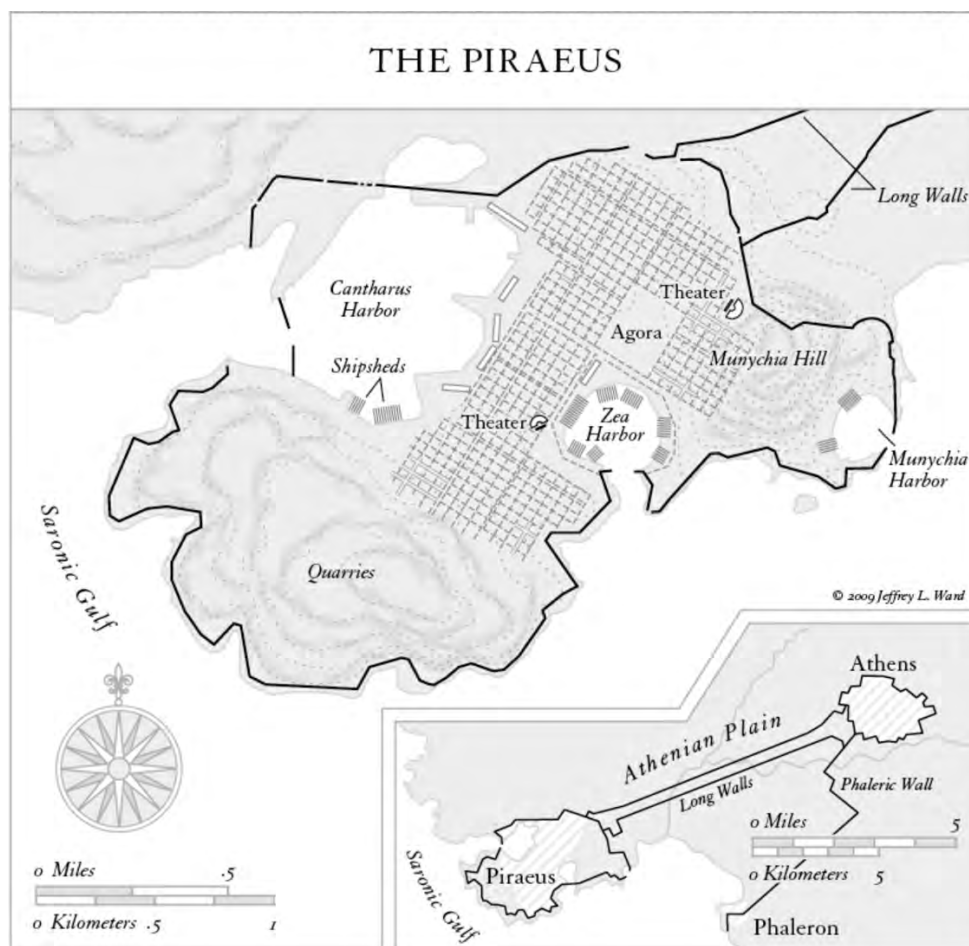
SOURCE: Excerpt from Hale, John R. *Lords of the sea: The epic story of the Athenian navy and the birth of democracy*. Penguin, 2009.

the seats in a theater. Almost every roof or upper story commanded a view down to the nearest harbor and out to the blue sea beyond....

In the maritime world of the Piraeus a happy tolerance reigned among all religions, and the idea of killing a man for worshipping the wrong god was unknown.... So popular were the foreign festivals that Athenians often walked the four miles down to the Piraeus to watch some new and exciting celebration in the streets.

The democratic spirit of Athens and its navy found its fullest embodiment in the sacred trireme *Paralos*.... Ardent democrats to a man, the crew of the *Paralos* opposed any proposals that smacked of oligarchy or tyranny.... The *Paralos* took on the role of the flagship for the entire navy. At times the *Paralos* served as a ship of war, but it also carried important dispatches, conveyed embassies on diplomatic missions, provided scouting reports to the rest of the navy, or served as a sacred ship to take priests and celebrants to rites and festivals overseas. Every four years the ship transported the city's Olympic athletes and their entourage around the Peloponnese to Olympia for the prestigious games celebrated in honor of Zeus.... Every member of the *Paralos*' crew was an Athenian citizen. The ship had no trierarch: the democratic crew was in command....

The experiment in democracy ensured that the fruits of naval victories were shared by all Athenians, transforming the life of even the poorest citizen. The age of the common man had dawned. For the first time anywhere on earth, a mass of ordinary citizens, independent of monarchs or aristocrats or religious leaders, was guiding the destiny of a great state.



SOURCE: Excerpt from Hale, John R. *Lords of the sea: The epic story of the Athenian navy and the birth of democracy*. Penguin, 2009.

## Document 3B

Gods.

Resolved by the Boule and the People.

Themistocles son of Neocles of Phrearrhioi made the motion.

The city shall be entrusted to Athena, [Athens](#)' protectress, and to the other gods, all of them, for protection and defense against the Barbarian on behalf of the country.

The Athenians in their entirety and the aliens who live in Athens shall place their children and their women in Troezen, [to be entrusted to Theseus?] the founder of the land. The elderly and movable property shall for safety be deposited at [Salamis](#). The treasurers and the priestesses are to remain on the Acropolis and guard the possessions of the gods.

The rest of the Athenians in their entirety and those aliens who have reached young manhood shall embark on the readied two hundred ships and they shall repulse the Barbarian for the sake of liberty, both their own and that of the other Greeks, in common with the Lacedaemonians, Corinthians, Aeginetans and the others who wish to have a share in the danger.

Appointment will also be made of captains, two hundred in number, one for each ship, by the generals, beginning tomorrow, from those who are owners of both land and home in Athens and who have children who are legitimate. They shall not be more than fifty years old and the lot shall determine each man's ship. The generals shall also enlist marines, ten for each ship, from men over twenty years of age up to thirty, and archers, four in number. They shall also by lot appoint the specialist officers for each ship when they appoint the captains by lot. A list shall be made also of the rowers, ship by ship, by the generals, on notice boards, with the Athenians to be selected from the lexiarchic registers, the aliens from the list of names registered with the polemarch. They shall write them up, assigning them by divisions, up to two hundred divisions, each of up to one hundred rowers, and they shall append to each division the name of the warship and the captain and the specialist officers, so that they may know on what warship each division shall embark.

When assignment of all the divisions has been made and they have been allotted to the warships, all the two hundred shall be manned by order of the Boule and the generals, after they have sacrificed to appease Zeus the All-powerful and Athena and Victory and Poseidon the Securer. When they have completed the manning of the ships, with one hundred they shall bring assistance to the Artemisium in Euboea, while the other hundred shall, all around Salamis and the rest of Attica, lie at anchor and guard the country.

To ensure that in a spirit of concord all Athenians will ward off the Barbarian, those banished for the ten year span shall leave for Salamis and they are to remain there until the people decide about them. Those who have been deprived of citizen rights are to have their rights restored.

[translated by Charles Fornara, Translated documents of Greece and Rome, volume one: Archaic times to the end of the Peloponnesian War (1977 Baltimore and London)]

SOURCE: Lendering, Jona. "The Troezen Decree." Livius.org: Articles on ancient history. August 25, 2015. Accessed January 02, 2017. <http://www.livius.org/sources/content/the-troezen-decree/>.

## Document 3C

### The Gods.

Resolved by the Council and the People on the motion of Themistokles, son of Neokles, of the deme Phrearrhoi: to entrust the city to Athena the Mistress of Athens and to all the other gods to guard and defend from the Barbarian for the sake of the land. The Athenians themselves and the foreigners who live in Athens are to remove their women and children to Troizen . . . the archegetes of the land. . . . The old men and the movable possessions are to be removed to Salamis. The treasurers and the priestesses are to remain on the acropolis protecting the possessions of the gods.

All the other Athenians and foreigners of military age are to embark on the 200 ships that lie ready and defend against the Barbarian for the sake of their own freedom and that of the rest of the Greeks, along with the Lakedaimonians, the Corinthians, the Aiginetans, and all others who wish to share the danger. The generals are to appoint, starting tomorrow, 200 trierarchs, one to a ship, from among those who have ancestral land in Athens and legitimate children and who are not older than fifty; to these men the ships are to be assigned by lot. They are also to enlist marines, 20 to a ship, from men between the ages of twenty and thirty, and four archers to a ship. They are also to assign the petty officers to the ships at the same time that they allot the trierarchs.

The generals are also to write up the names of the crews of the ships on white boards, taking the names of the Athenians from the lexiarchic registers, the foreigners from those registered with the polemarch. They are to write up the names assigning the whole number to 200 equal divisions and to write above each division the name of the trireme and trierarch and the names of the petty officers so that each division may know on which trireme it is to embark. When all the divisions have been composed and allotted to the triremes, the Council and the generals are to complete the manning of the 200 ships, after sacrificing a placatory offering to Zeus the Almighty, Athena, Victory, and Poseidon the Securer. When the manning of the ships has been completed, with one hundred of them they are to meet the enemy at Artemision in Euboea, and with the other hundred of them they are to lie off Salamis and the rest of Attika and keep guard over the land.

In order that all Athenians may be united in their defense against the Barbarian, those who have been sent into exile for ten years are to go to Salamis and to stay there until the People come to some decision about them, while those who have been deprived of citizen rights ....

**SOURCE:** Jameson, Michael H. "A Decree of Themistokles from Troizen." American School of Classical Studies at Athens. Accessed January 2, 2017.

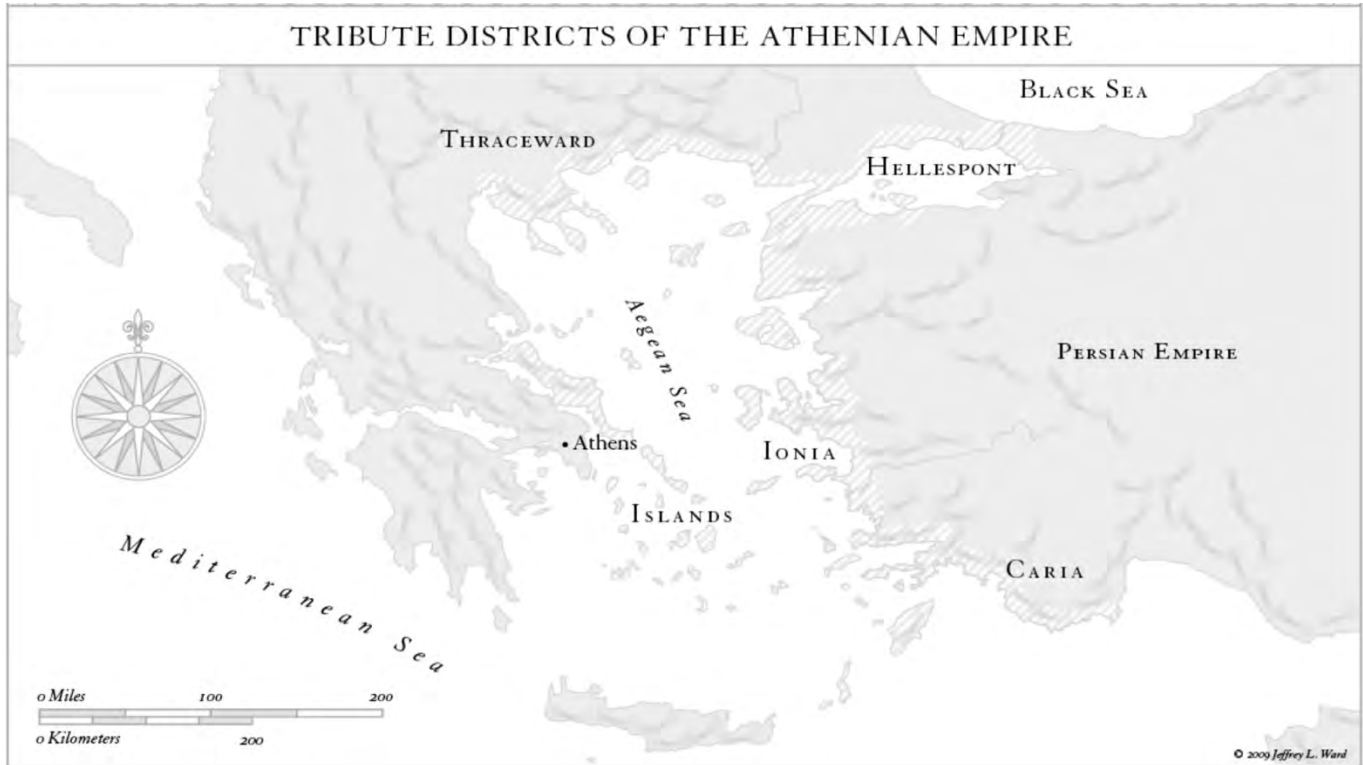
<http://www.ascsa.edu.gr/pdf/uploads/hesperia/147294.pdf>.





SOURCE: Μαρσύας. "Decree of Themistocles (or Troezen)." Ancient History Encyclopedia. March 20, 2014. Accessed January 02, 2017. <http://www.ancient.eu/image/2419/>.

## Document 4A



**SOURCE:** From Hale, John R. *Lords of the sea: The epic story of the Athenian navy and the birth of democracy*. Penguin, 2009.



## Document 4B

The demise of Spartan power had abruptly knocked away the cornerstone on which the Second Maritime League had been founded. The charter of the alliance proclaimed the league's purpose: to protect the allies from Spartan aggression. Why then should it continue to exist after the fall of Sparta? Pericles had managed to keep the Delian League together even after concluding peace with the Great King. Now the Athenians of a later generation decided to hold on to their naval hegemony with or without a Spartan menace to justify it. Fortunately for them, marauding fleets of pirates or Thessalians or Thebans almost annually stirred up trouble in the Aegean. The raids endangered trade and shipments of grain and thus obligingly provided Athens with a pretext for maintaining the league. As so often happens in empire building, an apparent enemy proved a valuable friend.

The allies were still haunted by the specter of the old oppressive Athenian Empire, with its imperial tribute and bloody massacres. Despite the Assembly's original pledge to promote liberty and justice, it was drifting in the direction of empire once more. Ignoring the league's charter, the Athenians installed governors and garrisons in certain cities and islands, just as in the bad old days. Because the Assembly continued to send expeditions to sea with insufficient funds to pay the crews, Athenian generals had to raid the territories of neutrals and even allies. Blatantly Athenians interfered in the internal politics of other states and increasingly employed the navy on missions that had nothing to do with the league.

This rising tide of abuses almost washed out the benefits that the league still provided to its members and to the Greeks at large....

**SOURCE:** Excerpt from Hale, John R. *Lords of the sea: The epic story of the Athenian navy and the birth of democracy*. Penguin, 2009.

## CLASSROOM ACTIVITY – INTRODUCTION TO THE TRIREME

**Watch: IEEE REACH Video: [Tribremes Video \(Part One\)](#)**

If time, Watch: [Tribremes Video \(Part Two\)](#) (Students may watch these videos at home.)

Option 2: Watch video on [Study.com](#) (sign-up required)

### Introduction

*“Time and winter rains have washed the original gaudy colors of scarlet, azure, and gold off the Parthenon. Passing centuries have also washed the blood and guts, sweat and struggle, from the modern conception of Athens. In losing sight of the Athenian navy, posterity has overlooked the vital propulsive force behind the monuments. A living sea creature, all muscle and appetite and growth, generated the glistening shell of inspiring art, literature and political ideas. Today we admire the shell for its beauty, but it cannot be fully understood without charting the life cycle of the animal that generated it. The beat of the oars was the heartbeat of Athens in the city’s Golden Age. This, then, is the story of unique and gigantic marine organism, the Athenian navy, that built civilization, empowered the world’s first great democracy, and led a band of ordinary citizens into new worlds. Their epic voyage alter the course of history (John R. Hale’s Lords of the Sea, p XXXIII).”*

According to the above passage, what TWO key things did the trireme symbolize?

a.

b.

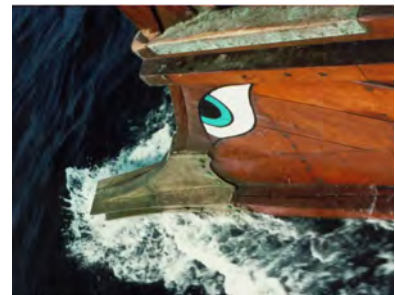
*What is a Tribreme? (Please watch the Tribreme video and describe a trireme in one original paragraph.)*



Olympias: reproduction of a trireme



3 tiered trireme: yes those are people in the hull on the bottom right



The bronze ram of the trireme

## CLASSROOM ACTIVITY – TRIREME DESIGN

### **Trireme Design:**

#### **Understanding the Math and Science of Flotation**

View [Algodoo's video \(2:04\)](#) to learn the role density plays in flotation.

Foam Core Vessel Design: Follow the instructions in the [Trireme Hands-on Activity PPT](#) Feel free to use a calculator.

Sketch your vessel. Include sizes and buoyancy calculations on the next page.

idea #1

idea#2

### Calculations Worksheet

Volume in cu inches (L x W x H) =

Volume in cu feet (cu / 1728) =

Pounds of water displaced (vol x 64) =

Mass of vessel =

Convert grams to lbs (g/453.6) =

Determine Load (water displaced - weight of vessel) =

## CLASSROOM ACTIVITY – BUILDING YOUR VESSEL

*When engaging in the IEEE REACH hands-on activities contemplated in the IEEE REACH lesson plans please proceed with caution and use all reasonable safety measures. All IEEE REACH hands-on activities are designed for classroom use only, with supervision by a teacher or an adult educator. Please be advised that IEEE shall not be responsible for any injuries or damages related to the use of these lesson plans or any activities described herein.*

[Review Trireme Hands-on Activity PPT](#)

[Review Triremes Hands-on Activity "How to" PDF](#)

### Building your Vessel

1. If you have access to the [Battle of Salamis app](#), open it to begin this step. Swipe to the left and click on “The Trireme”; then click on the button in the top right corner and look at the directions as it loads. Take a moment and use the 3D graphic to explore the construction of this amazing vessel. Although we are not actually constructing a trireme, you should note both the complexity and simplicity of this design before you begin to study the math and science behind floatation and start to make your own vessel.
2. Meet with your design team and examine your sketches and design plans. Choose ONE design that you believe will give you maximum speed and cargo weight. In this team competition, the winners’ vessel will carry the heaviest load and attain the highest speed.
3. Build your vessel using foam board, duct tape, and an exacto knife. Remember a paper clip needs to be attached to the front for testing.
4. Bring your vessel to the “testing tank.” One team member should hold the vessel while another places the weights inside. Remember to periodically let go to see if it still floats. As soon as it starts taking on water, you have reached your max. Consider shifting the load and spreading out the weight to maximize the results of your test.

#### **Testing Results:**

Success? Yes?\_\_\_No?\_\_\_ Why or why not? \_\_\_\_\_

Load capacity:\_\_\_\_\_ Maximum Speed:\_\_\_\_\_

#### **Now after your first test add the ram and test again:**

How did this impact your results? Why?

## Evaluation Worksheet

1. Did your product come out as planned. If no, what did you change?

2. What was the difference between your estimated load and actual load?

3. Why do you think this difference exists?

4. If you could go back and rebuild this prototype, what changes would you make for improved performance and aesthetics?

5. Knowing what you do about the Athenian trireme and having experienced real-world design and execution, what have you learned about the complexity and sophistication of their vessels?

6. What do you think were the design elements that made the Greek Trireme such a formidable force?



## CLASSROOM ACTIVITY – OARSMEN SIMULATION

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[SEE Hands-on-Activity for how to build an oar simulator.](#)

### Oarsmen Simulation

*John R. Hale, in his book, Lords of the Sea said, “the beat of the oars was the heartbeat of Athens in the city’s Golden Age”. As you have discovered, the power of the Trireme lies with the men who row. Rowing required tremendous strength, skill and stamina.*

*Now you and your teammates will step back in time, take a seat at the simulator and suspend reality. Grab the oars and pretend you are rowing for the glory and power of Athens! Behold the power of the Athenian oarsman!*

#### **First your rowing lesson:**

Please take a look at the image. Notice the form and positioning of the oars. Here are some key terms so that you understand the motion:

**Catch** - The beginning of the rowing stroke where the oar blade is set in the water.

**Drive** - The part of the stroke where the blade is pulled through the water.

**Finish** - The final part of the stroke where the blade comes out of the water.

**Release** - Pushing down on the handle to raise the blade out of the water at the end of the stroke to begin the recovery.

**Recovery** - The part of the stroke where the rower comes slowly up the slide to return to the catch.

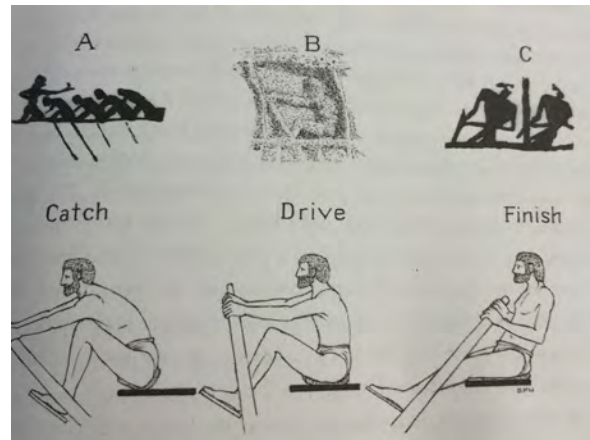
#### **Watch the [Triremes Olympias video](#)**

Please watch from the beginning to about 1:20 minutes. This video documents the construction and sailing of the *Olympias*, a full-scale working replica of the legendary 170-oared Athenian trireme of the 5th century B.C. The ship is the fastest human-powered vessel on the planet. While you watch, pay attention to the movements

#### **Now it's your turn!**

- Sit down all facing the same direction.
- Take an oar and bring it across your lap.
- Follow the motion of catch, drive, finish, release, recovery and remember you need to be in sync. You may even want to play the rowing segment of the video so you can hear the beat! *The Whumff! Whroosh!*

**Reflection:** Now that you have tried it, (without water, chaos of actual battle, and for an entire day) Do you think the oarsman deserve their honored status? Why?



### Triremes of Atlantis

*In one day and night of terror all your fighting men were swallowed up by the earth, just as the island of Atlantis was swallowed up by the sea and disappeared.” -Plato*

According, to Hale and some others; there is no real *Atlantis* but in fact Plato’s story about this lost society is actually Athens. Hale says that Plato, the dominant figure in what some call the Age of Reason. Plato uses his discussions of Atlantis as an allegory (a symbolic tale to teach a lesson) about what he sees as the defining component of Athenian politics and history - sea rule (thalassocracy).

**Read the quotes from Plato and answer the question that follows.**

-Plato says of those great leaders like Themistocles and Pericles, “Yes, they say these men made our great city. They never realize that it is now swollen and infected because of these statesmen of former days, who paid no heed to discipline and justice. Instead, they filled our city with harbors and navy yards and walls and tribute and such-like trash.” (Hale, p. 269)

“They appeared glorious and blessed to those who could not recognize true happiness. Yet at the very same time they were in fact full of greed and unrighteous power.” (Hale, p 275)

**Based on the quotes above and what you know about Athenian history, how does Plato feel about heroes and Athens? Do you think this view is justified? Why or why not (think about the concept of a hero)?**