



WATERBORNE DISEASE: A GLOBAL PERSPECTIVE

GRADES 6-12

MATERIALS

Research tools: dictionaries, encyclopedias, computers with internet access if possible

BACKGROUND

Bacteria are not the only microorganisms that can end up in water resources as a result of fecal contamination: there can also be protozoa, nematodes, viruses, and other parasitic organisms. We're so accustomed to having clean water here in the US that we don't think about it twice, but elsewhere, waterborne disease is a serious problem. This open-ended research activity gives a "big picture" view to raise students' awareness of water quality globally, global sanitation issues, the prevalence of waterborne disease, and related socioeconomic impacts.

INSTRUCTIONS

1. Have students work in groups to research different waterborne pathogens. Assign one of the following pathogens to each group:
 - Nematodes of the genus *Dracunculus*
 - The protozoa *Cryptosporidium parvum*
 - Protozoa of the genus *Entamoeba*
 - The protozoan parasite *Giardia lamblia*
 - Trematodes of the genus *Schistosoma*
 - Bacteria of the genus *Salmonella*
 - Bacteria of the genus *Legionella*
 - Hepatitis A virus
 - Coronavirus
 - Poliovirus
2. Research topics for each group should include:
 - Detailed description of the pathogenic organism(s)
 - The diseases that the target pathogen causes and vectors of transmission
 - Descriptions of the diseases, including symptoms (Note: Be prepared that this can sometimes result in graphic descriptions and images.)
 - Where geographically these diseases and organisms are found
 - What can be done to stop or slow the spread of the disease
3. Student research findings can be displayed in group presentations, poster displays, or informational flyers.