**Protist and Fungi Notes**

**Kingdom: Protista - unicellular organisms that have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Similar to Bacteria**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**One of the first groups of living things on Earth. (1.5 billion years ago.)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Can be parasites**

**Difference from Bacteria**

**Has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Live in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ environment.**

**Generally live as individual cells.**

**Protists vary greatly in appearance and function.**

**3 Categories**

**I. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Protists.**

**II. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Protists.**

**III. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Protists.**

**I. Animal-like Protists**

**Protozoan means “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”.**

**Cells lack a cell wall. Heterotrophs. Most can \_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**4 Groups of Animal-like Protists**

**1. Sarcodines (SAHR-koh-dighnz)**

**2. Ciliates (SIHL-ee-ihts)**

**3. Flagellates (FLAJ- ehl-ihts)**

**4. Sporozoans (spohr-oh-ZOH-uhnz)**

**1. Sarcodines**

**Have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Greek:“false foot”)**

**Extensions of the cell membrane and cytoplasm.**

**Pseudopods are used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Many have shells. These shells form limestone, marble and chalk.**

**Most familiar Sarcodine is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Pseudopods: Blob shaped.**

**Contractile Vacuoles: controls amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inside**

**Food Vacuole: where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is digested.**

**Split Personality: Amebas reproduce by dividing into two new cells (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).**

**Amebas can respond to their environment. They are sensitive to light and some chemicals.**

**2. Ciliates**

**Have cilia on the outside of their cells.**

**Tiny \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ projections used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, to gather \_\_\_\_\_\_\_\_\_\_\_\_\_\_and as \_\_\_\_\_\_\_\_\_**

**Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Slipper shaped**

**Oral groove: like the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Gullet: holds food.**

**Food Vacuole: digests food. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: removes wastes**

**2 Contractile Vacuoles 2 Nuclei**

**Reproduces by either \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or conjugation.**

**3. Flagellates (Zooflagellates)**

**Have a Flagellum: a long whip-like structure used for movement.**

**Many live in animals**

**4. Sporozoans**

**All Sporozans are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**They feed on cells and body fluids.**

**Form from Spores (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).**

**Pass from one host to another. Pass from ticks, mosquitoes or other animals to humans.**

**II. Plant-like Protists(Algae) Unicellular & Multicellular Colonies (groups of unicellular protists) Can move on their own**

**Autotrophs: \_\_\_\_\_\_\_\_\_\_ of the Earth’s oxygen is produced by Plant-like Protists!**

**6 Groups of Plant like Protists**

**1. Euglenoids**

**Live in fresh water Autotrophic and Heterotrophic at the same time.**

**Flagella \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ : sensitive to light.**

**Ex. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Have a flagellum to move to find food, and chloroplasts for photosynthesis if they can’t find food!**

**Have a contractile vacuole to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**2. Diatoms Unicellular 10,000 living species. Glass like cell wall**

**Diatomaceous earth: course powder that comes from dead diatoms (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).**

**3. Dinoflagellates Cell walls are like plates of armor. Two flagella-Spins when it moves.**

**Colorful (pigments)**

**Can glow in the dark and cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**4. Red Algae**

**Multicellular seaweeds Live in deep ocean waters**

**Used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and hair conditioner**

**Used as food in \_\_\_\_\_\_\_\_\_\_\_\_\_**

**5. Green Algae**

**Most are unicellular Some form colonies Few are multicellular**

**Can live in fresh and salt water and on land in damp places. Very closely related to green plants.**

**6. Brown Algae**

**Commonly called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Can contain brown, green, yellow, orange and black pigments.**

**Attach to rocks Have air bladders Giant Kelp can be 100 meters long!**

**Used as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**III. Fungus-like Protists**

**Heterotrophs with cell walls.**

**Many have flagella and are able to move at some point in their lives.**

**Three types: Slime Molds, Water & Downy Molds**

**Reproduce with Spores (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) in fruiting bodies.**

**Tiny threads that look like fuzz. Attack food crops Caused the Irish Potato Famine.**

**Feed on bacteria and other microorganisms.**

**Kingdom Fungi**

**Athlete’s foot, Blue cheese dressing, Mushrooms and more!**

**The Characteristics of Fungi Some unicellular , Most are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Have tube-like strands called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**The Characteristics of Fungi**

**Feed on dead tissues or organic waste (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - mutually beneficial relationship between a fungus and another organism**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - feeding on living tissue of a host.**

**Reproduce by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Spores are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sexual (meiotic in origin)/ Asexual (mitotic in origin), Formed Directly on hyphae , Inside Fruiting bodies**

* **HUMAN-FUNGUS INTERACTIONS**
* **Beneficial Effects of Fungi** 
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - nutrient and carbon recycling.**
  + **Biosynthetic factories. Can be used to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, acids, food (e.g., fermented products, mushrooms).**
  + **Model organisms for biochemical and genetic studies.**
* **Harmful Effects of Fungi** 
  + **Destruction of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and cloth.**
  + **Animal and human \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, including \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + **Toxins produced by poisonous ­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and within food (e.g., grain, cheese, etc.).**
  + **Plant \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**