

## Aristotle on Science

**Science** (*episteme*): an axiomatic system, where necessary first principles lead by deductive inference to all the truths of the discipline (*Posterior Analytics*, I.6)

**Logic**: the study of “verbal reasoning.” Logic itself is not a science, but precedes the sciences, and consists of six works of Aristotle’s that came to be called the *Organon*:

*Categories* (discusses the different kinds of predicates [*kategoria*]).

*On Interpretation*, (discusses the nature and structure of simple propositions, truth, and modality).

*Prior Analytics* (discusses the syllogism).

*Posterior Analytics* (discusses the nature of axioms, and of axiomatized science in general).

*Topics* (discusses predicables, as well as rules for effective arguments and debate).

*On Sophistical Refutations* (discusses various forms of arguments and fallacies) — this was often given as an appendix to the *Topics*. Also, Aristotle’s *Rhetoric* makes explicit use of the *Topics*.

Whether logic counted as part of philosophy (or the sciences) was disputed. The Stoics viewed it as the first of three parts of science, while the Peripatetics viewed it as a tool of science.

### THEORETICAL SCIENCES: CONCERNED WITH TRUTH ALONE

**Theology**: the study of “changeless objects” (which are therefore divine). As such it is the “first science” or primary philosophy. (Book 8 of the *Physics* argues for an “unmoved mover”.)

**Metaphysics**: the study of being *qua* being. [*Metaphysics*]

### Mathematics:

**Arithmetic** [*Metaphysics*, Bks. 13-14].

### Geometry

**Astronomy** (this is most akin to philosophy because it deals with a substance which is sensible yet eternal, while arithmetic and geometry do not deal with any substance [*Metaphysics*, Bk. 12; *De caelo*: on the structure of the heavens, the earth, the elements]).

**Natural science** (*physike*): the objects of natural science have two characteristics: (a) they are capable of change or motion, and (2) they exist “separately” or in their own right.

**Physics** [*Physica*: scientific explanation, change, motion, void, time, chance, etc.; *De generatione et corruptione*: an account of different kinds of change]

**Meteorology** [*Meteorologia*: on the origin of comets, the causes of weather, etc.]

**Zoology** [*Historia animalium*, *De partibus animalium*, *De generatione animalium*].

### Botany

**Psychology** [*De anima*: explains faculties, senses, mind, imagination; *Parva naturalia*: short treatises on psychological subjects].

### PRACTICAL SCIENCES: CONCERNED WITH HUMAN ACTION

**Ethics** [*Nicomachean Ethics*; *Eudemian Ethics*; *Magna Moralia*].

**Politics** [*Politics*].

### PRODUCTIVE SCIENCES: CONCERNED WITH THE MAKING OF THINGS

Art, rhetoric, poetry, cosmetics, farming, engineering, etc. [*Rhetoric*, *Poetics*].