# NOTES FOR THE CLASSIFIED TAXONOMOFE

Name:

(DO NOT LOSE, BRING TO CLASS EVERYDAY)

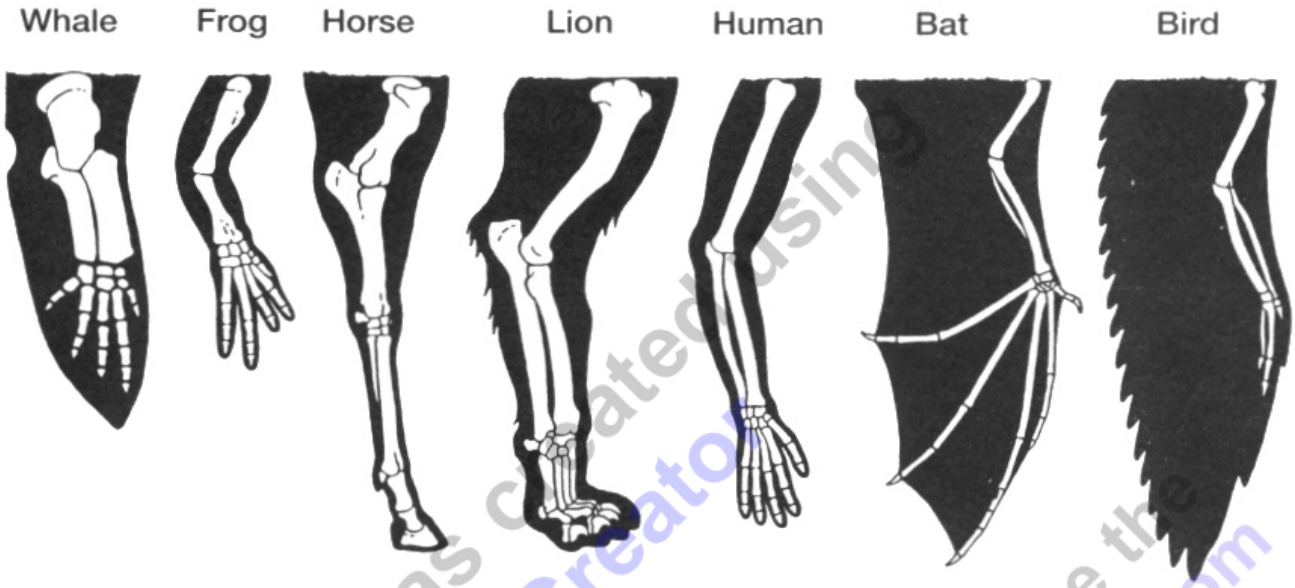
- Taxonomy: The science of classification.

- Classification is a very broad term which simply means putting things into groups.
  - Taxonomy means giving names to things.

- A species is…
  - A group of organisms with similar characteristics.
  - Produce fertile offspring.
  - Similar DNA.
  - Phylogeny -The history of a species as they change through time. Who came from whom?

- Dichotomous key: A tool that allows the user to determine the identity of items in the natural world.
- Based on characteristics and uses process of comparison and elimination.

- Classification uses…
- Homology – Similarities between organisms

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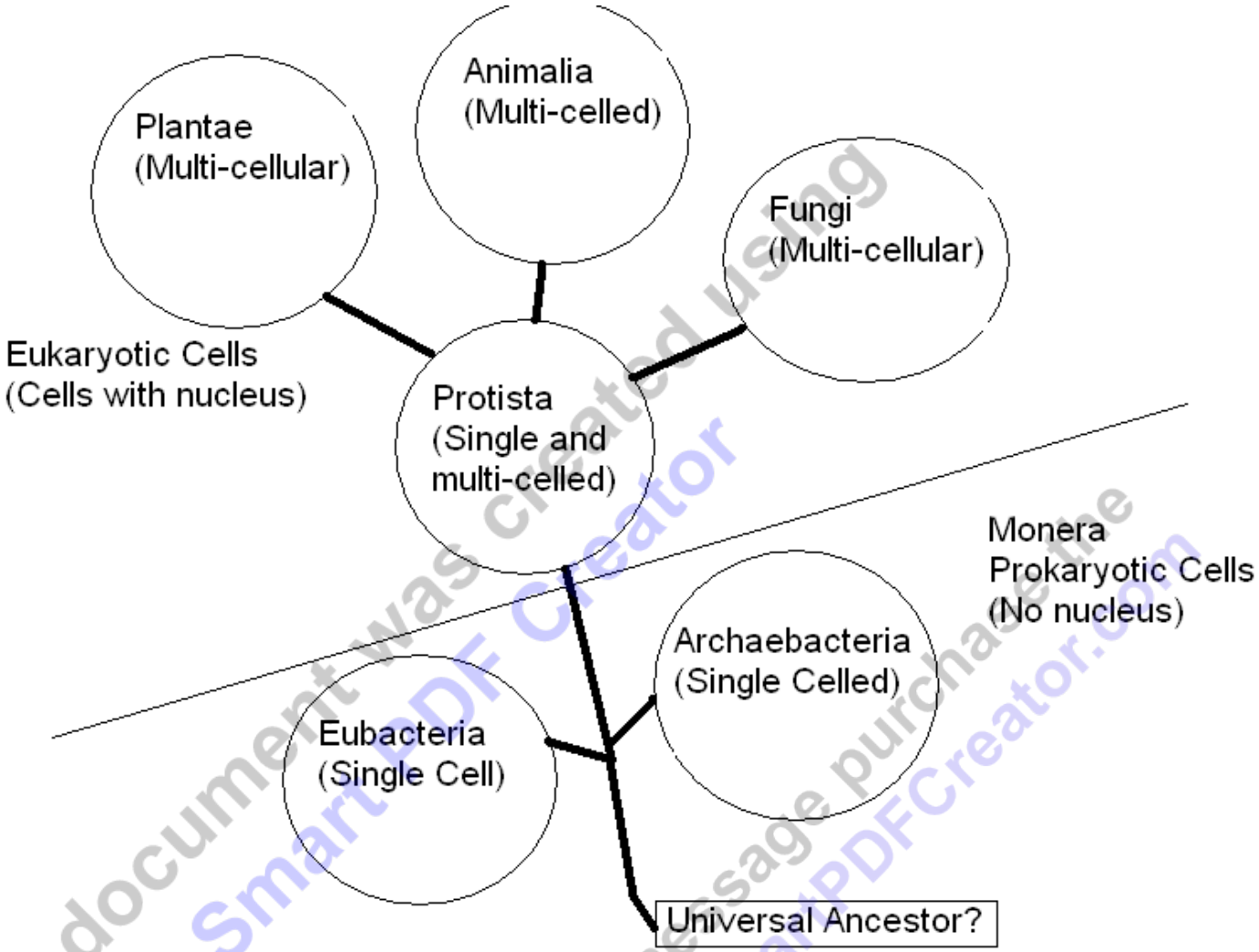
- Adapted traits may further subdivide species into subspecies.

- The 3 domains of life. All life is either…
  - Archaeabacteria
  - Eubacteria
  - Eukarya

- The Kingdoms of life. All life belongs to one of these.






- The 8 Taxonomic ranks. All living things have 8 names.
  - 1) Domain - Did
  - 2) Kingdom - King
  - 3) Phylum - Phillip
  - 4) Class – Come
  - 5) Order - Over
  - 6) Family - For
  - 7) Genus - Good
  - 8) Species – Spaghetti

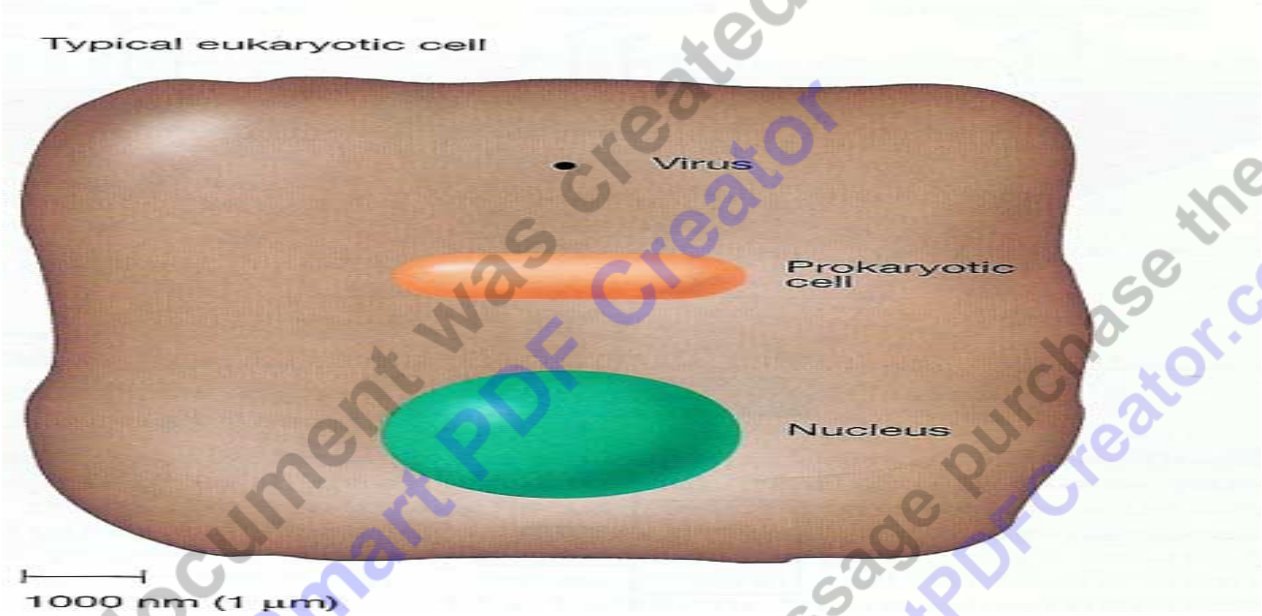
- Genus name is Capitalized, species name is not. They are both italicized.
  - Ex)

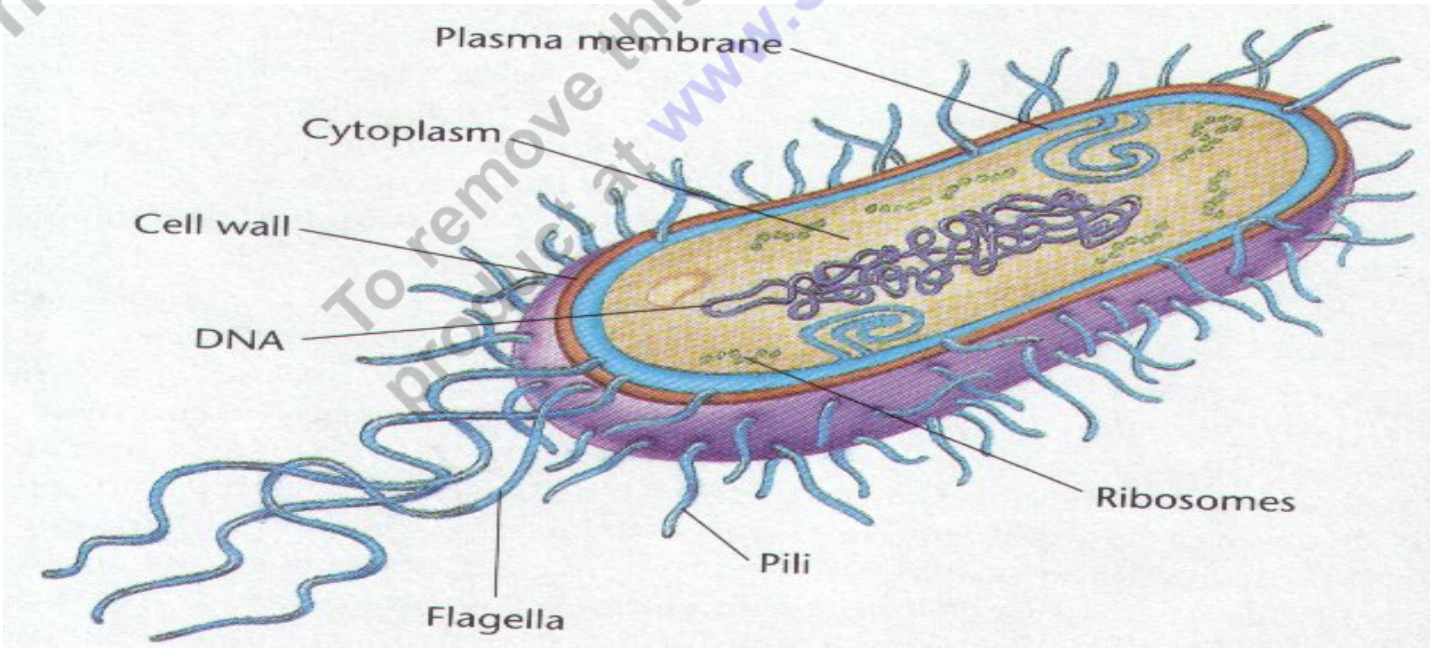



- Humans Taxonomic Classification
  - **-Domain - Eukarya**
  - **-Kingdom - Animalia**
  - **-Phylum - Chordata**
  - **-Class - Mammalia**
  - **-Order - Primatdae**

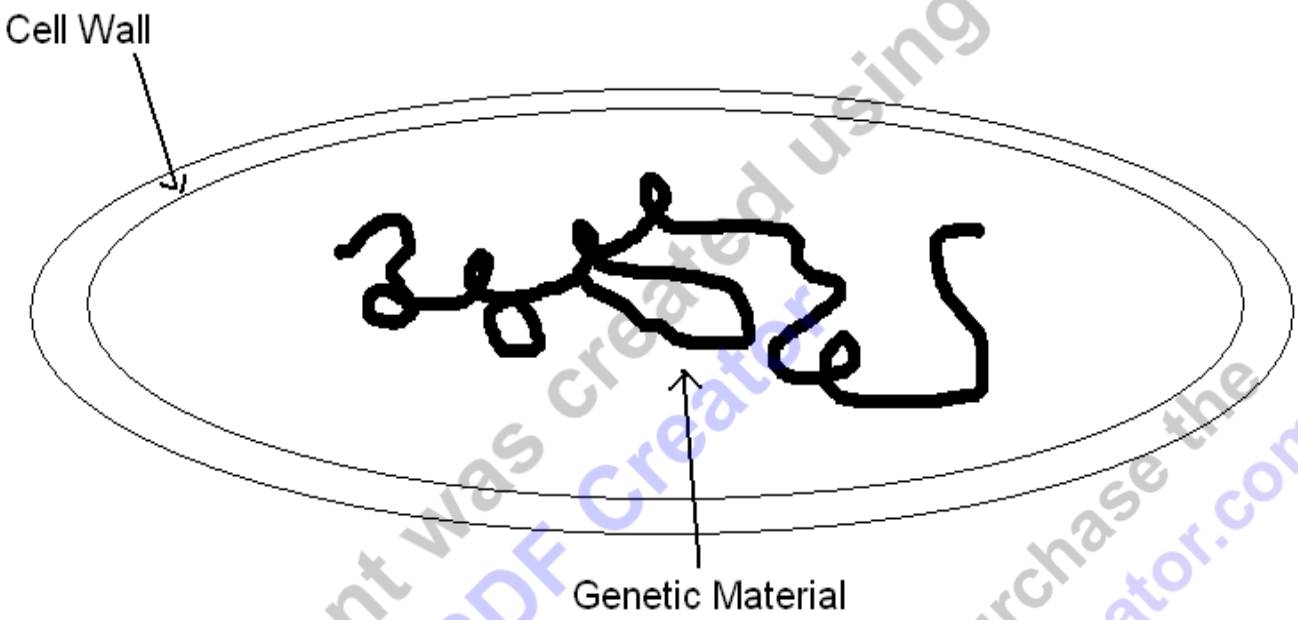
- -Family - Hominidae
- -Genus - Homo
- -Species – Sapien

- Area of focus: Bacteria (Kingdom Eubacteria)



- Prokaryotic (No nucleus) and no internal organelles.

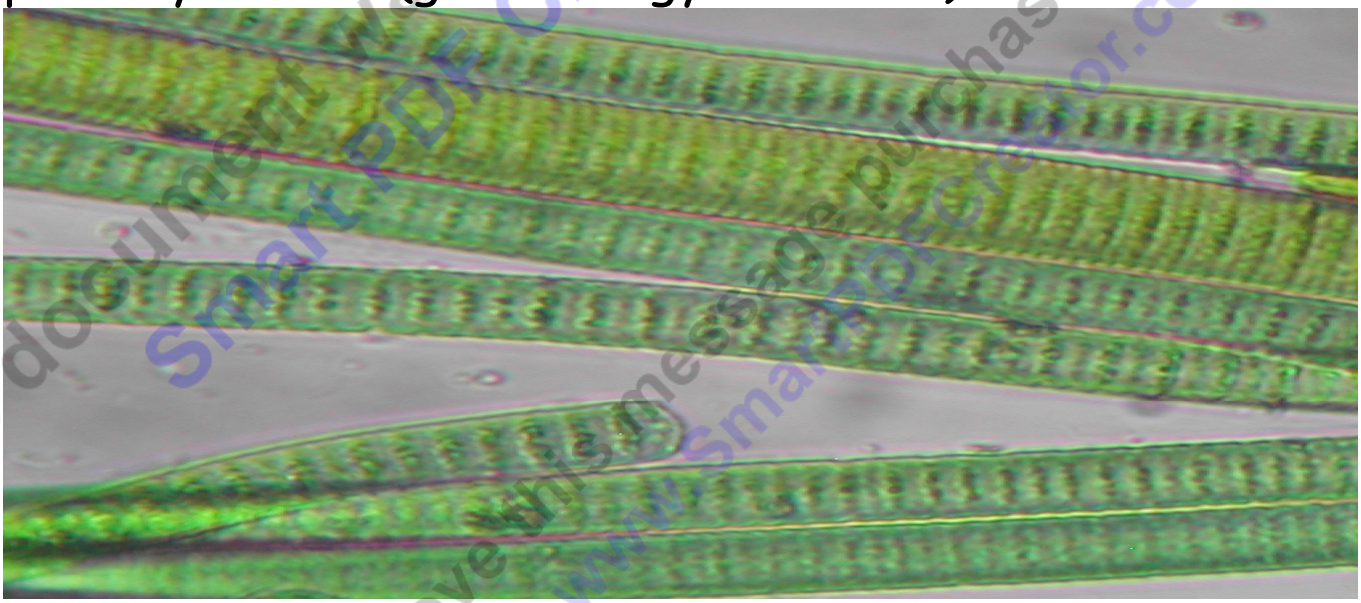



- Has a cell wall.
- DNA floats in cell

- Two types:
  1.) Archaea – old
  2.) Eubacteria –true

- Eubacteria – True bacteria, gets energy from food or sun.

- Sphere (Round) Shaped – Cocci .
- Rod shaped – Bacilli -
- Spiral shaped – Spirilla ~

- Mycoplasma bacteria – smallest known life form (jagged and random).
- Diplo = Pair ..
- Tetrad = Groups of four ::
- Sarcinae = Groups of Eight. ::::
- Staphylo = Cluster
- Strepto = Chain ----------
- Blue-Green Algae: Also called Cyanobacteria. It is photosynthetic (gets energy from sun).
- 

- Gram staining: Technique used to identify bacteria.
  - -Pink and Red: Gram Negative
  - -Gram Positive = Dark Purple

- Bacterial food borne illness can be prevented by….
  - -Controlling the initial number of bacteria present.

- -Refrigeration – Prevents the small number of bacteria from growing rapidly.
- -Destroying the bacteria by proper cooking.
- -Avoiding re-contamination. Clean cutting board immediately after use.

- Penicillin: Antibiotic that destroys bacteria derived from penicillin mold (fungi).
- - agent that kills or inhibits the growth of microorganisms on the external surfaces of the body.

- Plaque is the accumulation of bacteria and micro-organisms on a tooth.
- Tartar is dental plaque that has mineralized. Tartar can form when plaque is not removed from the tooth surfaces.

- Binary Fission: The process by which a bacterium multiplies by splitting in two.

- In asexual reproduction, one individual produces offspring that are genetically identical to itself.
- Sexual Reproduction: Genetic material from two different individuals combines into a genetically unique offspring.

Positives (+)
-Food Source
-Recycling waste
-Industrial
-Decomposition

Negatives (-)
-Health Problems
-Destroys Food

New Area of Focus: Eukarya

Domain Eukarya; Have cells with a membrane bound nucleus and membrane bound organelles.

# New Area of Focus: Protista

- Protist – An organism with Eukaryotic Single cell, or colonies. Lacking tissues and eats, makes, or decomposes for food.
- Plant-like Protists (photosynthetic but no root stem or leaves)
  - -Green Algae
  - -Brown Algae
  - -Red Algae
  - -Diatoms
    - Round shells made of glass.
  - -Dinoflagellates
  - -Euglenoid

- Animal-like Protist (move, eat food, some use sun)
  - -Ameobas
  - -Flagellates
  - -Sporazoan (parasite)
  - Ciliates
    - Cilia
    - -Cilium / Cilia: A hairlike projection from the surface of a cell; provides locomotion.

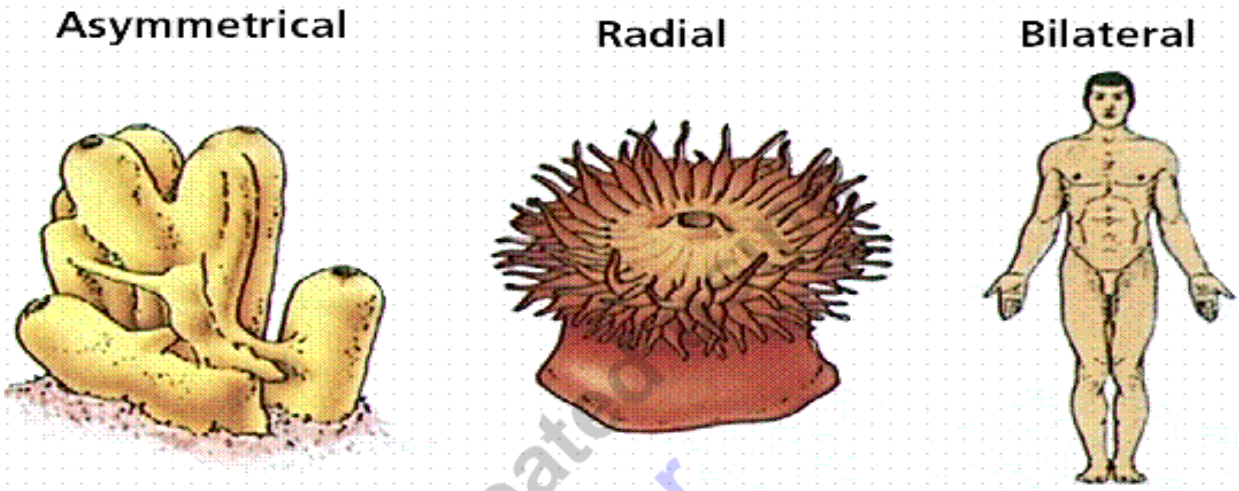
- Fungus-like protists (get energy from decomposing).

- -Slime Mold
- -Water Mold

- New Area of Focus: Animalia

- Characteristics of Animalia.
  - -No cell walls.
  - -Animals have a period of embryonic development.
  - -Animals eat food.
  - -Animals move.
  - -Animals have nervous and muscle tissue.
  - -Animals have diplontic life cycle. Genetic information can come from a mother and father. (Many species)

- Animals have three types of symmetry.
  - -Bilateral symmetry.
    - Same on both sides.
  - -Radial Symmetry.
    - Arranged equally in all directions from a central point.
  - -Asymmetrical.
    - Having no symmetry.




- New Area of Focus: Learning the Phylums and Animalia.

- Common Phylums of the Kingdom Animalia.
  - -Phylum Mollusca
    - Soft bodies and some have shells.
  - -Phylum Echinodermata - Spiny skinned organisms.
    - Radial symmetry
  - -Phylum Cnidaria – Stinging cells.
    - Silent C (ni dérree ən).
    - Radial symmetry.
  - Phylum Porifera – Sponges
    - Asymmetrical.
  - Phylum Rotifera
    - Wheeled organisms
    - (Draw in journal somewhere on page).
  - -Phylum Nematoda

- The Roundworms.
- -Phylum Platyhelminthes.
  - The Flatworms.
- -Phylum Annelida
  - The segmented worms.
- -Phylum Arthropoda
  - Segmented joints, exoskeleton, bilateral symmetry.
    - The big three Classes of the Phylum Arthropoda.
    - -Class Insecta
      - 6 legs.
      - 3 body pats.
      - Head, thorax, abdomen.
      - Compound eyes.
      - 2 antennae.
      - Only flying arthropod.
    - -Class Crustacea
      - Head and abdomen
      - Some have many legs (8+) with many jobs.
      - Most are aquatic
    - Class Arachnida
      - 8 legs.
      - No antennae or wings.

- Two body parts.
- Head and sensory.
- Abdomen.
- Most live on land.

- Sub-Phylum Myriapoda
  - Head and trunk
  - Many legs per segment
  - No wings
  - Antennae

- -Chordata
  - Having a backbone or notocord.
- -Classes of Chordata (The Big 5)
  - Mammalia - Hair
  - Reptilia - Scales
  - Amphibia – Double life, land and water, toads, frogs, salamaders,
  - Aves _Birds_____
  - Superclass Agnatha: The jawless fish
  - Superclass Gnathostomata: Jawed Fish
  - Class Osteichthyes (Bony Fish): Scales (most), fins, gills, gas bladder.



- New Area of Focus: Learning about the Order Mammalia.

- 3 subclasses of mammals
  - -Eutheria: Placental Mammals.
  - -Metatheria (Marsupials).
  - -Prototheria / Monotremes (Egg laying mammals).

- Characteristics of Mammals
  - -Have hair.
  - -Warm-bloodedness.
  - -Mammary Glands: Nourish young with milk.
  - -Circulatory system: 4 chambered heart.
  - -Respiratory system: Lungs are very large.
  - -Reproductive system: Young live inside in an embryo.
  - -Fat and energy storage.
  - -Brain: Largest in the animal world.
  - -Digestive system: Salivary glands are present.
  - -Small Bones in ear
  - -Sweat Glands (Most Mammals).
  - -Teeth: Heterodonty - specialized for feeding/diet.
  - -Musculature system: Highly plastic for high speed locomotion.
  - -Hinged lower jaw.

- New Area of Focus: Kingdom Fungi.

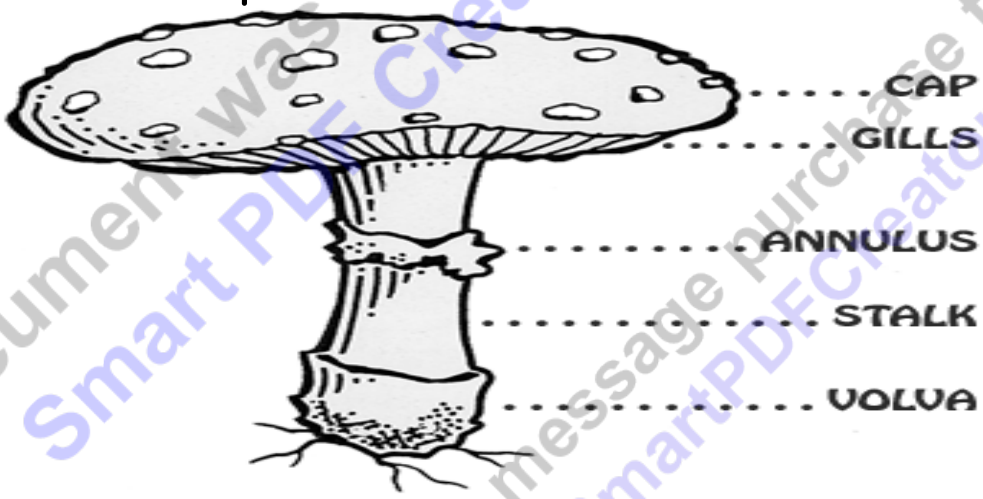
- Kingdom Fungi: Multi-cellular (many celled) organisms that ingests food by absorption and reproduces using spores.

- Positives and Negatives of Fungi

| + | - |
|---|---|
| Positives | Negatives |
| They help plants | Cause disease (Parasitic) |
| They recycle nutrients | Damage food and property |
| We can eat them | |

- Divisions of Fungi
  - -Chytridiomycota / Primitive Fungi
    - Live on land and water.
    - Great decomposers.
  - -Zygomycota / Molds
    - Mycorrhizal fungi in soil.
  - -Ascomycota / Sac Fungi:
    - 75% of all Fungi.
    - Yeast.
    - Jock Itch
    - Truffles.

- -Mycophycophyta / Lichens:
  - Fungi and algae live together (symbiotic)
- -Deuteromycota / Imperfect Fungi:
  - The leftovers ☹.
  - Includes Athletes foot.
- -Basidiomycota / Club Fungi:
  - Mushrooms.
  - Decomposition of wood.
- -




- The 3 Roles of Fungi
  - -Mutualistic symbionts – Fungus helps organisms (plants) grow.
    - -Hyphae / Part of the Mycelium- The part of the fungus that feeds, grows, and ultimately may produce a mushroom.
  - -Saprobic- decomposes dead things…logs, feces, corpses, and recycles nutrients.

- -Parasitic- Fungi absorbs nutrients (SPONCH) from living cells.

- A few final thoughts on Fungi.
  - Mold prevention.
  - Fermentation.

- Asexually, Fungi reproduce by
  - -Budding / Splitting in two.
  - -Fragmentation / Break off and grow.
  - -Sporulation / releases spores which are tiny repoductive bodies.

Some fungi reproduce sexually, where two haploid spores form a diploid.

- - Spores are microscopic and travel through the air. Storage containers help but spores will always enter.

- To prevent mold growth limit…


- New Area of Focus: Kingdom Plantae.
- Plants: Have cells walls and make their own food (photosynthesis), and lack the power of locomotion.
- Plants are divided into Divisions instead of Phylums.

DO NOT LOSE! KEEP THESE NOTES FOR THE CLASSIFIED TAXONOMY