1  □  Plato, Aristotle, and the Order of Things

2  □  The Pre-Socratics
   ▪ Ionians
   ▪ Pythagoreans
   ▪ Atomists
      o Provided first basic outlines of the core concerns of science
      o Demonstrated the range of possible approaches

3  □  Athenian Science
   ▪ The first time we have substantial written records
   ▪ The creation of the first sustained “schools” of philosophy
   ▪ Shaped the subsequent path of science (“natural philosophy”) for about 2000 years

4  □  Plato
   ▪ Philosopher
   ▪ Interesting in "knowing"
   ▪ Concerned with the soul and goodness
   ▪ Rejects concern with origins or nature of the world
      o This is from Socrates

5  □  Plato
   ▪ Design the central concept
   ▪ Perfection characterizes the design of the world
      ◆ Perfect motions, perfect forms in the heavens
      ◆ The earth is corrupted

6  □  Aristotle
   ▪ Most influential of all Greek philosophers
   ▪ Pupil of Plato
   ▪ Observer of Nature

7  □  Master of Logic and Argument: The Syllogism
   ▪ Premise: Humans are mortal
      ➢ A general rule about the world that most people will have no trouble agreeing with.
   ▪ Observation: Socrates is human
      ➢ A specific instance that is readily confirmed by the senses.
   ▪ Conclusion: Socrates is mortal

8  □  BUT--the bad syllogism:
   ▪ Premise: Your dog had puppies
   ▪ Observation: Your dog is a mother
Conclusion: Your dog is your mother

9. Observer of Nature
   - Classification of species
   - Important correlations
   - Embryology
   - Hierarchy of Nature
     - Plants [vegetative soul]
     - Animals [animal soul]
     - Humans [rational soul]

10. The causes of things
    - Material
      - What something is made of
    - Formal
      - The design or form of something
    - Efficient
      - The maker of something
    - Final
      - The purpose of something

11. Causes--applied to a pot
    - Material
      - Clay
    - Formal
      - Design of the pot
    - Efficient
      - The potter
    - Final
      - The purpose (wine, water, etc.)

12. Two distinct realms of heaven and earth
    - Heaven: Perfect and Unchanging
    - Earth: Imperfect and Ever-changing

13. Realms of the World

14. The Problem of Natural Motion
    - Why does something fall?
      - “gravity”
    - What is “gravity”
      - “the tendency of heavy bodies to fall to earth”

15. The problem of non-natural motion
    - Why does something move before falling to earth?
“displacement” and “horror vacui”
  • Is this a “good” answer?

16 ☐ Aristotle’s Universe

17 ☒ The Model of Eudoxus

18 ☐ The Aristotelian Universe
  ▪ Earth surrounded by moon, sun, five planets, the ‘fixed’ stars
  ▪ Since there could be no vacuum, especially in the perfection of space, all these are situated in crystalline spheres
  ▪ Very complicated motions required to make these fit known observations

19 ☐ Question:
  ▪ Which philosopher’s point of view more resembles modern science, Plato’s or Aristotle’s? Why?