Virus structure & Life Cycles

The sizes of ribosomes, viruses and bacteria may be better understood with the following picture analogy:

1. Label the animal virus and bacteriophage below (protein capsid, nucleic acid, tail fiber, glycoprotein)

2. What is nucleic acid?
   a. RNA and/or DNA
   b. Proteins
   c. Carbohydrates
   d. Lipids

3. What is the viral envelope made of?
   a. Proteins
   b. Lipid bilayer
   c. Nucleic Acid
   d. Marshmallows

4. The nucleic acid found in viruses is:
   a. DNA or RNA, not both
   b. Only DNA
   c. Only RNA
   d. DNA and RNA in same virus
5. T or F  Viruses have cell walls like plant cells.
6. T or F  Viruses have organelles (ribosomes, mitochondria, etc.) like animal cells.
7. T or F  Viruses are much smaller in size than other cells.
8. T or F  Viruses are living multi-cellular organisms

9. The different proteins found on the exterior of the envelope or capsid are:
   a. Glycerin
   b. Antennas
   c. Lipids
   d. Glycoproteins

Using the Venn diagram below compare and contrast structure of viruses, prokaryotic and eukaryotic cells by placing the terms where they belong.

Genetic Material (DNA, RNA)  Mitochondria
Cell Membrane               Tail fiber for attachment
Cell Wall                   Plasmid DNA
Capsid                      Glycoprotein
Nucleus                     Ribosomes

Diagram:
Viral Reproduction

Go to Biology STAAR Blitz page at [www.biologybynapiern.com](http://www.biologybynapiern.com) and find the link “Virus Life Cycle” or type in the following URL: [http://www.classzone.com/cz/books/bio_09/resources/htmls/animated_biology/unit6/bio_ch18_0550_ab_virus.html](http://www.classzone.com/cz/books/bio_09/resources/htmls/animated_biology/unit6/bio_ch18_0550_ab_virus.html)

1. What are the two life cycles of a virus?

2. What does the virus inject into the host cell?

3. Watch the two videos and explain the difference between the two life cycles (do NOT just say one is longer than the other).

4. In which cycle does the viral DNA insert itself into the cell’s DNA?

5. Which life cycle remains dormant for a time?