



General Biology Lecture -2

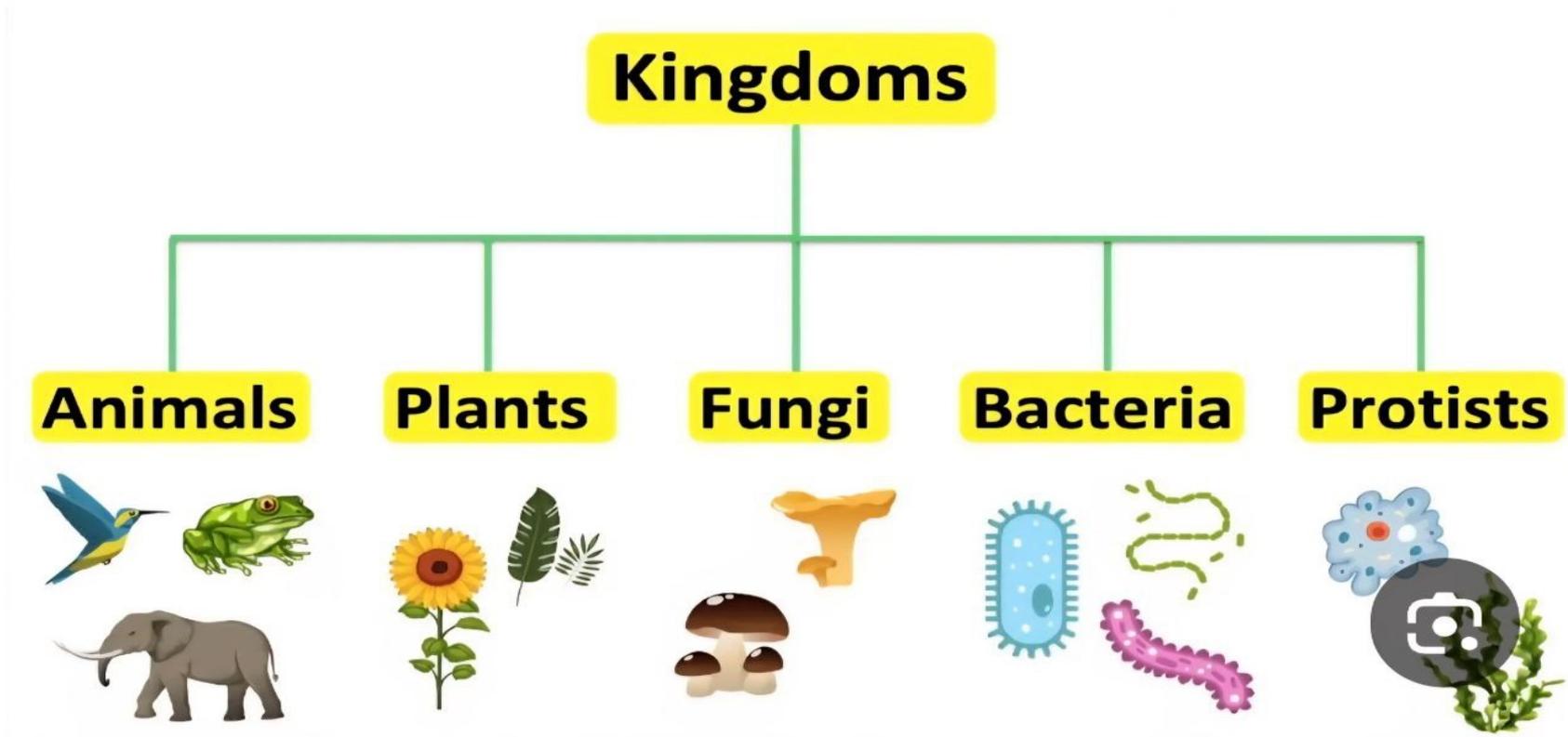
Classification of Living Organisms

(The Five Kingdom System)

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Objective:



Classification is the process of organizing living organisms into groups • •
The Five Kingdom system was proposed based on shared characteristics
by Robert Whittaker (1969), replacing the old plant/animal dichotomy

Advantages of the Five Kingdom Classification

- 1. Separates prokaryotes from eukaryotes.**
- 2. Distinguishes fungi from plants.**
- 3. Considers modes of nutrition (autotrophic, heterotrophic).**
- 4. Flexible for adding new groups.**

Kingdom Monera

Characteristics:

- * Prokaryotic (no true nucleus).
- ** Unicellular.
- *** Asexual reproduction by binary fission.

► Examples: Bacteria, Cyanobacteria.

Classification:

1. Eubacteria
2. Archaea



(Archaea)



(Eubacteria)

Kingdom Protista

Characteristics ::

- * Eukaryotic.
- ** Mostly unicellular.
- *** Live in moist or aquatic environments.

► Examples: Amoeba, Algae, Paramecium.

1- Sac Fungi (Ascomycota):

*Produce spores in sac-like structures ·

▶ Examples: Yeast (used in fermentation), Morel mushrooms, some molds.

2- Club Fungi (Basidiomycota):

**Produce spores on club-shaped structures.

▶ Examples: Mushrooms, Toadstools, Rusts.

3- Symbiotic Fungi (e.g., Lichens):

***Live with algae in a mutualistic relationship.



Lichens



Club Fungi

Kingdom Plantae

► Characteristics:

- 1- Eukaryotic, multicellular.
- 2- Autotrophic (photosynthesis).
- 3- Cell wall made of cellulose.
- 4- Non-motile (fixed in place).

► Examples: Trees, Grasses, Fern

- 1- Non-vascular Plants (e.g., Bryophytes)
- 2- Seedless Vascular Plants (e.g., Pteridophytes)
- 3- Seed Plants

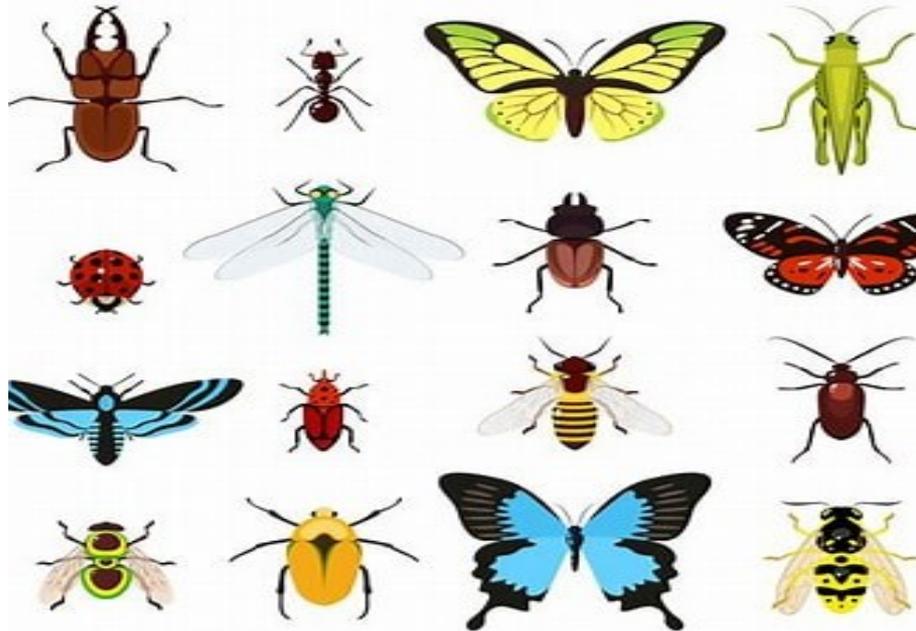
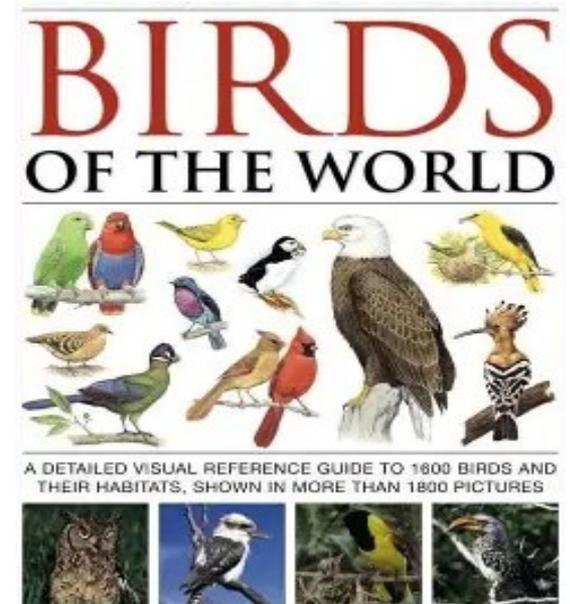


Kingdom Animalia

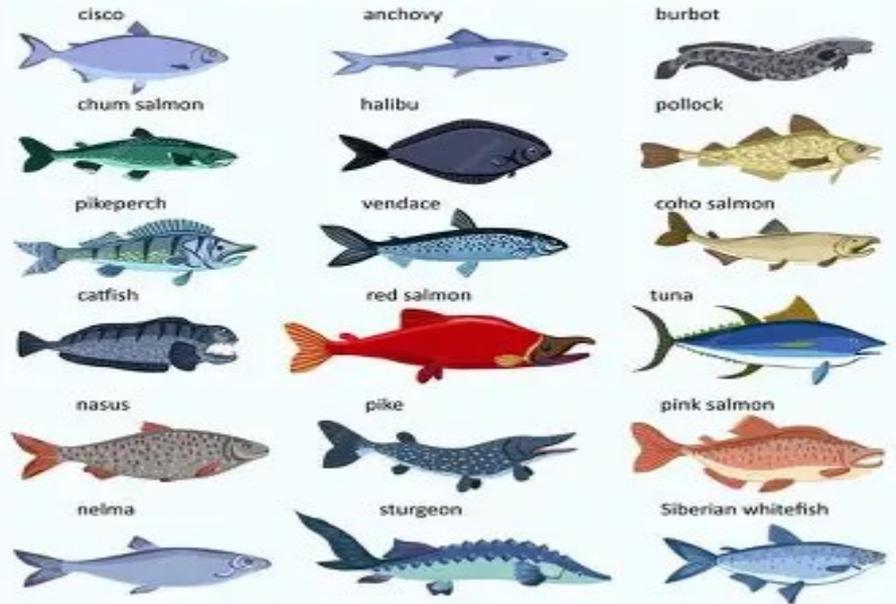
Characteristics:

- ♣ Eukaryotic, multicellular.
 - ♣ Heterotrophic (ingest food).
 - ♣ Mostly motile.
- ▶ **Examples:** Insects,

Birds, Mammals, Fish.



Freshwater and saltwater fish



Mammal Names



Llama



Lynx



Mole



Monkey



Mouse



Narwhal



Orangutan



Horse



Otter



Ox

Perissodactyla (Horses, rhinos)

Monotremata (Platypus, Echidna)

Rodentia (Rats, Squirrels)

Cetacea (Whales, Porpoises)

Chiroptera (Bats)

Primates (Humans, Apes, Monkeys)

Sirenia (Manatees, Dugongs)

Artiodactyla (Deer, Cattle, Giraffes)

SCIENCENOTES.ORG



Pig



Polar bear



Porcupine



Puma



Rabbit



Raccoon



Rat



Rhinoceros



Sheep



Tiger



Walrus



Weasel



Dog



Wolf



Zebra



1- Invertebrates: No backbone.

- **Mollusks: Soft-bodied, some with shells (e.g., Snail, Octopus).**
- **Arthropods: Exoskeleton and jointed limbs (e.g., Bee, Crab, Spider).**

2. Vertebrates: Have a backbone.

- 1- Fish: Aquatic, breathe with gills (e.g., Salmon).**
- 2- Amphibians: Start life in water (tadpole), move to land (e.g., Frog).**
- 3- Reptiles: Scaly skin, lay eggs (e.g., Snake, Turtle).**
- 4- Birds: Feathers, lay eggs (e.g., Sparrow, Eagle).**
- 5- Mammals: Body hair, give birth and nurse young (e.g., Humans, Whales, Cats).**