Unit 2: Biodiversity

different

Life

Oct 26-8:00 PM

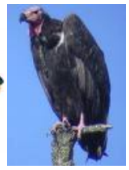
Chapter 3: Classification

TB Ch. 18, p. 447.

Oct 26-8:01 PM

Which one of these animals is a member of the same category as this golden eagle?



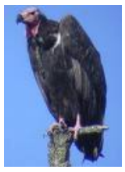
Oct 21-2:56 PM

NOW... Do you know what all birds have in common?

A. All birds have teeth, a backbone and feathers.

B. All birds have feathers, wings and are cold-blooded.

C. All birds have beaks, wings and feathers.



Oct 21-2:59 PM

Which one of these animals is a member of the same category as this frog?




Oct 21-3:01 PM

NOW... Do you know what all amphibians have in common?

A. They're cold-blooded, born in water and breathe through their skin and lungs or gills.

B. All amphibians have scales, breathe through their lings or gills and are cold-blooded.

C. All amphibians lay eggs, have backbones and claws.

Oct 21-3:03 PM

Which one of these animals is a member of the same category as this dog?




Oct 21-3:03 PM

NOW... Do you know what all mammals have in common?

A. Mammals are warm-blooded, nurse their young, and breathe through gills.

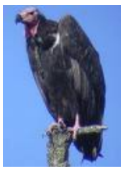
B. Mammals are warm-blooded, breathe through their lungs and nurse their young.

C. Mammals lay eggs, have a backbone, and are warm-blooded.

Oct 21-3:04 PM

Which one of these animals is a member of the same category as this turtle?






Oct 21-3:04 PM

NOW... Do you know what all reptiles have in common?

A. Reptiles have scales, are warm-blooded and live on water or on land.

B. Reptiles are cold-blooded, have scales, and breathe only through their lungs.

C. All reptiles lay eggs, have a backbone, and are cold-blooded.

Oct 21-3:05 PM

Classifying living things:

Basic terms:

Taxonomy : branch of science that classifies things.

Classification : A way of organizing information about different kinds of organisms in a logical manner.

- Classification is a way to show relationships among organisms.

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Many different characteristics can be used to classify animals:

Colour	Fur	Living Space
Size	Sound	Circulation
Number of legs	Behaviour	etc...

Organisms with similar characteristics are grouped together. These groups can be sub-divided in to more more specific groups.

This is the process of classification.

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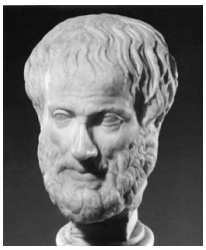
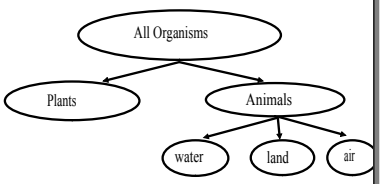
Classification through history

Aristotle's System (*Old System*)



- Aristotle classified organisms in 2 large groups: plants and animals .

-Animals were then classified based on where they lived: land , water and air .



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problems:

- Animals with no similarity other than living space were grouped together.

  ex: bats, birds and flying insects were all grouped together as "air animals".

- New organisms or new characteristics were discovered that didn't fit in the system... The invention of the microscope made it difficult to continue using this system.

  ex: bacteria, mushrooms, etc...

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Aristotle's system was popular until the 17th century (1600's) when the microscope was invented.

As more and more organisms were discovered (bacteria, etc...), new classifications were developed.

Similar organisms were grouped together and each group divided until they couldn't be divided anymore.

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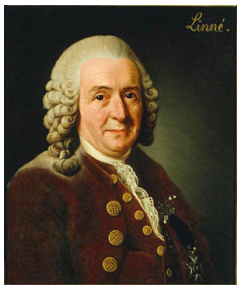

In the 18th century (1700's), Carl Linneaus developped a new way to classify organisms.

He is the founder of modern taxonomy, and classified organisms according to their physical characteristics.

Oct 21-3:37 PM

Modern Taxonomy

- Today, we use the system designed by Carl Linneus

- He grouped things that looked the same together.

- In this system, we use binomial nomenclature .
  (binomial: 2 name; nomenclature: naming system)

  ex: Homo sapiens
  (genus, species)

- By using this system, there is no miscommunication. Everyone uses the same name for each species.

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- e.g. mountain lion
  puma
  cougar
  panther

Scientific name = *Felis concolor*

A species is a group that is so similar, it can no longer be divided within the system.

A species is defined as a group of organisms that look alike and can reproduce successfully with one another under normal conditions.

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The system contains 7 groups:

Kingdom

Phylum

Class

Order

Family

Genus

Species

Each level is called a taxon (pl: taxa)

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Similar organisms share a genus, but have their own species:

ex: Canis familiaris - domestic dog

Canis lupus - wolf

Canis latrans - coyote

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Ursus horribilis

genus species

(grizzly bear)

horrible, or ferocious bear"

1) Capitalize genus, not species

2) Italicize or underline both

Ursus maritimus

genus species

(polar bear)

"sea bear"

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The classification system can be used to see how closely related are different organisms.

	House Cat	Mountain Lion	Domestic Dog	Human
Kingdom	Animal	Animal	Animal	Animal
Phylum	Chordate	Chordate	Chordate	Chordate
Class	Mammals	Mammals	Mammals	Mammals
Order	Carnivora	Carnivora	Carnivora	Primates
Family	Felines	Felines	Canines	Hominid
Genus	Felis	Felis	Canis	Homo
Species	domesticus	concolor	familiaris	sapiens

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The scientific names used in the binomial nomenclature system may sound foreign, but are actually useful.

Most words, or word parts, comme from either Latin or Greek languages and describe physical features, locations or discoverer's names.

ex: di - two
cephalus - head
chloro - green

Chlorus dicephalus - means???

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The Six Kingdoms

A species is a group of animals that looks alike and can reproduce successfully with one another. They are basically the same.

At the other extreme of the system are the kingdoms. Kingdoms are the largest groups of organisms.

They contain thousands of species that do not share anything in comon with organisms in the other kingdom (except life).

There are five kingdoms:

1) Eubacteria
2) Achaebacteria
3) Protista
4) Fungi
5) Plantae
6) Animalia

Kingdom
↓
Phylum
↓
Class
↓
Order
↓
Family
↓
Genus
↓
Species

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#1–6

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