

## tpo\_37\_passage\_1

While many other observers and thinkers had laid the groundwork for science, Thales (circa 624 B.C.E.-ca 547 B.C.E.), the best known of the earliest Greek philosophers, made the first steps toward a new, more objective approach to finding out about the world. He posed a very basic question: "What is the world made of?" Many others had asked the same question before him, but Thales based his answer strictly on what he had observed and what he could reason out-not on imaginative stories about the gods or the supernatural. He proposed water as the single substance from which everything in the world was made and developed a model of the universe with Earth as a flat disk floating in water. Like most of the great Greek philosophers, Thales had an influence on others around him. His two best-known followers, though there were undoubtedly others who attained less renown, were Anaximander and Anaximenes. Both were also from Miletus (located on the southern coast of present-day Turkey) and so, like Thales, were members of the Milesian School. Much more is known about Anaximander than about Anaximenes, probably because Anaximander, who was born sometime around 610 BCE, ambitiously attempted to write a comprehensive history of the universe. As would later happen between another teacher-student pair of philosophers, Plato and Aristotle, Anaximander disagreed with his teacher despite his respect for him. He doubted that the world and all its contents could be made of water and proposed instead a formless and unobservable substance he called "apeiron" that was the source of all matter. Anaximander's most important contributions, though, were in other areas. Although he did not accept that water was the prime element, he did believe that all life originated in the sea, and he was thus one of the first to conceive of this important idea. Anaximander is credited with drawing up the first world map of the Greeks and also with recognizing that Earth's surface was curved. He believed, though, that the shape of Earth was that of a cylinder rather than the sphere that later Greek philosophers would conjecture. Anaximander, observing the motions of the heavens around the polestar, was probably the first of the Greek philosophers to picture the sky as a sphere completely surrounding Earth-an idea that, elaborated upon later, would prevail until the advent of the Scientific Revolution in the seventeenth century. Unfortunately, most of Anaximander's written history of the universe was lost, and only a few fragments survive today. Little is known about his other ideas. Unfortunately, too, most of the written work of Anaximenes, who may have been Anaximander's pupil, has also been lost. All we can say for certain about Anaximenes, who was probably born around 560 BCE, is that following in the tradition of Anaximander, he also disagreed with his mentor. The world, according to Anaximenes, was not composed of either water or apeiron, but air itself was the fundamental element of the universe. Compressed, it became water and earth, and when rarefied or thinned out, it heated up to become fire. Anaximenes may have also been the first to study rainbows and speculate upon their natural rather than supernatural cause. With the door opened by Thales and the other early philosophers of Miletus, Greek thinkers began to speculate about the nature of the universe. This exciting burst of intellectual activity was for the most part purely creative. The Greeks, from Thales to Plato and Aristotle, were philosophers and not scientists in today's sense. It is possible for anyone to create "ideas" about the nature and structure of the universe, for instance, and many times these ideas can be so consistent and elaborately structured, or just so apparently obvious, that they can be persuasive to many people. A scientific theory about the universe, however, demands much

more than the various observations and analogies that were woven together to form systems of reasoning, carefully constructed as they were, that would eventually culminate in Aristotle's model of the world and the universe. Without experimentation and objective, critical testing of their theories, the best these thinkers could hope to achieve was some internally consistent speculation that covered all the bases and satisfied the demands of reason.

#### question 1

Why does the author discuss the question "What is the world made of?" posed by Thales?

- A To help explain how Thales differed from earlier Greek thinkers
- B To trace the origin of the question through ancient history
- C To emphasize that the answer to the question proposed by Thales was the first correct solution
- D To suggest why the question remained unanswered for so long

#### question 2

Paragraph 2 implies which of the following about Thales?

- A His students tended to closely follow his views.
- B He was born sometime around 600 BCE.
- C Little is known about most of his followers.
- D His influence was largely limited to the town of Miletus.

#### question 3

The highlighted word "him" in paragraph 2 refers to

- A Thales
- B Anaximander
- C Anaximenes
- D Plato

question 4

According to paragraph 3, some Greek philosophers who came after Anaximander did not share his belief that

- A the world was made of something other than water
- B all life originated in the sea
- C the sky was a sphere surrounding Earth
- D Earth was cylindrical in shape

question 5

Why does the author refer to "the Scientific Revolution in the seventeenth century" ?

- A To identify the time when Anaximander' s theory was first considered seriously
- B To introduce the evidence that helped to develop Anaximander' s ideas
- C To indicate how long one of Anaximander' s ideas remained influential
- D To give an example of the many unsuccessful attempts to discredit Anaximander' s ideas

question 6

Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

- A Like Anaximander, Anaximenes disagreed with his mentor.
- B Traditionally, philosophers born after Anaximenes tended to disagree with their own mentors.
- C Historians have been able to determine that Anaximenes was born in 560 B.C.E. and that he followed in the tradition of Anaximander.

D Even though Anaximenes was Anaximander's follower, he disagreed with his mentor.

question 7

According to paragraph 4, Anaximenes believed that

A when water was heated up, it became apeiron

B Earth was made of compressed air

C the heat from a fire caused the air to become thinner

D rainbows had both natural and supernatural causes

question 8

Paragraph 5 suggests that, in speculating about the nature of the universe, Milesian thinkers

A made careful use of reasoning

B studied the universe scientifically

C tested their theories critically

D kept their theories simple

question 9

Look at the four squares [ ] that indicate where the following sentence could be added to the passage.

While many other observers and thinkers had laid the groundwork for science, Thales (circa 624 B.C.E.-ca 547 B.C.E.), the best known of the earliest Greek philosophers, made the first steps toward a new, more objective approach to finding out about the world. He posed a very basic question: "What is the world made of?" Many others had asked the same question before him, but Thales based his answer strictly on what he had observed and what he could reason out-not on imaginative stories about the gods or the supernatural. He proposed water as the single substance from which everything in the world was made and

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question 10

Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. This question is worth 2 points.

- A. In the Milesian School established by Thales, teachers taught what they knew to their followers, who were then strongly encouraged to correct any errors in reasoning.
- B. Among early Greek philosophers, there was sharp disagreement even between teachers and students about the essential substance from which the world was made.
- C. Much of the written work of Anaximander and of Anaximenes has been lost, including a major work on the history of the universe by Anaximenes.
- D. Anaximander's work covered a broad range of issues that influenced later Greek thinkers, including the origin of life, the history of the universe, and the shape of both Earth and the sky.
- E. The ideas about astronomy held by members of the Milesian School continued to be widely

accepted by scientists even after the Scientific Revolution in the seventeenth century.

- F. While Greek philosophers' theories about the world did not rely on appeals to supernatural forces, they also were not scientific, since they were not tested with experiments.