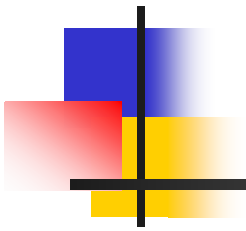


# The Foundation of Science From A to D





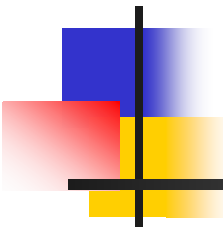
# Aristotle

~384–322 BCE

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*Scalae Natura* [Great Chain of Being]—All forms of life on this planet can be ranked in order

- 1—Gods & Demi-Gods
- 2—Human Males
- 3—Elephants, Dolphins
- 4—Human Females
- 5—most other forms of life
- ...—earthworms



# Titus Lucretius Carus

## 99BCE–~55CE

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- *De Rerum Natura* [On the Nature of Things]
- Book IV talks about the concept of change

# Ptolomy

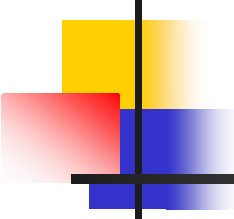
900 CE – 168 CE

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- ~200 *Almagest*
- The geocentric universe
- Became church doctrine & therefore not challengeable

# Nicholas Copernicus

1473–1543



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- 1543–*On the Revolutions of the Celestial Spheres*
- published just before his death
- the defining work of the scientific revolution [heliocentric model of the universe]



# Francis Bacon

1561–1626

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- Introduced the precursor of the scientific method
- Laid down systematic rules for observation & the collection of data

# Galileo Galilei

1564–1642

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- 1610—*Starry Messenger*
- 1632—*Dialogue Concerning the Two Chief Systems*
- 1633—trial, conviction & house imprisonment for heresy [quote? upon sentencing “and yet it moves”]
- 1634—*Two Sciences*



# Archbishop Ussher

1581–1656



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- 1650–calculated the creation by biblical generational counting back to 4004 BCE

# John Lightfoot

1602–1675

- Vice-Chancellor of Cambridge
- 1667 added 9am, October 23<sup>rd</sup> [opening day of Cambridge that year]
- “If it’s good enough for Cambridge, it’s good enough for God”

# Robert Hooke

1635–1703

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- discover of cell theory
- grasped the idea of fossils representing extinct organisms brought about by changes in the earth

# Isaac Newton

1643–1747

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- series of discoveries in the physical sciences thru observation, hypothesis building & experimentation [gravity, motion, optics, *etc.*]
- started a flood of science observation & discovery

# *Carolus Linnaeus*

1707–1778

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- Father of Modern Taxonomy but ...
- Still believed in fixity of nature



# Comte de Buffon

1707–1788

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- Earth older than 6k years
- Was not an evolutionist, yet ...
- Father of Evolutionism
- Discussed evolutionary problems that had not been raised by anybody else
- Brought them to the attention of the scientific world.

# Erasmus Darwin

1731–1802

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- 1769 *Zoonomia* or *The Laws of Organic Life*—life originated by God but then gradual change from one species to another
- integrated approach by observing domestic animals, wildlife & comparative anatomy to arrive at conclusions
- “Darwinism” first referred to his work not his grandson Charles

# James Hutton

1726–1797

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- Father of modern geology
- Principle of Uniformitarianism
- Principle of Superposition
- *Theory of the Earth* 1788
- "The result, therefore, of our present enquiry is, that we find no vestige of a beginning, yet no prospect of an end."



# Jean-Baptiste Lamarck

1744–1829

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- was a evolutionist
- Principle of Inheritance of Acquired Characteristics
- was **WRONG!!**



# Georges Cuvier

1769–1832

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- Established extinction as a fact
- Major proponent of catastrophism
- Opposed the work of Lamarck



# Charles Lyell

1797–1875

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- *Principles of Geology* 1830
- Earth was shaped by slow–moving forces still in operation today

# Charles Darwin

## 1809–1882

- 1832–1836 voyage on H.M.S. Beagle



- 1859 *On the Origin of Species*
- 1871 *The Descent of Man*