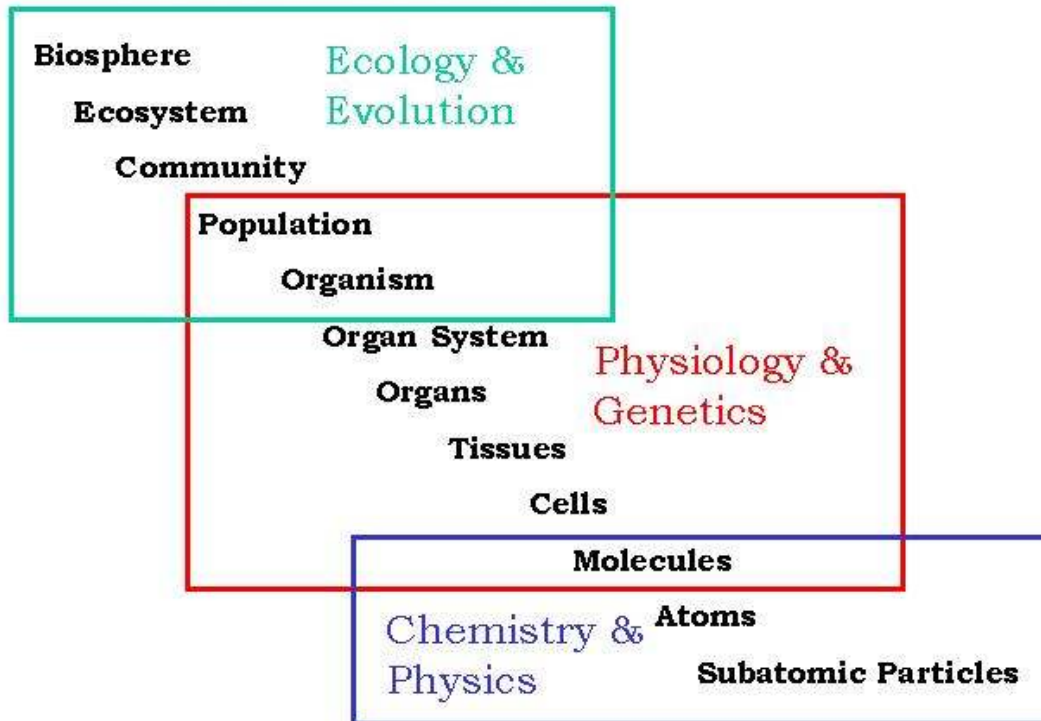


## II. HUMAN BIOLOGY OVERVIEW

### A. Levels of Biological Organization

#### II. HUMAN BIOLOGY OVERVIEW: A. LEVELS OF BIOLOGICAL ORGANIZATION



B. Human Biology Occurs at All Levels of Biological Organization

|                        |  |
|------------------------|--|
| Biosphere              |  |
| Ecosystem              |  |
| Community              |  |
| Population             |  |
| Organism               |  |
| Organ System           |  |
| Organ                  |  |
| Tissue                 |  |
| Cell                   |  |
| Molecule               |  |
| Atom                   |  |
| Subatomic<br>Particles |  |

C. Properties of Life Possessed by Humans

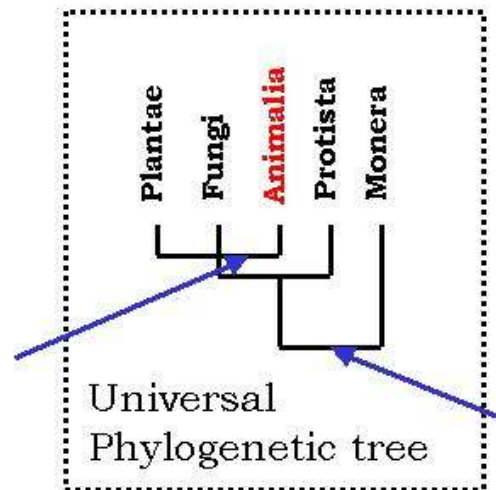
D. Where do Humans Fit in?

1. Humans are one form of life that evolved on Earth



Read Chapter 24: Pages 478-490

Earth's formation: about 4600 million years ago (MYA)



*Biological Evolution -*

*Adaptation -*

*Two theories of evolution in the 1800's*

Lamarckian evolution -

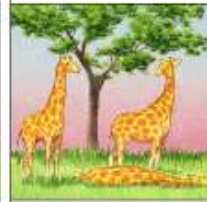
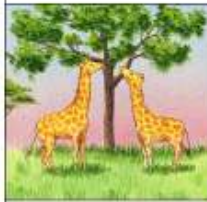
Natural Selection -

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**Early giraffes probably had short necks that they stretched to reach food.**

**Their offspring had longer necks that they stretched to reach food.**

**Eventually, the continued stretching of the neck resulted in today's giraffe.**



**Early giraffes probably had necks of various lengths.**

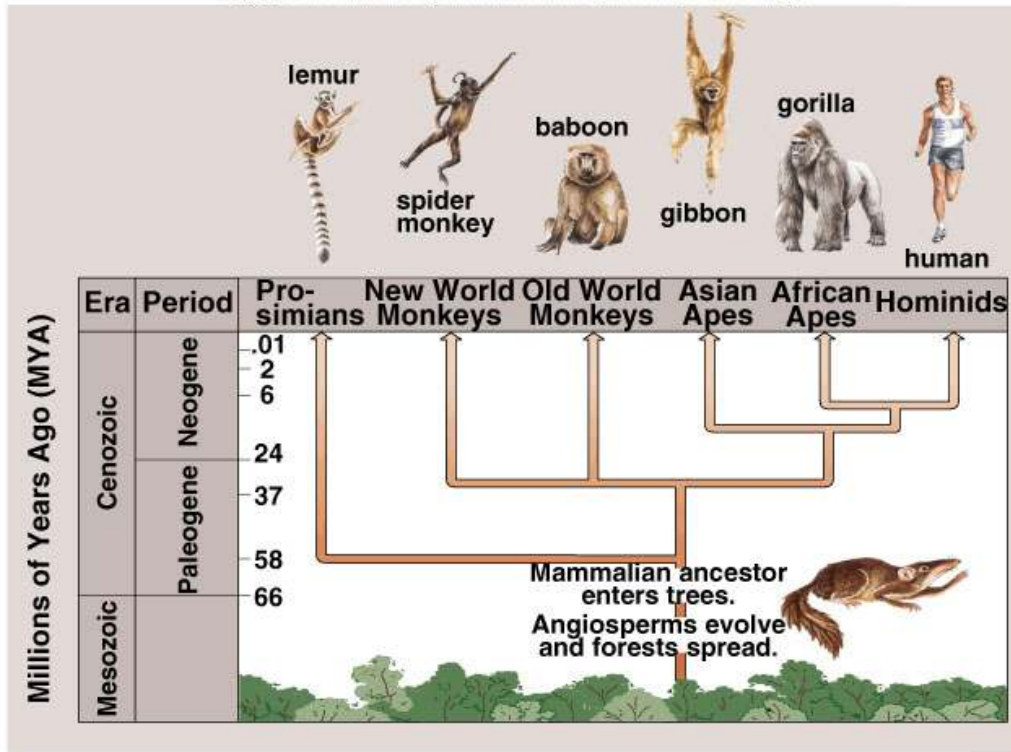
**Natural selection due to competition led to survival of the longer-necked giraffes and their offspring.**

**Eventually, only long-necked giraffes survived the competition.**

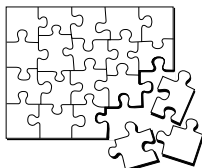
**a. Lamarck's proposal    b. Darwin's proposal**

*Humans are Primates*

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|   |  |
|---|--|
| Primate Characteristics<br>(adaptations for arboreal life)        |  |
|   |  |
|   |  |
|   |  |
| Hominid Characteristics<br>(traits of humans and their ancestors) |  |
|   |  |
|   |  |



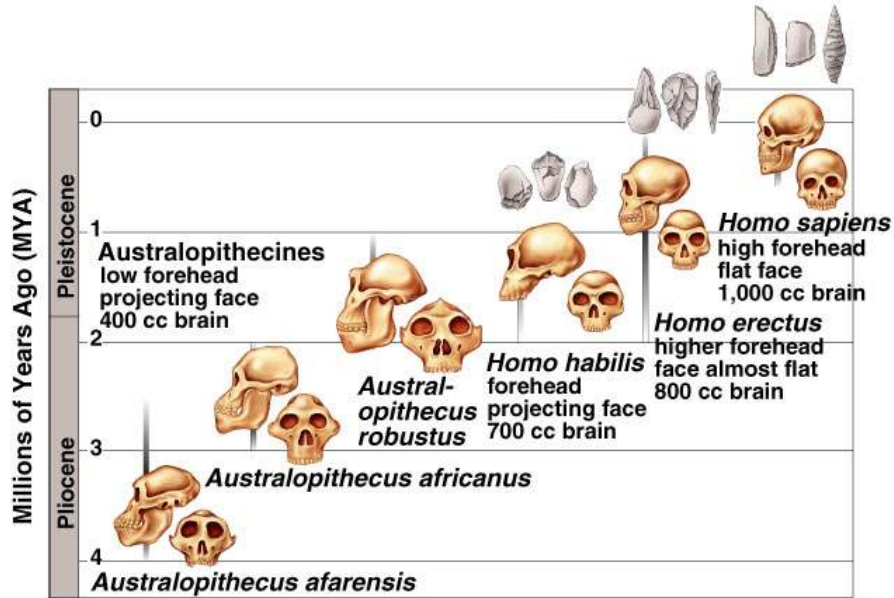
What living primates are most closely related to humans?  
(Circle one)

**Puzzler**

- Baboons      Gibbons      Lemurs      Great Apes

*Fossil Evidence of Human Evolution -*

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➤ Australopithecines - (\_\_\_\_\_ MYA)

➤ *Homo habilis* - (\_\_\_\_\_ MYA)

➤ *Homo erectus* - (\_\_\_\_\_ MYA)

➤ *Homo sapiens* (\_\_\_\_\_ MYA)

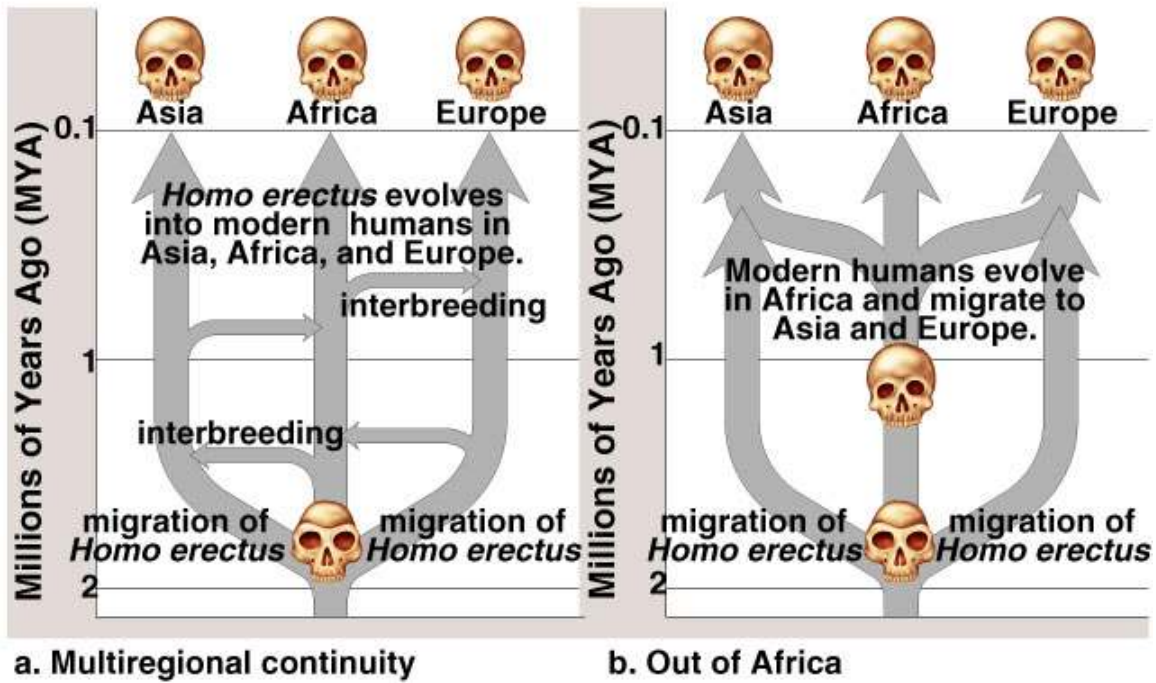


a.

*Australopithecus afarensis*

*Two Hypotheses Explaining the Evolution of Modern Humans*

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*Homo neanderthalensis* (Neanderthals)

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**Neanderthals**



Ancient *Homo sapiens* (Cro-magnons)

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**Cro-Magnon**

