**UNIT 8 IMMUNITY AND MICROORGANISMS TEST**

Prokaryote

Eukaryote

* Prokaryotes vs. Eukaryotes
	+ Prokaryotes – NO membrane-bound organelles), Eukaryotes – have membrane-bound organelles
		- Membrane organelles include nucleus, chloroplast, mitochondria
	+ Prokaryotes evolved before Eukaryotes
* 6 Kingdoms – Archaebacteria, Eubacteria, Protista, Fungi, Plants, Animals
	+ **Archaebacteria** – unicellular, live in extreme environments
	+ **Eubacteria** – true bacteria (some cause diseases such as strep throat and *E. coli* food poisoning)
	+ **Protista** – are eukaryotes so they have membrane-bound organelles, are many different sizes and shapes, can be one-celled or many cells, can be autotrophic or heterotrophic
		- **Algae** – protists that can perform photosynthesis



* **Flagella** – Whiplike tails that some protozoans use to move
* **Cilia** – little hairs around outside of organism used for movement (movement also called locomotion)
	+ **Paramecium** – example of protozoan that has cilia

Paramecium with Cilia

* **Bacteria**
	+ Called “nature’s recyclers” because they break down dead organisms
	+ They are prokaryotic – meaning NO membrane-bound organelles (no nucleus, no mitochondria, no chloroplasts, etc.)
	+ They are unicellular
	+ Used in food production, help us to digest foods, help plants to get nitrogen from the air
* **Viruses**
	+ Have many different size and structures
	+ **Not living** – not made of cells, cannot make proteins, cannot use energy (but study in Biology since they are active inside living cells)
	+ Viruses are made of proteins and nucleic acids
	+ **Lytic infection**- ends when new viruses burst out of the infected cell (also called “host cell”), this destroys the host cell right away
	+ **Lysogenic viruses** – embed DNA into host cell’s DNA, do NOT kill cell right away
* Immunity
	+ **Pathogens** are foreign things that are bad for the body – bacteria, virus
	+ Body responds to infections first with extra mucus, sweat, tears
	+ **Active immunity** – a person is exposed to antigens (antigens are anything that causes your body to make antibodies, such as bacteria and viruses) and then makes **memory B cells and antibodies** against that antigen
		- When already have memory B cells against a certain pathogen, then you are less likely to get the disease a second time
	+ **Passive immunity** – when antibodies in breast milk are passed from mother to baby and help protect nursing babies from many illnesses
	+ **Vaccines** – made from killed or weakened pathogens
		- When a person receives a vaccine, they make antibodies to fight that pathogen
* **Antibiotics** – only kill bacteria NOT viruses
	+ Antibiotics work by interfering with cell processes that are only in bacteria, not in viruses
* **Malaria** – uses a host (mosquito) to transmit disease to humans

**Review**

* **Active Transport** – when need energy to move molecules across a cell membrane (such as the sodium-potassium pump)
* **Passive Transport** – molecules do NOT need energy to move across cell membrane (ex. diffusion, osmosis, facilitated diffusion)
* Liquid fats contain mostly **unsaturated fatty acids** (solid fats have mostly saturated fatty acids)