

Explain how the Cell Theory helps scientists to confidently answer the question, "Are viruses alive?"

Cell theory gives basic definition of life (cells = life)

Complete the box-and-t-chart below to compare and contrast viruses with living things.

- Include at least 3 similarities and
- at least 6 differences.

(prokaryotes, like bacteria)

<p>Both...</p> <ol style="list-style-type: none"> 1. have genetic material 2. have proteins 3. can make copies

Viruses	Living Things (including Bacteria)
1. don't grow or reproduce <u>w/out a host</u>	1. grow & reproduce independently
2. don't respond to stimuli or maintain homeostasis	2. do respond & do homeostasis
3. simpler & smaller	3. larger & more complex w/ cell membrane & ribosomes
4. no energy source	4. use energy
5. not all viruses have DNA	5. all have DNA (no exceptions)
6. no carbon source	6. all use & contain carbon

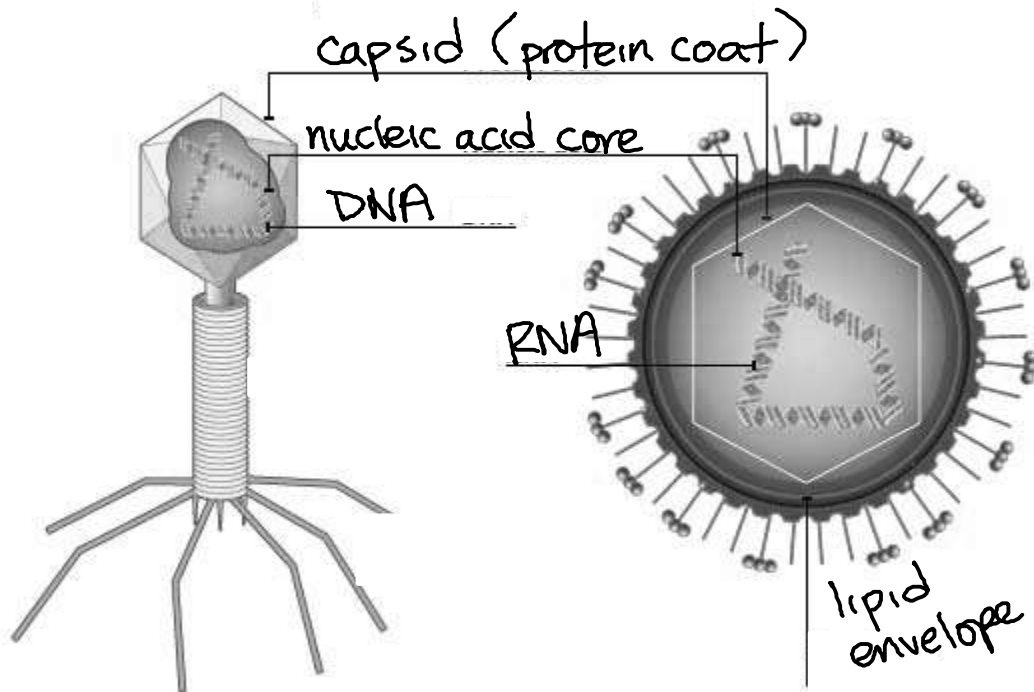
Why were viruses discovered so much later than bacteria? (Hint: Viruses are observed using an electron microscope, which can magnify images up to 10,000,000 times!)

too small (TMV was 1st to be seen)

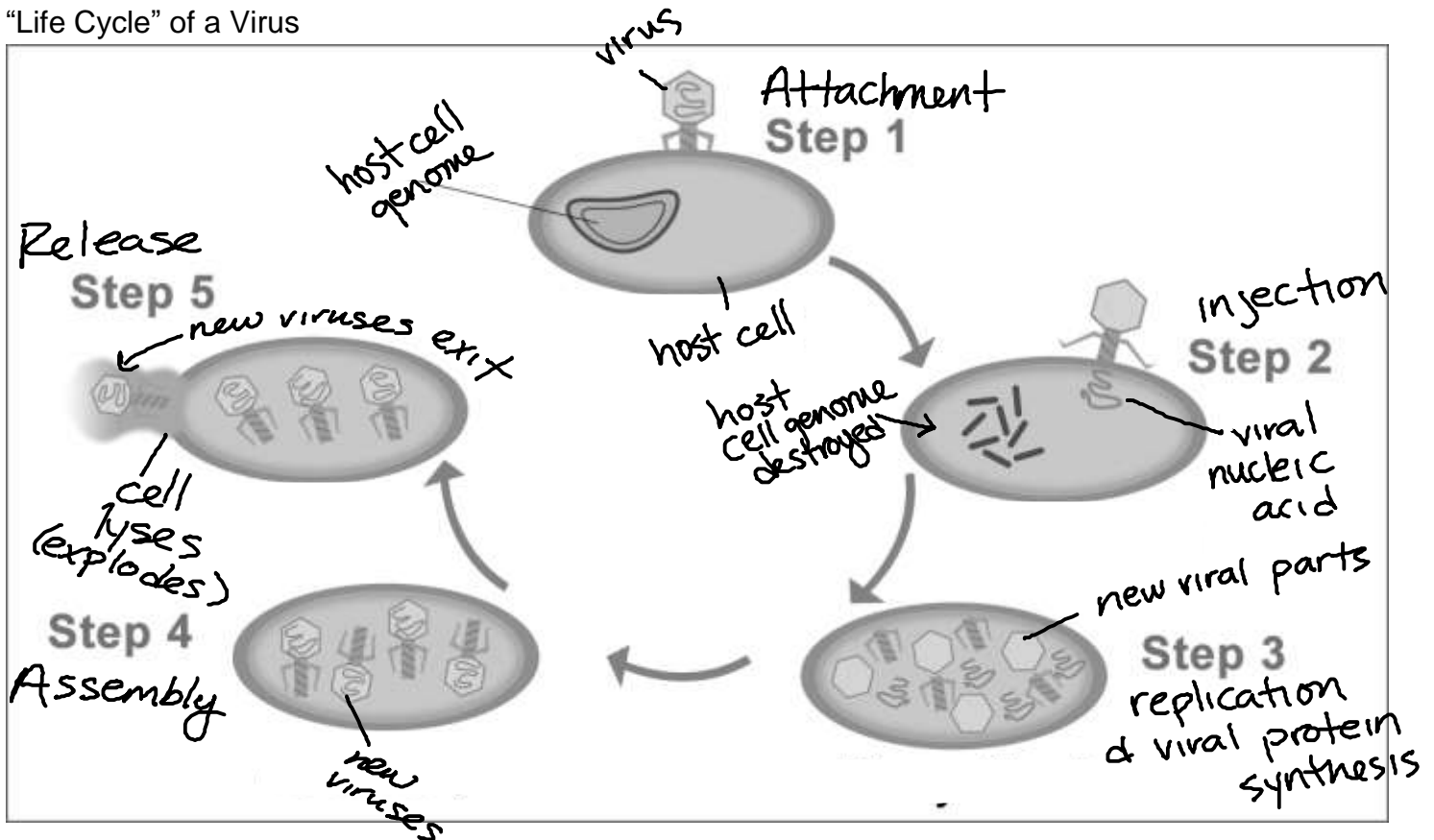
What most likely appeared on earth first – viruses or cells? Explain your prediction. (Hint: Viruses require a host cell to reproduce.)

Cells, b/c viruses need cells to replicate

Structure of a Virus



"Life Cycle" of a Virus



Why is it important to understand the structure and functioning of viruses?

to know how to treat & prevent infection