

Section 19.1 – Bacteria

- **Prokaryote** – unicellular organisms that _____
- **Eubacteria**
 - Very diverse and _____
 - Cell wall containing _____
- **Archaeobacteria**
 - Live in _____ environments
 - Cell wall _____
 - DNA more like _____
- Identified by
 - Shape
 - **Bacilli** – _____
 - **Cocci** – _____
 - **Spirilla** - _____
 - Chemical nature of _____
 - Use gram staining to detect _____
 - How they move
 - Some have _____, some _____, some _____ of slimelike material
 - How they _____
- **Binary Fission** – replicates DNA and _____
- **Conjugation** – form a bridge between _____
- **Endospore** – spore produced during harsh times to _____
- Decomposers break down the _____
- **Nitrogen fixation** – bacteria convert _____ into a form plants can use
- Human Uses:
 - _____
 - _____
 - Remove _____ from water
 - Synthesize _____
 - Live inside us to make _____ we cannot or _____ we cannot

Section 19.2 - Viruses

- A typical virus is composed of a _____ surrounded by a _____.
- **Viruses** – not _____; particles of _____, _____, and sometimes _____
- **Capsid** – the protein coat the _____
- **Lytic Infection** – a virus enters the cell, makes copies of itself, and _____

- **Lysogenic Infection** – the virus integrates its DNA _____
 - The viral genetic information replicates _____
- **Prophage** – the viral DNA embedded _____
- **Retroviruses** – after infection, they produce a _____ then inserts itself into _____
 - 'Retro' because it is copied _____
 - Example: _____
- Viruses are _____ because:
 - They must infect another organism _____
 - They contain no _____
 - They consume no _____

Section 19.3 - Disease

- **Pathogens** – _____ causing agents
 - Damage the cells and tissues of the infected organism by _____.
 - Release _____ throughout the body.
- **Vaccine** – preparation of _____ that allows the body to later _____ the real pathogen
- **Antibiotics** – compounds that _____ of bacteria
- Methods to control growth:
 - Sterilize by _____
 - _____
 - Food _____
- Viral diseases cannot be _____
- Vaccines can work if _____
- Some viruses can _____
- Others are spread by _____, _____ and _____
- **Viroids** – single stranded RNA molecules that _____ (infect only plants)
- **Prions** – viruses that contain _____ (mad cow disease)

Section 20.1 – Protista

- **Protist** – any organism that is not a _____
- Most are _____ though some are _____ or live in _____

Section 20.2 – Animal-like

- Zooflagellates
 - Protists that are _____ and swim using _____
 - Live in _____
 - Absorb food through _____

- Usually reproduce by _____
- Sarcodines
 - Animal-like protists that use _____ for _____
 - **Pseudopod** – cytoplasmic _____
 - “ _____ ”
 - **Amoeboid Movement** – pseudopods extend out and are filled with _____
 - **Food Vacuole** – small cavity that temporarily _____.
 - Cliffs of Dover, and other calcium, are _____
- Ciliates
 - Use cilia for _____ and _____
 - **Cilia** – short, hair-like projections _____
 - **Trichocysts** – small, bottle-shaped structures _____
 - **Macronucleus** – “ _____ ” of genetic info
 - **Micronucleus** – contains a ‘ _____ ’
 - **Gullet** – an indentation on one side _____
 - **Contractile Vacuole** – cavities used to _____
 - Usually reproduce by _____ but will undergo _____
- Sporozoans
 - Do not _____ and are _____
 - Reproduce using _____

Section 20.3,4 – Plant-like

- Some protists can _____ and _____ a great deal
- Chlorophyll and accessory pigments allow algae to _____
- **Euglenophytes** – have _____ but no _____
 - **Eyespot** – cluster of pigments that _____
 - **Pellicle** – cell membrane that _____
- **Chrysophytes** – have _____ chloroplasts
- **Diatoms** – have cell walls made of _____
- **Dinoflagellates** – some photosynthesize, some _____
- **Phytoplankton** – small, photosynthetic organisms that _____
- **Algal Blooms** – rapid growth caused by _____
- **Red Algae** – live at _____ in water
- Contains chlorophyll *a* and _____
- **Phycobilins** – reddish pigments that _____
- **Brown Algae** – contain chlorophyll and a _____
 - _____, live in water
- **Green Algae** – share many traits with _____
- Some exist as _____
- Some exist as _____ connecting the single cells

- **Alternation of Generations** – algae switches back and forth between _____ stages during their life
 - **Gametophytes** – _____ forms of some algae that produce _____
 - **Spores** – _____ reproductive cells
 - **Sporophyte** – _____-producing organism

Section 20.5 – Fungus-like

- Slime Molds
 - Do not have _____ like fungi but digest _____ like fungi
 - **Cellular Slime Molds** – individual cells _____
 - **Acellular Slime Molds** – cells fuse to form _____
 - **Fruiting Body** – _____ that produces spores
 - **Plasmodia** – fused structure with _____
- Water Molds
 - Thrive on dead or decaying matter and _____
 - **Hyphae** – tiny _____
 - **Zoosporangia** – _____ which are spore cases
 - **Antheridium** – produces _____
 - **Oogonium** – produces _____
- Algae is used to:
 - Treat health problems _____
 - Make food like _____, _____, _____
 - Make _____, waxes, _____, etc.
 - A water mold caused a _____ in Ireland which killed _____ and caused _____ to immigrate to the U.S.

Section 21.1 - Fungi

- Fungi are eukaryotic heterotrophs that _____
- **Chitin** – complex _____ that makes up the fungi _____
 - Also found in _____
- **Hyphae** – thin filaments only one cell thick for _____
- **Mycelium** – many hyphae tangled together _____
- **Fruiting Body** – reproductive structure that _____
- Most fungi reproduce both _____
- Asexual reproduction occurs when parts of the fungus _____ those parts grow
- **Sporangia** – structure where _____
- Many release spores _____
- Others require animals to _____
 - The stinkhorn smells like _____ and attracts _____ to spread spores

Section 21.2 - Classification

- Common Molds
 - Grows on _____
 - **Rhizoids** – rootlike hyphae that _____
 - **Stolons** – stemlike hyphae that runs along _____
- The Sac Fungi
 - **Ascus** – structure within the fruiting body where _____
 - **Yeasts** – _____
 - **Budding** – _____ in which yeasts multiply by _____
- The Club Fungi
 - **Basidium** – the spore bearing structure found on _____ of mushroom cap
- The Imperfect Fungi
 - Fungi that cannot be placed in _____ because researchers have never been able to _____

Section 21.3 – Ecology of Fungi

- **Saprobe** – organism that obtain food _____
- Fungi recycle nutrients by _____ and wastes of other organisms
- Some fungi exist as parasites, _____
- Some fungi form symbiotic relationships in which _____
- **Lichens** – _____ organisms living together
- **Mycorrhizae** – association of _____ to benefit from each other