

### ③ Viruses

#### What You'll Learn:

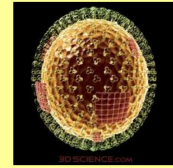
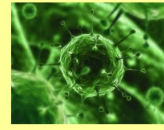
Explain how a virus makes copies of itself.

Identify the benefits of vaccines.

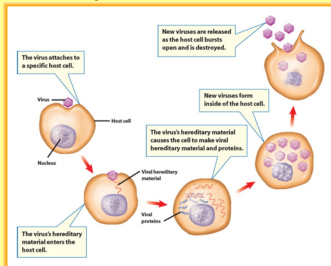
Investigate some uses of viruses.

### What are viruses?

\*Heredity material surrounded by protein (nonliving).

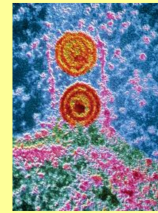


### How do viruses multiply? They take over a host cell and that cell makes the copies



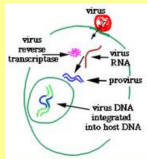
### Active Viruses

\*Virus immediately begins attacking cells creating new viruses and destroys the cell



### Latent Viruses

It does not immediately attack the cell it waits until conditions are right.



Viral DNA becomes part of the host cell's DNA

### How do viruses affect organisms?

\*Viruses affect almost all organisms, usually only specific kinds of cells.



### First Vaccine

Edward Jenner created the first vaccine prepared from the sores of cowpox and used it to prevent smallpox.



### Treating Viral Disease

\*Body creates interferons which create a protein shield that the virus cannot break through.

\*Antiviral medication can be used however the side effects are often worse than the virus.

### Preventing Viral Disease

\*Vaccinate people

\*Improve sanitary conditions

\*Quarantine patients

\*Control animals that spread disease

### Research with Viruses

\*Gene therapy uses a virus to substitute normal genes for defective genes

