Education in the Byzantine Empire

Instructions: Today you will be teaching a 2-minute Byzantine-style lesson to your “number group” on one of the following classical Greek subjects: mathematics (Euclidean geometry), literature (Homer), philosophy (Aristotle), history (Herodotus), or rhetoric and logic.

1. Read the passage about your “letter group’s” assigned subject.
2. Discuss the meaning of the text with your “letter group.”
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**Euclidean Geometry**

Euclid, also known as Euclid of Alexandria, was a [Greek mathematician](http://en.wikipedia.org/wiki/Greek_mathematics), often referred to as the "Father of Geometry". He was active in [Alexandria](http://en.wikipedia.org/wiki/Alexandria) during the reign of [Ptolemy I](http://en.wikipedia.org/wiki/Ptolemy_I) (323–283 BC). His [*Elements*](http://en.wikipedia.org/wiki/Euclid%27s_Elements), consisting of 13 books, is one of the most influential works in the [history of mathematics](http://en.wikipedia.org/wiki/History_of_mathematics), serving as the main textbook for teaching [mathematics](http://en.wikipedia.org/wiki/Mathematics) (especially [geometry](http://en.wikipedia.org/wiki/Geometry)) from the time of its publication until the late 19th or early 20th century.

Book 1 contains (a)  the definitions, or explanations of the terms used in the text, (b)  the postulates, which limit the instruments to be used in constructions to the ruler and compass, and (c)  the common notions or axioms, the fundamental principles from which the theorems or propositions are deduced. The axioms are taken as given, and are not provable.

Book 1 opens with a series of definitions. Chose 3 from the following list to explain and demonstrate when you teach your classmates:

1.  A point is that which has no part.

2.  A line is breadthless length.

3.  The extremities of a line are points.

4.  A straight line is a line which lies evenly with the points on itself.

5.  A surface is that which has length and breadth only.

6.  The extremities of a surface are lines.

7.  A plane surface is a surface which lies evenly with the straight lines on itself.

8.  A plane angle is the inclination to one another of two lines in a plane which meet one another and do not lie in a straight line.

9.  And when the lines containing the angle are straight, the angle is called rectilineal.

10.  When a straight line set up on a straight line makes the adjacent angles equal to one another, each of the equal angles is right, and the straight line standing on the other is called a perpendicular to that on which it stands.

11.  An obtuse angle is an angle greater than a right angle.

12.  An acute angle is an angle less than a right angle.

13.  A boundary is that which is an extremity of anything.

14.  A figure is that which is contained by any boundary or boundaries.

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**Rhetoric and Logic**

Rhetoric is an ancient art of public speaking and constructing an argument that has returned to prominence in recent times.  Aristotle, a Greek philosopher who lived in the 4th century BC, defined it as the art of "seeing the available means of persuasion."  Aristotle divides the means of persuasion into "inartistic" means such as the evidence of witnesses or written documents, what we might call "information," and "artistic" means, which he further subdivides into ethos, pathos, and logos.

**Ethos: The Writer's Character or Image**

The Greek word ethos is related to our word ethics or ethical, but a more accurate modern translation might be "image."  Aristotle uses ethos to refer to the presentation of the character of the writer-the writer's trustworthiness, and reliability as conveyed by the writing.  Aristotle says that if we believe that a speaker has "good sense, good moral character, and goodwill," we are inclined to believe what that speaker says to us.

**Logos: Logical Arguments**

In our society, logic and rationality are highly valued and this type of persuasive strategy is usually privileged over appeals to the character of the speaker or to the emotions of the audience.  However, formal logic and scientific reasoning are usually not appropriate for general audiences, so we must rely on a more rhetorical type of reasoning.

For Aristotle, formal arguments are based on what he calls syllogisms.  This is reasoning that takes the form:

* All men are mortal.
* Socrates is a man.
* Therefore, Socrates is mortal.

(Think of your own syllogism to teach your classmates)

**Pathos: The Emotions of the Audience**

Most of us think that we make our decisions based on rational thought.  However, Aristotle points out that emotions such as anger, pity and fear powerfully influence our rational judgments.  Due to this fact, much of our political discourse and much of the advertising we experience is directed toward moving our emotions.

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**Homer’s *The Odyssey***

The *Odyssey* is one of two major ancient [Greek](http://en.wikipedia.org/wiki/Hellenic_civilization) [epic poems](http://en.wikipedia.org/wiki/Epic_poetry) attributed to [Homer](http://en.wikipedia.org/wiki/Homer). It is, in part, a [sequel](http://en.wikipedia.org/wiki/Sequel) to the [*Iliad*](http://en.wikipedia.org/wiki/Iliad), the other work ascribed to Homer. The poem is the second oldest existing work of Western literature, the *Iliad* being the oldest. It is believed to have been composed near the end of the 8th century BC, somewhere in [Ionia](http://en.wikipedia.org/wiki/Ionia), the Greek coastal region of [Anatolia](http://en.wikipedia.org/wiki/Anatolia).

The poem mainly centers on the Greek hero [Odysseus](http://en.wikipedia.org/wiki/Odysseus) (known as [Ulysses](http://en.wiktionary.org/wiki/Ulysses) in [Roman](http://en.wikipedia.org/wiki/Ancient_Rome) myths) and his journey home after the fall of [Troy](http://en.wikipedia.org/wiki/Troy). It takes Odysseus ten years to reach his home [Ithaca](http://en.wikipedia.org/wiki/Ithaca) after the ten-year [Trojan War](http://en.wikipedia.org/wiki/Trojan_War). In his absence, it is assumed he has died, and his wife [Penelope](http://en.wikipedia.org/wiki/Penelope) and son [Telemachus](http://en.wikipedia.org/wiki/Telemachus) must deal with a group of unruly suitors, the *Mnesteres* or [Proci](http://en.wikipedia.org/wiki/Proci), who compete for Penelope's hand in marriage.

The Odyssey opens with the following lines:

*Sing to me of the man, Muse, the man of twists and turns*

*driven time and again off course, once he had plundered*

*the hallowed heights of Troy.*

*Many cities of men he saw and learned their minds,*

*many pains he suffered, heartsick on the open sea,*

*fighting to save his life and bring his comrades home.*

*But he could not save them from disaster, hard as he strove—*

*the recklessness of their own ways destroyed them all,*

*the blind fools, they devoured the cattle of the Sun*

*and the Sungod blotted out the day of their return.*

*Launch out on his story, Muse, daughter of Zeus,*

*start from where you will—sing for our time too.*

When teaching this text to your classmates, consider:

* What imagery does Homer use to start his poem?
* What universal themes are incorporated to draw in the reader/listener?
* How does Homer’s poetic style enhance the meaning of his message?

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**Herodotus’s *The Histories***

Herodotus was an ancient [Greek](http://en.wikipedia.org/wiki/Greeks) [historian](http://en.wikipedia.org/wiki/Historian) who was born in [Halicarnassus](http://en.wikipedia.org/wiki/Halicarnassus), [Caria](http://en.wikipedia.org/wiki/Caria) (modern day [Bodrum](http://en.wikipedia.org/wiki/Bodrum), [Turkey](http://en.wikipedia.org/wiki/Turkey)) and lived in the fifth century BC (c. 484–425 BC). He has been called "[The Father](http://en.wikipedia.org/wiki/List_of_people_known_as_the_father_or_mother_of_something#H) of History,” and was the first historian known to collect his materials systematically, test their accuracy to a certain extent, and arrange them in a well-constructed and vivid narrative. [*The Histories*](http://en.wikipedia.org/wiki/Histories_(Herodotus))—his masterpiece and the only work he is known to have produced—is a record of his investigation of the origins of the [Greco-Persian Wars](http://en.wikipedia.org/wiki/Greco-Persian_Wars) and includes a wealth of geographical and [ethnographical](http://en.wikipedia.org/wiki/Ethnography) information. Although some of his stories were fanciful, he claimed he was reporting only what had been told to him. Little is known of his personal history.

The following are excerpts from Herodotus’s *The Histories*:

“Here are presented the results of the enquiry carried out by Herodotus of Halicarnassus.  The purpose is to prevent the traces of human events from being erased by time, and to preserve the fame of important and remarkable achievements produced by both Greeks and non-Greeks; among the matters covered is, in particular, the cause of the hostilities between Greeks and non-Greeks….

My job, throughout this account, is simply to record whatever I am told by each of my sources.  The Egyptians say that Demeter and Dionysus are the rulers of the underworld kingdom.  The Egyptians were also the first to claim that the soul of a human being is immortal, and that each times the body dies the soul enters another creature just as it is being born.  They also say that when the soul has made the round of every creature on land, in the sea, and in the air, it once more clothes itself in the body of a human being just as it is being born, and that a complete cycle takes three thousand years.  This theory has been adopted by certain Greeks too – some from a long time ago, some more recently – who presented it as if it were their own.  I know their names, but I will not write them down….

The priests also told me that Sesostris divided the country among all the Egyptians, giving each man the same amount of land in the form of a square plot.  This was a source of income for him, because he ordered them to pay an annual tax.  If any of a person’s plot was lost to the river, he would present himself at the king’s court and tell him what had happened; then the king sent inspectors to measure how much land he had lost, so that in the future the man had to pay proportionately less of the fixed tax.  It seems to me that this was how geometry as a land-surveying technique came to be discovered and then imported into Greece.  But the Greeks learned about the sundial, its pointer, and the twelve divisions of the day from the Babylonians.”

When teaching this text to your classmates, consider:

* What is Herodotus’s stated purpose in writing his book?
* What aspects of ancient Egypt does Herodotus describe?
* What comparisons does Herodotus make?
* What/who are Herodotus’s sources of knowledge?

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**Aristotle’s *Nicomachaean Ethics***

Aristotle was a [Greek](http://en.wikipedia.org/wiki/Greeks) [philosopher](http://en.wikipedia.org/wiki/Philosophy) born in [Stagirus](http://en.wikipedia.org/wiki/Stagirus) in 384 BCE. His writings cover many subjects, including [physics](http://en.wikipedia.org/wiki/Physics_(Aristotle)), [metaphysics](http://en.wikipedia.org/wiki/Metaphysics), [poetry](http://en.wikipedia.org/wiki/Poetics_(Aristotle)), [theater](http://en.wikipedia.org/wiki/Theatre), [music](http://en.wikipedia.org/wiki/Music), [logic](http://en.wikipedia.org/wiki/Logic), [rhetoric](http://en.wikipedia.org/wiki/Rhetoric), [linguistics](http://en.wikipedia.org/wiki/Linguistics), [politics](http://en.wikipedia.org/wiki/Politics), [government](http://en.wikipedia.org/wiki/Government), [ethics](http://en.wikipedia.org/wiki/Ethics), [biology](http://en.wikipedia.org/wiki/Biology), and [zoology](http://en.wikipedia.org/wiki/Zoology). The *Nicomachean Ethics* is [Aristotle](http://en.wikipedia.org/wiki/Aristotle)'s best known work on [ethics](http://en.wikipedia.org/wiki/Ethics). The theme of the work is the Socratic question which had previously been explored in [Plato](http://en.wikipedia.org/wiki/Plato)'s works, of how men should best live. The *Nicomachean Ethics* is widely considered one of the most important historical philosophical works, and had an important impact upon the European [Middle Ages](http://en.wikipedia.org/wiki/Middle_Ages), becoming one of the core works of [medieval philosophy](http://en.wikipedia.org/wiki/Medieval_philosophy). It therefore indirectly became critical in the development of all [modern philosophy](http://en.wikipedia.org/wiki/Modern_philosophy) as well as European [law](http://en.wikipedia.org/wiki/Law) and [theology](http://en.wikipedia.org/wiki/Theology).

The following is an excerpt from Aristotle’s *Nicomechean Ethics*:

“Now each man judges well the things he knows, and of these he is a good judge. And so the man who has been educated in a subject is a good judge of that subject, and the man who has received an all-round education is a good judge in general. Hence a young man is not a proper hearer of lectures on political science; for he is inexperienced in the actions that occur in life, but its discussions start from these and are about these; and, further, since he tends to follow his passions, his study will be vain and unprofitable, because the end aimed at is not knowledge but action. And it makes no difference whether he is young in years or youthful in character; the defect does not depend on time, but on his living, and pursuing each successive object, as passion directs. For to such persons, as to the incontinent, knowledge brings no profit; but to those who desire and act in accordance with a rational principle knowledge about such matters will be of great benefit.”

When teaching this passage to your classmates, consider:

* Who does Aristotle say is a “good judge,” and what kind of “judging” is he talking about?
* What character flaw does Aristotle describe in the “young man”?
* According to this passage, how should men “best live”?