

Notes: Microbiology

What is disease?	<ul style="list-style-type: none"> • _____ is a change that disturbs the normal functioning of the body's systems. • Many diseases are classified as _____, or diseases that can be _____ <ul style="list-style-type: none"> ○ Caused by _____, _____, and other pathogens ○ _____: organisms that cause _____
What is germ theory?	<ul style="list-style-type: none"> • The _____ theory describes some causes of _____. ○ In the _____, Pasteur did experiments that showed _____ (bacteria) caused milk to spoil. ○ Pasteur's Germ Theory states that some diseases, called _____ diseases, are caused by _____. ▪ Germs are the general name given to organisms that cause _____
What is microbiology?	<ul style="list-style-type: none"> • Organisms come in many shapes and sizes. <ul style="list-style-type: none"> ○ _____: study of _____ living things <ul style="list-style-type: none"> ▪ _____: very small _____ <ul style="list-style-type: none"> • need _____ to see ○ organisms are classified into _____ <ul style="list-style-type: none"> ▪ _____ kingdoms <ul style="list-style-type: none"> • archaea, _____, protists = microscopic/ _____ • _____, fungi, plants = _____
What causes disease?	Disease can be caused by _____, bacteria, _____, protists, or _____
What are viruses?	<ul style="list-style-type: none"> • Viruses are _____ particles composed of a _____ (DNA or RNA) and a _____ coat. • Viruses need a _____ cell to reproduce—this is why they are not considered alive! <ul style="list-style-type: none"> ○ Host cell: the cell that a virus _____ • Viruses invade _____ cells and use the enzymes and _____ of the host cell to make _____ viruses, usually _____ the host cell in the process. • Viral diseases are among the most _____ illnesses in humans. These illnesses range from mild _____ to some forms of _____ and include several other severe and _____ diseases. • _____ of these illnesses varies; some are transmitted by human _____, while others are transmitted through _____ or an _____ bite. • _____ and some _____ drugs are used to control and prevent the spread of _____ diseases. • Examples: _____, flu, _____, polio, _____, and many many more.
What are bacteria?	<ul style="list-style-type: none"> • Bacteria are _____. About _____ species of bacteria are living in your _____. • Bacteria are _____ single-celled organisms. • They can _____ in a variety of places (with _____, _____ oxygen, extreme _____, extreme _____). • Bacteria reproduce through _____, a form of asexual reproduction. Under optimal conditions, bacteria can _____ and _____ extremely rapidly, and bacterial populations can _____ very quickly. • Scientists classify bacteria by their _____. <ul style="list-style-type: none"> ○ _____-shaped: occur in single strands ○ _____-shaped: may occur singly or in chains ○ _____-shaped: may occur singly, in pairs, chains, or clusters • _____ are used to _____ (slow/stop) the growth of bacteria. Because antibiotics have been _____, many diseases that were once _____ to treat are becoming more _____ to treat. Antibiotic _____ in bacteria occurs when _____ bacteria survive an antibiotic treatment and give rise to a _____ population.

	<ul style="list-style-type: none"> • Examples: _____, staph infections, pneumonia • Some bacteria, such as _____ and decomposers are _____ to other organisms. <ul style="list-style-type: none"> ○ Some bacteria break down the matter in _____ bodies and _____ materials. ○ Ex: Bacteria are used to clean up _____ by decomposing oil. ○ Bacteria can change materials that do not come from _____ things and make them _____ for other organisms. <ul style="list-style-type: none"> ▪ Ex. _____ fixation—changes nitrogen _____ into a form _____ can use
<p>What are fungi?</p>	<ul style="list-style-type: none"> • Fungi are _____, nonphotosynthetic organisms (they don't go through _____, they have to eat _____), and most are _____. • Most fungi _____ both sexually and asexually (producing _____). This provides an adaptive _____. When the environment is _____ rapid _____ reproduction ensures an increased spread of the species. During environmental _____, _____ reproduction ensures genetic variation, increasing the likelihood that offspring will be better _____ to the new environmental conditions. • Fungi can sometimes attack the _____ of living _____ and _____ and cause disease. Fungal _____ is a major concern for humans because fungi attack not only us but also our _____ sources, making fungi _____ with humans for nutrients. • _____ spores can cause mild to serious _____ in some people. Billions of mold spores can become _____ and may then be inhaled, triggering an _____ reaction. • Examples: black mold, fungal _____
<p>What are protists?</p>	<ul style="list-style-type: none"> • Protists are mostly _____-celled, microscopic organisms mostly found in _____ <ul style="list-style-type: none"> ○ Include _____ organisms, but don't belong to the other kingdoms. ○ Protists play many _____ in their environment. <ul style="list-style-type: none"> ▪ Some are _____ that also produce _____ which is beneficial to many other organisms. ▪ Some protists act as _____ and can cause disease in many organisms, including _____. • _____ is a protist that uses _____ as an energy source. • Protozoa are _____-like protists that eat other organisms or _____ parts of other organisms. <ul style="list-style-type: none"> ○ Many forms, all _____-celled ○ _____ use _____ as an energy source ○ Must _____ around to obtain energy ○ Ex. Paramecium: Have _____, which are short, wavy strands of “_____” ○ Some protozoa have _____, which are whip-like “_____” used to swim. Ex: _____ • Many protists live as _____, some of which cause _____. <ul style="list-style-type: none"> ○ _____ is one of the world's most significant diseases, and is caused by a _____. A mosquito carries the parasite from human to human through _____.
<p>What are parasites?</p>	<ul style="list-style-type: none"> • A _____ is an organism that _____ on another individual, known as the _____. They either live _____ or _____ their host's _____. • Parasites have _____ to efficiently feed off of the host's body, so they are usually very _____. Tapeworms are so specialized for a parasitic _____ that they do not even have a _____ system. They live in the small _____ of their host and absorb _____ directly through their _____ • Infectious disease may also be caused by animal _____, which may take up residence in the _____, _____, or tissues.