Clara Science Academy

Parent/Student Homework Signature

SUBJECT:
HISTORY

Student Name:

Due: Friday, the 14th of November, 2025

Homework:

Students are required to complete the following Study Guide for The Dawn of Science by Friday, November 14, 2025.

Parent Signature	Grade	Date

The Dawn of Science: A Review Study Guide (650 BCE - 1450 CE)

This guide covers the major contributions of key figures from the ancient world and the Middle Ages. Read each paragraph, fill in the numbered blanks with the corresponding term from the **Answer Choices** section below each entry.

1. Thales of Miletus (c. 624 – c. 546 BCE)

Thales of Miletus is often credited as the first Western philosopher, shifting thought from mythological explanations to **(1)**_____. He was a pioneer in using **(2)**_____ to understand the world. Thales is famously associated with geometry, known for Thales's Theorem, and he allegedly predicted a **(3)**_____ in 585 BCE. His innovative use of mathematics was demonstrated by a legendary story where he calculated the height of the Great Pyramid of Giza by measuring its **(4)**_____.

Answer Choices

1.

A. religious doctrine	B. rational inquiry	C. political theory

2.

A. inductive guesswork	B. deductive reasoning	C. mythological stories

3.

A. lunar eclipse	B. comet sighting	C. solar eclipse

4.

A. peak	B. perimeter	C. shadow

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2. Aristotle (384 – 322 BCE)

Aristotle was a student of Plato at the **(5)**_____ in Athens and later tutored **(6)**_____. After his return to Athens, he founded his own school, the **(7)**_____. His philosophy emphasized empirical observation. He is famous for establishing the principles of **(8)**_____ and for his vast contributions to biology, where he created one of the first known classifications of living things.

Answer Choices

5.

A. Stoa	B. Academy	C. Museum

6.

A. Philip II	B. Alexander the Great	C. King Hiero II

7.

A. Stoa	B. Academy	C. Lyceum

8.

A. empirical evidence	B. formal logic	C. natural history

3. Archimedes (c. 287 – c. 212 BCE)

Archimedes was a Greek mathematician, physicist, and engineer from **(9)**_____. He is best known for the **(10)**_____, which explains buoyancy and fluid displacement. He also developed the **(11)**_____ for lifting water. During the siege of Syracuse, he devised innovative **(12)**_____, including reflective mirrors and large claw-like devices used to overturn Roman vessels.

Answer Choices

9.

A. Athens	B. Syracuse	C. Pergamon

10.

A. Pythagorean Theorem	B. Heron's Formula	C. Archimedes Principle

11.

A. water wheel	B. Archimedes Screw	C. catapult

12.

A. agricultural tools	B. war machines	C. transportation systems

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4. Zhang Heng (78 – 139 CE)

Zhang Heng was a Han dynasty polymath who excelled in astronomy, mathematics, and mechanical engineering. He served as Chief Astronomer, creating a detailed star map and improving the **(13)**_____ to track celestial movements. His most famous invention was the **(14)**_____, the world's first instrument capable of detecting the direction of distant **(15)**_____ by releasing a ball from a dragon's mouth into a toad's mouth upon detection.

Answer Choices

13.

A. astrolabe	B. armillary sphere	C. sundial

14.

A. steam engine	B. seismoscope	C. water clock

15.

A. planetary shifts	B. earthquakes	C. weather changes

5. Galen (c. 130 – c. 216 CE)

Galen was a Greek physician and philosopher who practiced extensively throughout the **(16)**_____. He championed the **(17)**_____ and emphasized the importance of **(18)**_____ (though primarily on animals). Much of his anatomical knowledge was based on dissections of animals, primarily **(19)**_____, leading to some inaccuracies in his descriptions of human structure.

Answer Choices

16.

A. Greek City-States	B. Persian Empire	C. Roman Empire

17.

A. germ theory	B. theory of the four humors	C. cellular theory

18.

A. pharmacology	B. dissection	C. bloodletting

19.

A. rabbits and dogs	B. pigs and primates	C. cattle and horses

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6. Hypatia (c. 370 – 415 CE)

Hypatia was a prominent female philosopher, astronomer, and mathematician who lived in **(20)_____**. She was the head of the **(21)_____** school. Her specific contributions include editing and commenting on complex mathematical texts, such as **(22)_____** and **(23)_____**. She represents one of the last great thinkers of the Hellenistic tradition.

Answer Choices

20.

A. Rome, Italy	B. Alexandria, Egypt	C. Antioch, Syria

21.

A. Stoic	B. Peripatetic	C. Neoplatonist

22.

A. Physica	B. Ptolemy's Almagest	C. Kitāb al-Manāẓir

23.

A. Almagest	B. Euclid's Elements	C. The Compendious Book

7. Al-Khwarizmi (c. 780 – c. 850 CE)

Al-Khwarizmi was a Persian polymath who worked at the **(24)_____** in **(25)_____** during the Islamic Golden Age. He is considered the father of **(26)_____**, a term derived from the Arabic *al-jabr*. Additionally, his work introduced the **(27)_____** and the concept of zero to the Western world. The modern term **(28)_____** is a corruption of his name.

Answer Choices

24.

A. Great Library	B. House of Wisdom	C. Royal Academy

25.

A. Cairo	B. Basra	C. Baghdad

26.

A. geometry	B. algebra	C. calculus

27.

A. Roman numeral system	B. decimal place-value system	C. binary code

28.

A. formula	B. axiom	C. algorithm

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8. Al-Hazen (c. 965 – c. 1040 CE)

Ibn al-Haytham (Al-Hazen) was a pioneer in **(29)_____** and the **(30)_____**, insisting that theories must be tested by experiments. He famously overturned the Greek theory of vision by correctly proving that **(31)_____**. His major work detailing this new theory was the **(32)_____**. He also provided the earliest clear description of the **(33)_____**, which helped demonstrate that light travels in straight lines.

Answer Choices

29.

A. pharmacology	B. optics	C. acoustics

30.

A. philosophical debate	B. scientific method	C. mythological inquiry

31.

A. light is generated by the eye	B. light travels from an external source, reflects off an object, and then enters the eye	C. vision is caused by sound waves

32.

A. Euclid's Elements	B. Kitāb al-Manāẓir	C. Ordo Virtutum

33.

A. telescope	B. microscope	C. camera obscura

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9. Hildegard of Bingen (1098 – 1179 CE)

Hildegard of Bingen was a German Benedictine **(34)**_____ whose influence spanned theology, music, and medicine. She documented profound spiritual **(35)**_____ with the encouragement of Pope Eugenius III. Her scientific contributions include two major books: **(36)**_____, an extensive work on **(37)**_____ (plants, animals, metals), and ***(38)***_____, which focused on the human body and disease. She was also a prolific **(39)**_____, writing the famous morality play, **(40)**_____.

Answer Choices

34.
A. nun B. abbess C. priest

35.
A. dreams B. hypotheses C. visions

36.
A. Scivias B. Physica C. Compendium

37.
A. astronomy B. natural history C. formal logic

38.
A. Scivias B. Causae et Curae C. Almagest

39.
A. painter B. composer C. sculptor

40.
A. The Four Humors B. Ordo Virtutum C. Elements

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