

Life Sciences 11

LG 8

Pathogens and Diseases Project

Viruses vs. Bacteria: How Do They Make Us Sick?

Many human illnesses are caused by **pathogens**—harmful microorganisms such as **bacteria** or **viruses**. These pathogens can infect the body, damage cells, and disrupt normal functions, leading to disease. In this project (LG 8), you will research a disease caused by **either a virus or a bacterium** and teach others about it through a creative presentation.

Your goal is to design a **Prezi, PowerPoint, or Medical Brochure/Pamphlet** (like something you might see in a doctor's office or clinic). Your product should be **clear, visually engaging, and informative**. By the end, the viewer should understand what the disease is, how it infects the body, its symptoms, treatment, and prevention.

Disease Choices

You may choose **any** viral or bacterial disease. If the disease you want to research is not listed—go for it! Just let your teacher know before you begin.

Bacterial Diseases

1. Cholera
2. Leprosy
3. Meningitis (bacterial)
4. Scarlet Fever
5. Strep Throat
6. Tuberculosis
7. “Flesh-Eating Disease” (Necrotizing Fasciitis)
8. Syphilis
9. Gonorrhea
10. Botulism
11. Tetanus

Viral Diseases

12. Chickenpox
13. Mumps
14. Meningitis (viral)
15. Measles
16. Smallpox
17. Rabies
18. Influenza
19. Hepatitis
20. HIV/AIDS
21. Herpes
22. Polio

Project Requirements

Once you have selected your disease, your presentation **must include the following**:

1. **The Pathogen**
 - State the name of the bacterium or virus that causes the disease.
 - Include a **labelled drawing or diagram** of its structure.
2. **Target in the Body**
 - What part of the body does it infect?
 - Describe the **type of human cell** it targets and whether the pathogen destroys or damages the cell.
3. **How Infection Happens**
 - Include a diagram showing how the pathogen infects the cell.
 - Label the cell and its key organelles involved in the infection process.
4. **Symptoms**
 - List **all symptoms** and describe them clearly.
 - Highlight the **most common or defining (“classic”)** symptoms that help identify the disease.
5. **Treatment**
 - Describe current treatment options.
 - Explain **how the treatment works at the cellular level**.
6. **Cure or Prevention**
 - Is there a cure and/or a vaccine?
 - If yes, name it and explain how it works.
7. **Brief History**
 - Where and when was this disease first discovered?
 - Include important historical facts (e.g., outbreaks, number of people affected, major events in its history).
8. **Sources**
 - List **at least 4 reliable sources/websites** used in your research.
 - Use proper citation format (MLA, APA, or simple link list is acceptable).

Tips for Success

- Use visuals: diagrams, images, charts, timelines, and graphs.
- Keep the language clear but scientific.
- Use colour, headings, and spacing to make your project easy to read.
- Double-check information for accuracy—especially for symptoms and treatments.