Name_____Date_____Hour_____

Virus Webquest

Introduction: Viruses are both fascinating and a bit scary. This web study will give you a brief introduction to viruses in general and a particular virus that has been in the news throughout the spring and summer months. Explore, learn, enjoy!

Part 1: Virus Introduction

Go to http://www.biology4kids.com/files/micro_virus.html

1. What can viruses do?
   a.

   b.

   c.

2. What are the basic parts of a virus?
   a. Small piece of _____ (never both). That strand of _____ is considered the core of the virus.
   b. The second big part is a _____ to protect the nucleic acid. That coat is called the _____. The capsid protects the core but also helps the virus infect new cells.
   c. Some viruses have another coat or shell called the _____. The envelope is made of lipids and proteins in the way a regular cell membrane is structured. The envelope can help a virus get into systems unnoticed and help them invade new host cells.
3. What are the three basic structures of viruses?
   a.

   b.

   c.

4. What are two things smaller than a virus?
   a.

   b.

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Go to http://micro.magnet.fsu.edu/cells/virus.html

1. Are viruses living organisms?

2. Label the following diagram.

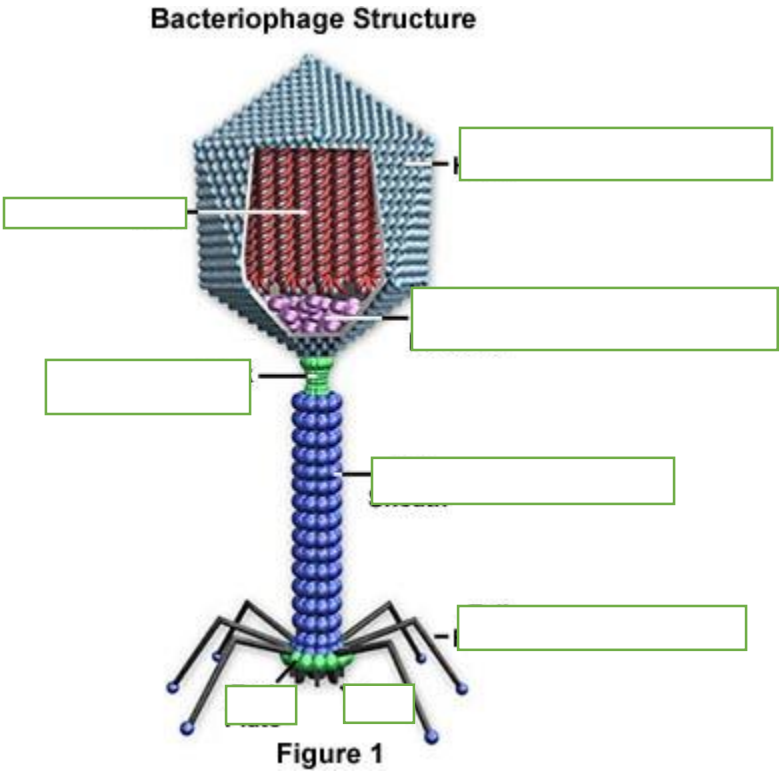

Figure 1

3. Without a _____, viruses cannot carry out their life-sustaining functions or reproduce.
4. Viruses are generally _____by the organisms they _____, animals, plants, or bacteria.
5. Viruses are further classified into families and genera based on three structural considerations:
   1) the type and size of their _____,
   2) the size and shape of the _____,
   3) whether they have a lipid _____ surrounding the nucleocapsid (the capsid enclosed nucleic acid).
6. Who is credited with discovering the virus? Which virus was he working with?
7. Name two other viruses and how they infect an individual.

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Part 2: Virus Infection

Go to http://science.howstuffworks.com/life/cellular-microscopic/virus-human2.htm

The Lytic Cycle

1. A virus particle _____ to a host cell.
2. The particle _____ its genetic instructions into the host cell.
3. The injected genetic material _____ the host cell's enzymes.
4. The enzymes _____ for more new virus particles.
5. The new particles _____ the parts into new viruses.
6. The new particles _____ from the host cell.

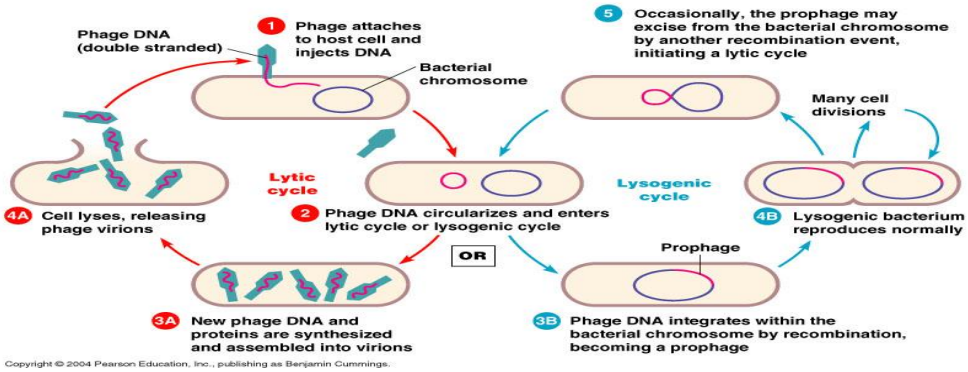
The Lysogenic Cycle

1. Once inside the host cell, some viruses, such as herpes and HIV, do not reproduce right away. Instead, they _____ into the _____.

2. When the host cell reproduces, the viral genetic instructions get _____ into the host cell's offspring.

3. The host cells may undergo many rounds of reproduction, and then some environmental or predetermined genetic signal will stir the "sleeping" viral instructions.

4. The _____ genetic instructions will then _____ the host's machinery and make new viruses as described above.



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Part 3: Bacteria vs. Viruses

Go to http://archives.microbeworld.org/microbes/virus_bacterium.aspx

Complete the following table comparing viruses and bacteria.

Characteristic	**Bacteria**	**Viruses**
Larger or smaller?		
More or less complex?		
Cell membrane and/or cell wall?		
DNA or RNA or both?		
Reproduce independently?		
Cause diseases?		