Hemingway Name:

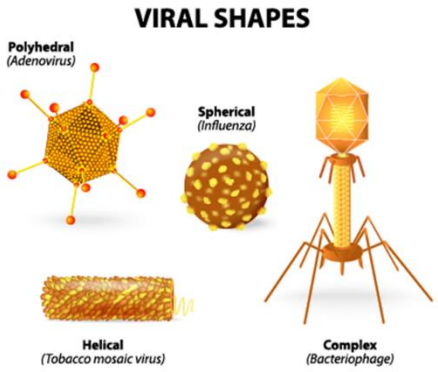
Viruses

Where do they fit in?

Classification

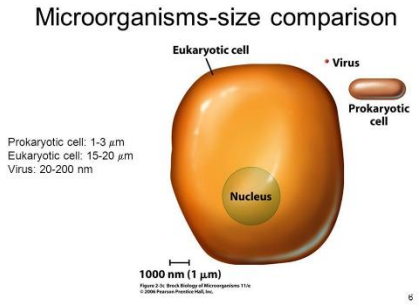
- _____ fit under the 5 kingdom, 3 domain system
- They are simpler than _____
- _____membranes, nucleus or organelles

What is a Virus?



- Particles of nucleic acid, protein and sometimes lipid (fat)
- They can only reproduce by infecting living cells
- Vary widely in size and structure
- All viruses have one thing in common
  - They enter living cells, and once inside use the machinery of the infected cell to produce more viruses

Size

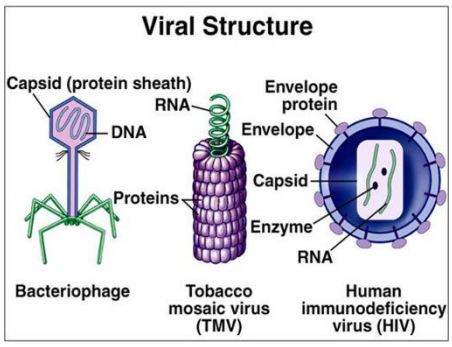


- Viruses are very small, much_____ than bacteria

Viruses

- A Typical virus is composed of a core of _____ surrounded by a _____coat
- The simplest viruses contain only a few genes
- The most complex may have more than_____ genes
  - Humans _____

Structure



- Core: DNA/RNA
- A viruses protein coat is called a _____
- The capsid includes proteins that enable a virus to _____ a host cell
- The capsid proteins bind to_____ on the surface of the cell to "trick" the cell to allowing it inside
  - Once inside, the _____ are expressed

Specificity

- Viruses must bind precisely to proteins on the cell surface and then use that cells genetic system
  - Due to this, most viruses are _____ specific to the cells that they infect
  - IE- Plant viruses infect _____, animal viruses infect only certain species, and bacterial viruses only infect certain types of _____

- Most viruses only infect one host (eg. Measles = humans)
- Some viruses infect more than one host (eg. Rabies)
- Viruses that infect bacteria are called _____

Viral Infection

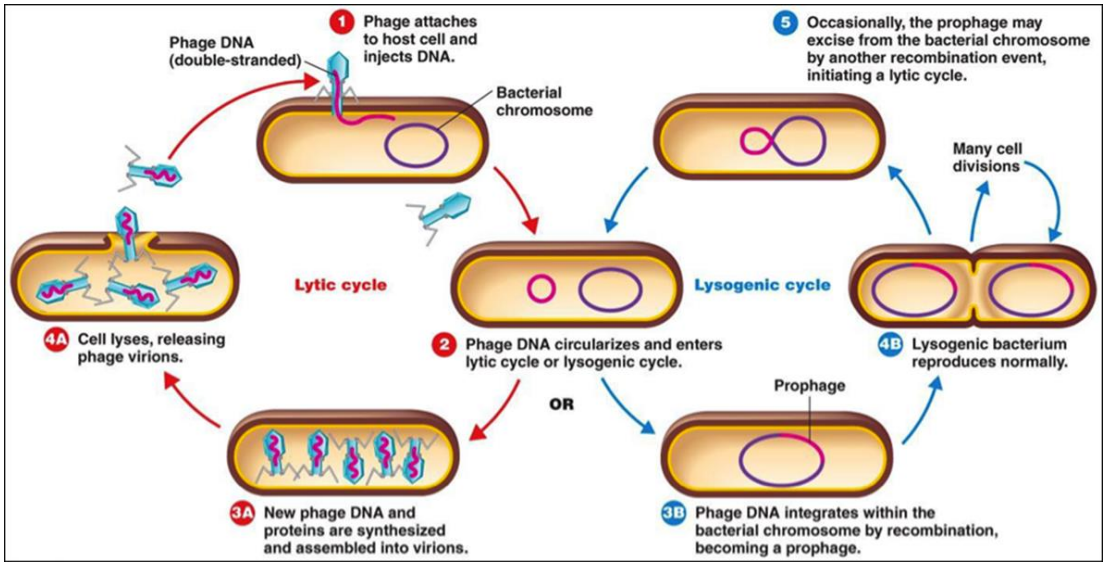
- Once a virus enters a host cell two different processes may occur
  - Some viruses replicate immediately_____ the host cell
  - Some viruses replicate but _____ kill the host cell immediately

Lytic Cycle

- Virus _____and uses host cell to reproduce its genetic information forming duplicate copies of the virus
- The host cell _____ releasing many copies of the identical virus
- Typical lytic cycle takes _____ & produces ~ 200 new viruses

Lysogenic Cycle

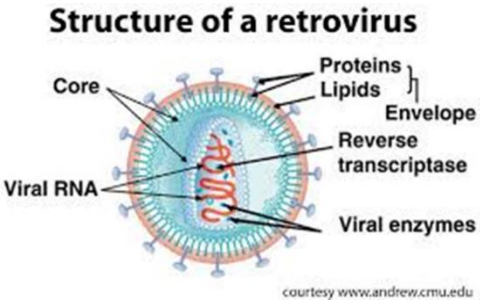
- Genetic information from virus is _____ into the host cell's chromosomes (DNA)
  - Viral DNA=_____
- The viral genetic information _____ along with the host cells DNA
- Virus stays _____ (i.e. asleep) and doesn't affect the function of the host cell
- Can lead to the _____



Hemingway Name:

Retroviruses

- Viruses that contain _____as their genetic information
- When they infect a cell
  - Produce a _____ copy of their RNA
  - This DNA is _____into the DNA of the host cell
  - Genetic information is copied_____
    - HIV Virus



Viruses as Parasites

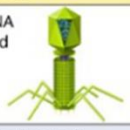
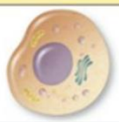
- Viruses _____entirely upon another living organism for its existence, harming that organism in the process

Are Viruses Living?

- Characteristics of living things
  - Made up of cells
  - Reproduce
  - Have a universal genetic code
  - Grow and develop
  - Obtain and use materials and energy
  - Respond to environment
  - Maintain a stable internal environment
  - Change over time

Non Living

Viruses and Cells

Characteristic	Virus	Cell
Structure	DNA or RNA core, capsid 	Cell membrane, cytoplasm; eukaryotes also contain nucleus and organelles 
Reproduction	only within a host cell	independent cell division either asexually or sexually
Genetic Code	DNA or RNA	DNA
Growth and Development	no	yes; in multicellular organisms, cells increase in number and differentiate
Obtain and Use Energy	no	yes
Response to Environment	no	yes
Change Over Time	yes	yes