

The *Pathogens and Disease CPU* introduces students to disease-causing agents and epidemiology. Students culture bacteria and fungi and use a microscope to examine and classify the microorganisms they grow. Students explore diseases such as smallpox, rabies, and AIDS to better understand the effect of pathogens and disease on the population at large.

Through a simulated disease outbreak, students perform the necessary procedures to identify and contain an epidemic. Activities include culturing and identifying bacteria and fungi, analyzing data such as patient interviews and questionnaires, creating an epidemic curve, and calculating attack rate and relative risk for various exposures.



### Areas Covered

- ◆ Germ theory
- ◆ Overview of the immune system
- ◆ Collection and examination of contaminated water
- ◆ Bacteria, viruses, and fungi
- ◆ Bioterrorism and the CDC category A agents
- ◆ Descriptive epidemiology, including:
  - Graphing and interpreting an epidemic curve
  - Creating and analyzing a spot map
  - Analyzing populations affected
- ◆ Analytic epidemiology, including:
  - Performing cohort studies and calculating attack rates
  - Performing case-control studies and calculating relative risk
- ◆ Disease prevention techniques, including:
  - Quarantine
  - Variolation, inoculation, and vaccination
  - Aseptic technique
  - Skills and knowledge to aid students in various HOSA competitions



### Career Pathway Unit Includes:

Pathogens and Disease CD with a Digital Instructor's Overview Booklet, Bacteria CD, Butane Burner, Incubating Microorganisms Textbook, Skills Cart™, Microbe Scavenger Hunt Lab, Microscope, Pathophysiology for the Health Profession Textbook, Protista and Fungi, Viruses CD