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Curriculum Guide **History & Science of Epidemic Disease**

Course Description

Students enrolled in the History and Science of Epidemic Disease will examine the interactions and interrelationships of disease, healers, and patients in an historical context and develop a basic understanding of the biological mechanisms of infectious disease. Students will study the connections between epidemic disease, history, politics, and public health. The course will present an overview of medicine and disease from the Middle Ages through the present. Social, cultural, local, international,

Content Standards

As a result of this course, students will be able to:

1. Identify the causal agents of disease.
2. Identify clinical features and symptoms of major diseases known throughout human history.
3. Understand the anatomy and physiology of the human immune system.
4. Identify the role of disease/epidemics in human history and the impact on civilization from the Black Death in the Middle Ages to modern times.
5. Understand the role of medicine and public health in dealing with disease/epidemics.
6. Understand the role of environmental factors in disease prevention and causation.
7. Understand and apply the concept of biology and ecology in dynamics of disease transmission and control.
8. Understand the role that individuals and organizations play in combating disease.
9. Learn what preventative and control measures have been developed and implemented to reduce mortality and morbidity in the human population.
10. Understand techniques, processes and interventions regarding how disease prevention efforts can be applied successfully.
11. Identify equipment used in a microbiology lab.

Skills

1. Accurately perform microbiology lab techniques.
2. Analyze issues from personal, global, and historical viewpoints.
3. Align the core subjects of history and science with global awareness and civic and health literacy.
4. Understand and apply the scientific method to explain and demonstrate an understanding of disease.
5. Frame, analyze and synthesize information in order to solve problems and answer questions.
6. Demonstrate originality and inventiveness in work.
7. Learn independently, demonstrating initiative and self direction, diligence and a positive work ethic.
8. Learn effectively in collaboration with other students, adapting to varied roles and responsibilities.
9. Read, listen and observe a variety of works that describe the history of disease.
10. Examine philosophical and ethical frameworks as a guide to action.
11. Recognize and respect the physical, social and cultural differences of others.
12. Write, speak and present effectively, with an awareness of context, purpose and audience.
13. Develop, implement and communicate new ideas to others.
14. Engage in a free and open exchange of ideas.
15. Express ideas, feelings and beliefs through the arts.
16. Understand and practice the concepts of personal physical fitness and good health.
17. Use technology as a tool to research, organize, evaluate and communicate information.

Subject History and Biology **Course** High School History & Science of Epidemic Disease

Units	Essential Questions	Key Activities MAY include:
Introduction to Epidemic Disease	How do diseases emerge and reemerge? What precautions can reduce the risk of disease?	Epidemiological Survey (ex. Hand Washing, Masks) Microbes @ RMHS Lab Report Defining Epidemics Socratic Seminar Modern Epidemic Case Study
Black Death	How has disease influenced human history and society? How has human history and society influenced disease? How have people perceived, experienced and coped with disease? How do organisms defend themselves against disease?	Save the Last Word: Distant Mirror Plague in 21st Century One Pager Unit Test
Colonial Disease and Smallpox in Boston	What made the Europeans accidental conquerors? How do selected Boston sites help us to understand the historical context and broader history of colonial Boston and its experience with smallpox?	Paper Wars Socratic Seminar Smallpox Tour Talk Unit Test
Herbal Medicine	What knowledge about treating infectious disease has been learned from the natural world?	Herbal Medicine Lab Report
Cholera	What impacts did urbanization have on epidemics?	Ghost Map Socratic Seminar Cholera in Haiti Journal Article Unit Test
Medical Milestones	How have scientific discoveries advanced the fields of scientific research, medicine and public health ?	Medical Milestones Podcast/Video/ Website and Presentation
Typhoid and Case of Mary Mallon	How should civil liberties be balanced with society's health and safety?	DBQ Style Essay: Marry Mallon, Villian or Victim?
Influenza 1918	What impacts did World War I have on the Influenza pandemic of 1918?	Save the Last Word: Local Impact Influenza 1918 Infographic Unit Test
Mountains Beyond Mountains	One of Dr. Paul Farmer's books is titled, Infections and Inequalities. How are issues related to that title apparent in *Mountains Beyond Mountains*? Is this book optimistic or pessimistic? Explain. What lessons does this book impart? What is global health and why should we care?	Literature Circles Reflection Paper
Discovery of Antibiotics	How did the discovery of antibiotics revolutionize science and the understanding of infectious diseases?	Antibiotic Lab Report
Polio	What are the impacts of better sanitation and hygiene? What factors influence the amount of attention that an epidemic receives?	Unit Test

Units	Essential Questions	Key Activities MAY include:
HIV/AIDS	What societal and political factors influence the global response to HIV/AIDS?	Guest Speaker Biography in a Bag
Coronavirus/COVID 19	What can be learned from our personal and collective experiences with modern pandemic?	Blog

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Science Curriculum Guide Overview

Curriculum Guide	Curriculum guides are public documents aligned with the Massachusetts Department of Education Curriculum Frameworks. They focus on the set of standards that students will learn within certain disciplines at appropriate grade levels. Each area of the curriculum is divided into general strands (broad categories) under which the standards fall. When we discuss "standards-based education" we mean that students are measured against their proficiency and growth towards meeting these standards. Curriculum Guides are intended for teachers, parents, and the wider school community as an overview document of the course of study for the year.
Content Standards	The content standards for this elective interdisciplinary elective were created by the teachers who created the course. They incorporate standards from Massachusetts 2016 Massachusetts Science and Technology/Engineering Curriculum Frameworks for High School Biology and 2018 Massachusetts History and Social Science Framework., as well as standards from college level history and science courses.
Science and Engineering Practices	The integration of science and engineering practices in high school science courses gives students dynamic and relevant opportunities to refine and communicate science understandings to be well prepared for civic life, postsecondary education, and career success.
Essential Questions	Essential questions are questions that are not answerable with an easy answer or a simple instruction. The purpose of essential questions is to provide opportunities for inquiry into the learning and act as an umbrella to anchor the unit/lesson.
Key Activities	Key Activities identified in Curriculum Guides are not intended to be exhaustive, nor are they intended to be prescriptive. The activities identified may function as a menu of curriculum resources from which educators identify the most appropriate tools to utilize in their classrooms.