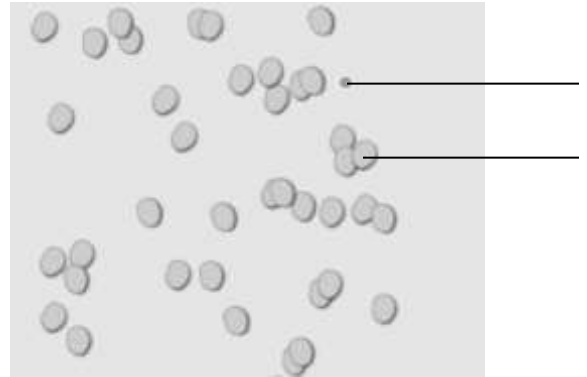


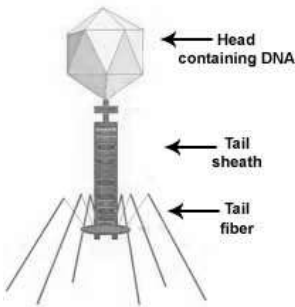
Student Exploration: Virus Lytic Cycle

Gizmo Warm-up

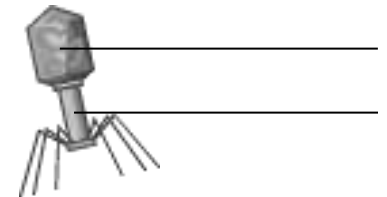
A **virus** is a microscopic particle that can infect a cell. Viruses are primarily composed of a protein coat, called a **capsid**, and **nucleic acid core**. In the *Virus Lytic Cycle Gizmo™*, you will learn how a virus infects a cell and uses the cell to produce more viruses.



1. Viruses are extremely small. A typical virus is about 100 times smaller than a single cell, such as a bacterium. **Label the virus and a bacterial cell in the image at right.**



2. **Bacteriophages** are viruses that infect bacteria. Based on the diagram at left, **label the capsid and the nucleic acid core.**



Activity A: Lytic cycle	<u>Get the Gizmo ready:</u> • If necessary, click Reset (↺).	
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Introduction: Unlike living organisms, viruses cannot reproduce on their own. Instead, viruses infect **host cells**, taking over the cell's machinery to produce more viruses. This process is called the **lytic cycle**.

Question: What are the steps of the lytic cycle?

1. Observe: Use the navigation arrows on the DESCRIPTION tab to read about the stages of the lytic cycle. Using your own words, summarize each step of the cycle.

Step		Summary
1		



2		
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2. Summarize: Write numbers 1 – 5 to put the steps of the viral life cycle in chronological order below.

- Assembly (of new viruses)
- Attachment (of a virus to the outside of a host cell)
- Injection (of viral genetic material)
- Release of new viruses (due to lysis of the host cell)
- Replication (of viral genes) and synthesis (of viral proteins)

3. Think and discuss: Why can't a virus reproduce on its own? _____

4. Explain: What are **three** differences between viruses and bacteria?

5. Extend: Antibiotics are used to cure bacterial infections like Streptomyces (which causes Strep Throat). Antibiotics kill bacterial cells by attacking their cell membranes. Would they also help cure a viral infection? Why or why not?

