Introduction to Zoology

I. General Information about Zoology

A. Zoology = study of animals
B. Why study animals?
   1. Learn about animals
      (including humans)
   2. Learn about animal interactions
      with each other,
      with other species,
      and with their environment

I. General Information about Zoology

C. How do we study animals?
   Use Scientific Method:
   1. Problem
   2. Research
   3. Hypothesis
   4. Experiment
   5. Results
   6. Conclusions

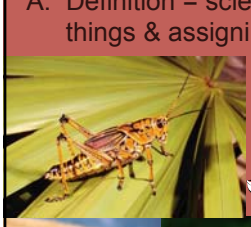
I. General Information about Zoology

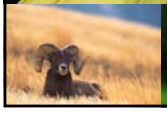
D. What is scientific, what is not?

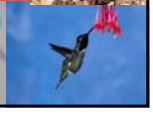
Science	Not Science
Observable	Not observable
Natural laws to explain phenomena	Faith, Magic
Testable theories	Not testable
Conclusions tentative	Set in stone, cannot be questioned

II. Taxonomy

A. Definition = science of naming things & assigning them to groups



II. Taxonomy


B. Why classify?

Why have a classification system?

1. Single, universal name

2. Avoid confusion
(be on same page)

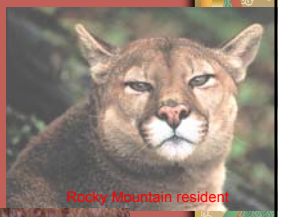
3. Understand how living things are related to one another

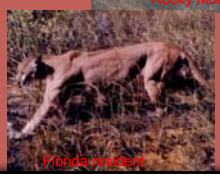
II. Taxonomy

C. E.g. What are the FIVE common names of this animal?

II. Taxonomy

1. Mountain Lion
2. Cougar
3. Puma
4. (Florida) Panther
5. Catamount





II. Taxonomy

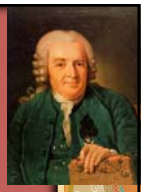
D. ¿Wouldn't it be confusing if we didn't have a scientific name?

Felis concolor

= scientific name of the mountain lion

Genus species

II. Taxonomy



E. Binomial nomenclature

1. System of scientific naming
2. Developed by Carolus Linnaeus (Swedish botanist) in 1750s
3. Two part scientific name Genus and species
4. Must be underlined or in *italics*
5. Genus capitalized, species not
6. In Latin (dead language of scholars)

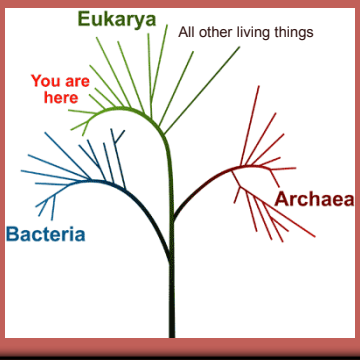
II. Taxonomy

F. There are three main classification systems:

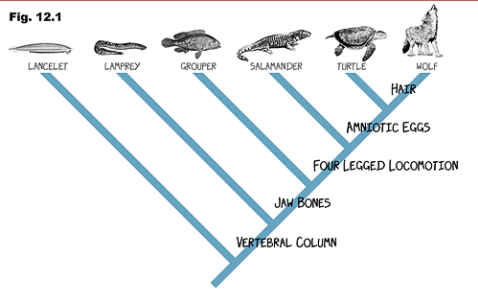
1. Binomial nomenclature
2. 3 Domain system
3. Cladistics

★ Note: Binomial nomenclature is used in this Zoology class.

2. Three Domain system



3. Cladistics



II. Taxonomy

F. Example :
Homo sapiens
(wise man)

1. Scientific name for human beings

2. Homo = genus (capitalized & underlined)

3. sapiens = species (underlined, but NOT capitalized)

II. Taxonomy

G. 7 Taxa of living things (taxon = group)

Kingdom	(kings)	(King
Phylum	(play)	(Phillip)
Class	(chess)	(Came)
Order	(on)	(Over)
Family	(fine)	(From)
Genus	(green)	(Germany)
Species	(silk)	(Saturday)

II. Taxonomy

H. Kingdom is least specific, largest group

I. Species is most specific, contains only one kind of organism

II. Taxonomy

J. An example: Classification of humans

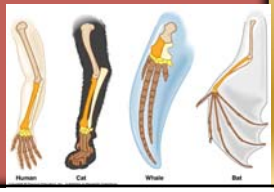
Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Primates
Family	Hominidae
Genus	Homo
Species	sapiens

II. Taxonomy

K. ¿ What determines how something is classified?

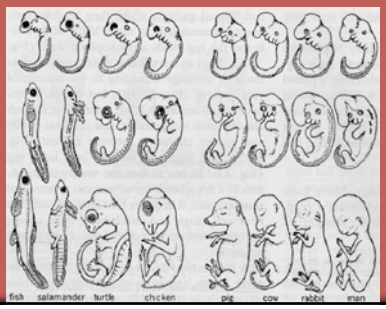
1. DNA

2. Structure



K. ¿ What determines how something is classified?

3. Embryology & development



II. Taxonomy

L. ☺There are 6 kingdoms of living things

1. Archaebacteria
2. Eubacteria
3. Protista
4. Fungi
5. Plantae
6. Animalia

II. Taxonomy

M. Prokaryotic = does not have a nucleus to contain its DNA

N. Eukaryotic – has a membrane–bound nucleus

II. Taxonomy

N. Unicellular

Prokaryotic

1. Archaebacteria –ancient bacteria
2. Eubacteria – most bacteria

Eukaryotic

3. Protista – single-celled organisms

O. Multicellular

4. Fungi – e.g. mushrooms
5. Plantae - plants
6. Animalia - animals