



## STUDY KIT 5

**Title:** PRE-SOCRATIC PHILOSOPHERS: THE ORIGIN OF SCIENCE AND PHILOSOPHY

**Topic:** Nature, Philosophy, Science, Society

**Keywords:** Ancient Greek world, Nature, Philosophy, Science, Mathematics, Astronomy, Cosmology, Cosmography, Cosmo centric, Homocentric/ Anthropocentric, Politics, Ethics

**Subject:** Social Studies, History, English, Philosophy

**Cross-curricular Topic:** Cultural Heritage, English as a Foreign Language

**Level:** UPPER SECONDARY

**Age:**15+

**Number of students:** 30

**Duration in minutes:** 60

**Place (classroom, outdoor etc.):** classroom

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**School:** RALLEIO GENIKO LYKEIO THILEON PEIRAIA

**Language:**ENGLISH

### Overview:

Participants will work in multinational groups of four in the school computer lab. They will be introduced to the basic concept by a ppt, play a Kahoot game on facts about Natural Philosophers and discuss philosophical issues inspired by philosophical quotes given on cue cards.

### Objectives:

- To provide a historical framework of the origins of science and technology
- To involve students in discussing philosophical matters within the framework of today's reality
- To enhance students' ability to make generalizations, inferences, connections
- To enhance students' critical thinking skills
- To allow students to practice their language skills in English

**Learning material and tools:**

- From the Greek Gods to Philosophy (Annex 1)
- Kahoot Game (Annex 2)
- Philosophy Quotes cue cards (Annex 3)

**Preparation:**

- All students need to have studied the Study Material (Annexes 1 & 2) beforehand

**Evaluation:**

- Answers in Activity 1
- Answers in the Kahoot Game
- Presentation of the groups' conclusions after the philosophical discussion activity
- Teachers of each nationality monitor their students and write a descriptive evaluation of each

**Extra material:**

- Study Material (Annexes 1 & 4)

**Detailed description/instruction:**

- Students are divided in multinational groups of 4 and appoint one student as the "secretary" of the group
- They do Activity 1 and check their answers with key ppt
- They play the kahoot game and the winning group is announced
- Philosophy Quotes cue cards are handed out to groups
- Students' groups discuss on the quotes and "secretaries" take notes
- Groups are given time to prepare a mini presentation on the conclusions of their discussion
- Each group present their conclusions to the class



## STUDENTS' WORKSHEET

| NAME | NATIONALITY |
|------|-------------|
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |

### Activity 1: Write the following words in the right box

reason, wisdom, intelligence, grain, agriculture, harvest, growth, and nourishment, Queen of the gods, marriage, women, childbirth, heirs, hearth, home, chastity, King of the gods, ruler of Mount Olympus, god of the sky, weather, justice, war, bloodshed, violence, floods, droughts, earthquakes travel, communication, trade, language, writing, fire, metalworking, crafts, music, arts, knowledge, healing, prophecy, poetry, manly beauty, archery, sea, rivers, beauty, love, desire, pleasure, virginity, hunting, wilderness, animals, young girls, childbirth, skill, peace, warfare, battle, strategy, thunder, lightning, law, order,

|             |  |
|-------------|--|
| 1. ZEUS     |  |
| 2. POSEIDON |  |
| 3. HERMES   |  |



|               |  |
|---------------|--|
| 4. POSEIDON   |  |
| 5. HEPHAESTUS |  |
| 6. ARES       |  |
| 1. HERA       |  |
| 2. ATHENA     |  |
| 3. ARTEMIS    |  |
| 4. APHRODITE  |  |
| 5. DEMETRA    |  |
| 6. HESTIA     |  |



### **Activity 2: KAHOOT GAME**

<https://create.kahoot.it/details/pre-socratic-philosophy/e3b74bc3-6ea8-41b9-975c-758a43006add>

### **Activity 3: PHILOSOPHY QUOTES CUE CARDS**

#### **ΗΡΑΚΛΕΙΤΟΣ HERACLITUS**

##### **1. ΡΕΥΣΤΟΤΗΤΑ FLUX**

πάντα χωρεῖ καὶ οὐδὲν μένει

**Everything changes and nothing stands still.**

##### **2. ΕΝΟΤΗΤΑ ΑΝΤΙΘΕΤΩΝ ΔΙΑΛΕΚΤΙΚΗ UNITY OF THE OPPOSITES DIALECTICS**

Πόλεμος πάντων μὲν πατήρ ἐστι πάντων δὲ βασιλεύς, καὶ τοὺς μὲν θεοὺς ἔδειξε τοὺς δὲ ἀνθρώπους, τοὺς μὲν δούλους ἐποίησε τοὺς δὲ ἐλευθέρους.

**War is the father and king of all: some he has made gods, and some men; some slaves and some free.**

#### **ΑΡΙΣΤΟΤΕΛΗΣ ARISTOTLE**

##### **1. ΠΟΛΙΤΙΚΗ POLITICS**

ὁ ἄνθρωπος φύσει πολιτικὸν ζῷον

**Man is by nature a political animal.**

##### **2. ΜΕΣΟΤΗΤΑ MESOTIS**

μέτρον ἄριστον.

**Moderation is best**



## **ΠΡΩΤΑΓΟΡΑΣ PROTAGORAS**

ΣΧΕΤΙΚΙΣΜΟΣ RELATIVISM

Πάντων χρημάτων μέτρον άνθρωπος

**Man is the measure of all things**

## **ΣΩΚΡΑΤΗΣ SOCRATES**

ΑΥΤΟΓΝΩΣΙΑ SELF KNOWLEDGE

ὁ δὲ ἀνεξέταστος βίος οὐ βιωτὸς ἀνθρώπῳ

**the unexamined life is not worth living**

ἔν οἶδα, ὅτι οὐδέν οἶδα

the only thing I know is that I know nothing

## **ΣΟΦΟΚΛΗΣ SOPHOCLES**

1. ΕΡΩΣ ΩΣ ΚΙΝΗΤΗΡΙΟΣ ΔΥΝΑΜΗ  
EROS AS A MOTIVATIONAL FORCE

Ἔρωσ ἀνίκατε μάχαν

**Love conquers all**

2. ΑΓΑΠΗ ΠΡΟΣ ΤΟΝ ΠΛΗΣΙΟΝ  
LOVE THY NEIGHBOUR

οὔτοι συνέχθειν, ἀλλὰ συμφιλεῖν ἔφυν

**I was not born to hate, I was born to love**

## **MENANDROS MENANDROS**

ΤΕΛΕΙΩΣΗ ΤΗΣ ΑΝΘΡΩΠΙΝΗΣ ΦΥΣΗΣ



## FULFILMENT OF THE HUMAN NATURE

Ὡς χαρίεν ἄνθρωπος, ὅταν ἄνθρωπος ᾖ.

**Man is graceful when he is a man.**

### **ANNEX 1: STUDY MATERIAL**

#### **THE PRE-SOCRATIC PHILOSOPHERS OR NATURAL PHILOSOPERS**

Pre-Socratic philosophy is the first stage in the evolution of Greek philosophy. It is called Pre-Socratic because the first philosophers lived before Socrates (470/69-399 BC). Before that time ancient Greeks attributed the natural phenomena and human nature attributes to their twelve gods.

##### THE GODS

- ZEUS King of the gods, ruler of Mount Olympus, and god of the sky, weather, thunder, lightning, law, order, and justice
- HERMES God of boundaries, travel, communication, trade, language, and writing.
- HEPHAESTUS God of fire, metalworking, and crafts
- ARES God of war, bloodshed, and violence.
- APOLLO God of music, arts, knowledge, healing, plague, prophecy, poetry, manly beauty, and archery
- POSEIDON God of the sea, rivers, floods, droughts, and earthquakes.

##### THE GODDESSES

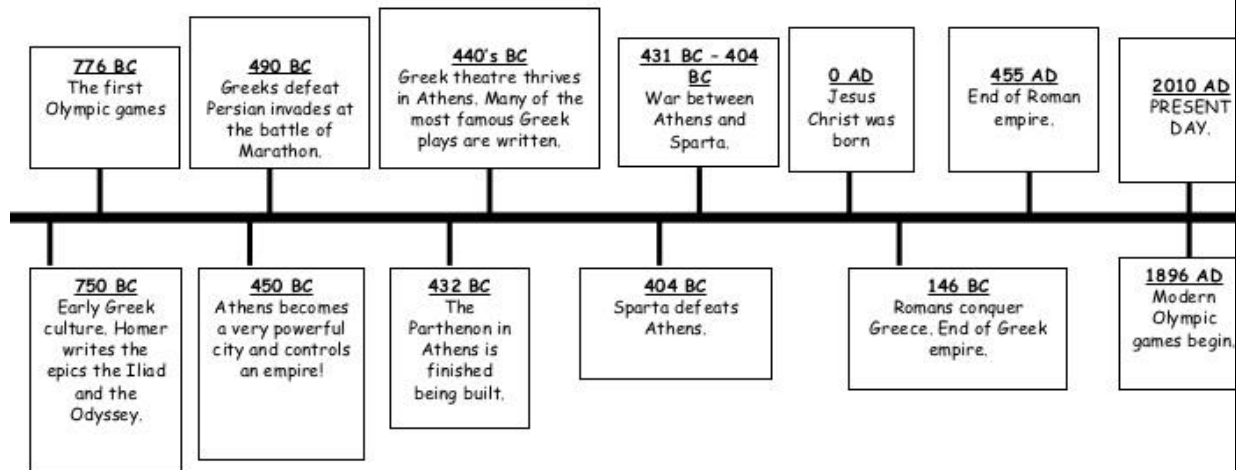
- APHRODITE Goddess of beauty, love, desire, and pleasure
- ARTEMIS Virgin goddess of the hunt, wilderness, animals, young girls, childbirth, and plague.
- ATHENA Goddess of reason, wisdom, intelligence, skill, peace, warfare, battle strategy, and handicrafts

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- DEMETER Goddess of grain, agriculture, harvest, growth, and nourishment.
- HERA Queen of the gods, and goddess of marriage, women, childbirth, heirs, kings, and empires
- HESTIA Virgin goddess of the hearth, home, and chastity

## Greek timeline



This timeline shows some key events that happened in Ancient Greece.

BC- Before Christ

AD- Anno Domini (After Christ)

### The Pre-Socratic Philosophers or Natural Philosophers

#### 1 Pre-Socratic philosophy

Pre-Socratic philosophy is the first stage in the evolution of Greek philosophy. It is called Pre-Socratic because the first philosophers lived before Socrates (470/69-399 BC). Pre-Socratic philosophy was born in the Greek colonies of Asia Minor (Miletus, Ephesus and Colophon) because there was



advanced economy, social and civil liberties as well as communication among various civilisations and peoples. It was first developed in the 6<sup>th</sup> and 5<sup>th</sup> centuries BC in the Greek city states of Asia Minor and later on in Sicily and Magna Grecia in Italy, in the Greek island-city-states and in Athens.



Pre-Socratic philosophers are considered to be the first cosmologists and physiologists because they tried to understand and interpret the world and nature using logic, without referring to myths, religion, authority or tradition. The issues of divinity and traditional theology were also dealt with by the Pre-Socratic philosophers who commented on the traditional beliefs and the religious behaviour of people as well as on issues of political and social reality.

## 2. The Pre-Socratic philosophers

They combined philosophy with science in an effort to find the truth and acquire knowledge about the origin and/or the essence of the world. They were poets, legislators, politicians but mainly scientists as they dealt with astronomy, geometry, mathematics, theoretical mechanics and medicine. They also taught rhetoric and philosophy and encouraged their students to discuss and to doubt in order to develop their own ideas through critical thinking. They were distinguished for their wisdom (Sophia) with the meaning that the word carried in the 6<sup>th</sup> century BC when science flourished in Greece, when the “wise” did not deal with only arts and politics but with science as well such as geometry, mathematics, astronomy and medicine. The most important Pre-Socratic philosophers in the 6<sup>th</sup> century BC were Thales, Anaximander, Anaximenes, Xenophanes and Pythagoras, who mainly dealt with the origin of the world. The Pre-Socratic philosophers of the 5<sup>th</sup> century BC were Parmenides, Zeno, Heraclitus, Empedocles, Anaxagoras, Leucippus and Democritus, who mainly dealt with the structure of the world.

## 3 The questions that the Pre-Socratic philosophers posed



They dealt with cosmological issues searching in nature for the forces that nature is made of aiming to find the initial cause, essence or beginning of the world as well as the structure or the form of the world. They also tried to explain logically the essence and the structure of the world. Although they drew on prior poets and thinkers, such as Homer and Hesiod, and on older cosmologies and cosmogonies, they saw the world as an entity comprising of perceived and distinct things which derives from one first principle or one set of principles. Their explanations of the world were based on observation and on logical methods such as analogy, analogy and induction. They contributed in the investigation of nature and in the understanding of the world and many of the questions that they posed are still the subject of inquiry by many contemporary scientists, philosophers and artists.

They also dealt with questions regarding knowledge, society, ethics and politics. Additionally, they compared the structure of nature with the structure of their society and its political organisation. The concepts of virtue, prudence, wisdom, justice, democracy and law were their object of analysis, as well as the concepts of matter, infinity, power, number, motion and its transformation, «γίγνεσθαι» (the process of eternal fluctuation and transformation of everything) and of «εἶναι» (being, which is immobile and eternal). The Pre-Socratic philosophers were particularly interested in «Ἄνθρωπος» (the human being) and supported the value of moral principles. They established the model of the thinking, prudent human being. Their philosophy is considered cosmocentric (focusing on the world) as opposed to the philosophy of Socrates, and the other philosophers of the Socratic age that followed, which was homocentric (focusing on human beings).

#### **4. The importance of pre-Socratic philosophy today**

Pre-Socratic philosophy is regarded as the source of the philosophical and scientific spirit which was developed later. The Pre-Socratic philosophers hold a special place in history and the interpretation of their texts is still an object of study by philosophers and scientists.

“Philosophy starts with Thales, dated back in 585 BC, when he predicted a Sun eclipse. Philosophy and Science, who were not separate at that time, were born with him, in the 6th century BC”. [B. Russell, A History of Western Philosophy (1945)].

<https://plato.stanford.edu/entries/presocratics/>



**KEY TO ACTIVITY 1 (COULD BE TURNED IN PPT FORM)**



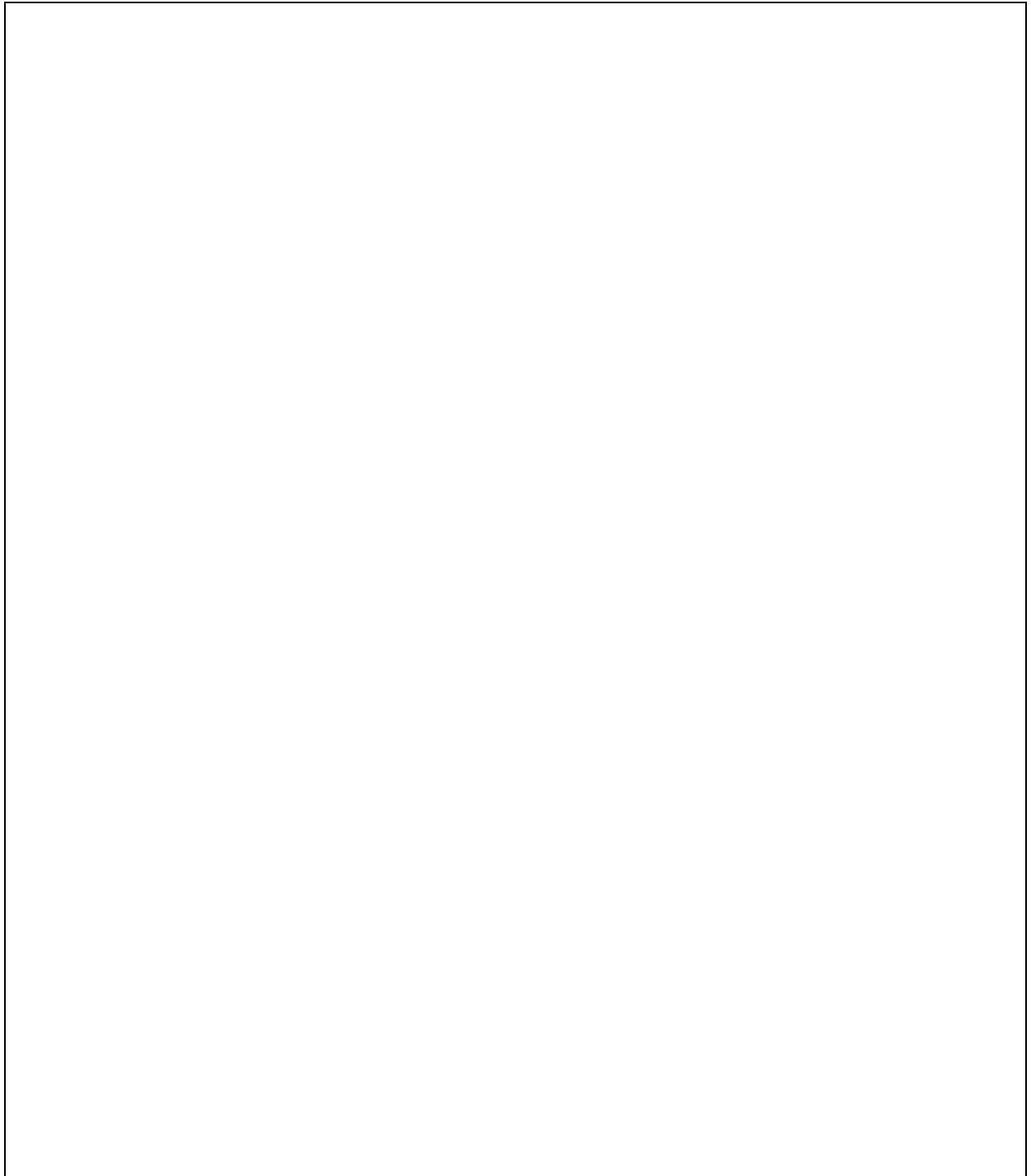
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