KEY CONCEPT

Viruses exist in a variety of shapes and sizes.
Viruses differ in shape and in ways of entering host cells.

- Viruses have a simple structure.
  - genetic material
  - capsid, a protein shell
  - maybe a lipid envelope, a protective outer coat
• Bacteriophages infect bacteria.
• Viruses enter cells in various ways.
  – bacteriophages pierce host cells
• Viruses enter cells in various ways.
  – viruses of eukaryotes enter by endocytosis
• Viruses enter cells in various ways.
  – viruses of eukaryotes also fuse with membrane
Viruses cause two types of infections.

- A lytic infection causes the host cell to burst.

The host bacterium breaks apart, or lyses. Bacteriophages are able to infect new host cells. The viral DNA directs the host cell to produce new viral parts. The parts assemble into new bacteriophages.

The viral DNA forms a circle.

The bacteriophage attaches and injects its DNA into a host bacterium.

The virus may enter the lysogenic cycle, in which the host cell is not destroyed.
A lysogenic infection does no immediate harm.

The prophage may leave the host’s DNA and enter the lytic cycle.

Although the prophage is not active, it replicates along with the host cell’s DNA.