



FUTURELAB+

LIVING EARTH

*Community Empowerment:
Eradicating Disease*

Overview

Developed in partnership with:
Discovery Education

LIVING EARTH / INHERITED DISEASES

Overview

DRIVING QUESTION

How can an effective outreach campaign educate and empower a community to help eradicate an infectious disease?

OVERARCHING PROBLEM

You will start a community outreach campaign with your team to raise awareness about and help educate community members about an infectious disease that persists within their community.

Important Note: This project does not actually have students post directly to social media platforms due to the sensitivity around using social media in the classroom and the potential issues of having students create social media accounts for this project. Instead, students are creating posts for the social media platform they choose, but will post to a class presentation using communication templates. Options will be suggested for ways to reach the target audience of their social media posts including:

- Having teachers manage a class social media account for the students.
- Asking students to post to school social media account.
- Allowing students to share their social media posts directly to identified community leaders via email or other form of communication.

ESSENTIAL QUESTIONS

How do infectious diseases disrupt our body systems and cause people to become ill?

How do infectious diseases exist and persist within a community?

How can we eradicate a disease from a population of people?

MAJOR PRODUCTS

Individual

Disease Education Report

Partner/Group

Posts and Communication Created for the Disease Education Social Media Posts Slide Deck

PROJECT EVALUATION

Unit Rubric

STUDENT-FACING RESOURCES

Project Information Sheet

Design Journal

National Standards

Next Generation Science Standards

Lesson	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Infectious Diseases	Obtaining, Evaluating, and Communicating Information	ETS1.C: Optimizing the Design Solution	Cause and Effect
Disease Transmission and Cause	Developing and Using Models Obtaining, Evaluating, and Communicating Information	LS1.A: Structure and Function	Systems and System Models
Disease Impact	Planning and Carrying Out Investigations	LS1.A: Structure and Function	Stability and Change
Persistence of Disease	Constructing Explanations and Designing Solutions	ETS1.C: Optimizing the Design Solution	Connections to Engineering, Technology, and Applications of Science
Treatment and Prevention	Constructing Explanations and Designing Solutions Asking Questions and Defining Problems	LS1.A: Structure and Function ETS1.C: Optimizing the Design Solution	Structure and Function
Community Empowerment	Constructing Explanations and Designing Solutions	ETS1.B: Developing Possible Solutions	Connections to Engineering, Technology, and Applications of Science



UNIT 2 CALENDAR

Lesson 1 Day 1 Students work through a series of stations to examine images, data, and infographics that represent how different infectious disease (viral, bacterial, parasitic) affect a community.	L1D2 Students consider the Driving Question and develop N2K questions after they review the Project Information Sheet and Unit Rubric.	L1D3 Students learn about different infectious diseases, then evaluate disease impact before selecting a disease to research and area of focus for their Community Outreach Campaign.	L1D4 Students define success criteria using a collaboration contract. Students unpack the idea of “community” and work as a group to select a community that has been impacted by their disease. This will be the target audience for their Community Outreach Campaign.	L1D5 Students identify the best platform or mode of communication to reach the target audience, then identify roles needed to run a Community Outreach Campaign. Students work in groups to create business profiles for their Community Outreach Campaigns using a platform selected by each group.	
Lesson 2 Day 1 Students examine the similarities and differences among the viruses, bacteria, and parasites that cause infectious diseases. Students uncover whether it is a virus, bacterium, or parasite that cause a specific disease and identify the symptoms, transmission, and effects of their disease.	L2D2 Students identify the body system their disease impacts the most. Students identify the organs that work together to make the body system their disease is connected to function properly. Students identify the type of cells in those organs.	L2D3 Students synthesize what they have learned by completing the Disease Background section of their Disease Education Report.	L2D4 Students work together in their Community Outreach Campaign role to develop a post to raise awareness around the importance of the body system that is affected by the infectious disease that impacts their community.	L2D5 Students participate in a Gallery Walk to provide feedback on the posts and communication. Groups then use that feedback to revise and finalize their posts and communication. Students add their posts and communication to the class Disease Education Communication Posts Google slide.	

UNIT 2 CALENDAR

Lesson 3 Day 1 Students design and run a lab that is used to introduce the concept of homeostasis.	L3D2 Students explore how mitosis helps maintain homeostasis through repairing damaged cells in organs. Students discover how our body's immune system combats disease infection.	L3D3 Students research how the cause of their disease disrupts the homeostasis of someone who has the disease.	L3D4 Students synthesize what they have learned and continue to develop their Disease Education Report by completing the "Disease Impact on the Body" section.	L3D5 Students work together in their community outreach campaign role to develop a post to raise awareness around how the disease disrupts the homeostasis of an infected person's body.	L3D6 Students participate in a Gallery Walk to provide feedback on the communication posts. Groups then use that feedback to revise and finalize their posts. Students add their post to the class Disease Education Communication Posts Google Slides Template, focused on raising awareness around the body system their disease disrupts.
Lesson 4 Day 1 Students examine the environmental and social conditions that allow a disease to exist and persist in a specific community.	L4D2 Students explore health literacy issues within their community. Students examine various reasons distrust of healthcare exists. Students analyze potential environmental conditions that impact disease in the community.	L4D3 Students present their findings from the previous class mini-stations to their group through a jigsaw style presentation. Students research how the government policy and political polarity, health literacy, and environmental conditions in their community are impacting disease spread.	L4D4 Students begin to develop a way to communicate specific environmental and social reasons people continue to be infected by the disease in their community.	L4D5 Students work together in their Community Outreach Campaign role to develop a post to raise awareness around which community context cause is having the greatest impact on allowing the disease to persist in the community.	L4D6 Students participate in a Gallery Walk to provide feedback on the communication posts. Groups then use that feedback to revise and finalize their posts. Students add their post to the class Disease Education Communication Posts Google Slides Template, focused on raising awareness around the community context cause that has the greatest impact on disease persistence.

UNIT 1 CALENDAR

Lesson 5 Day 1 Students study how vaccines are developed and how they enable disease immunity.	L5D2 Students learn about the different types of proteins with an emphasis on the defense proteins antigens and how they fight disease. Students begin investigating how mRNA vaccines cause the body to create disease-specific antigens by learning about the first step in protein synthesis (transcription).	L5D3 Students finish their investigation into how mRNA vaccines cause the body to create disease-specific antigens by learning about the final step in protein synthesis (translation).	L5D4 Students research specific treatments used for people infected by their disease.	L5D5 Students continue to develop their Disease Education Report by completing the Disease Treatments section where they recommend which treatments can best help eliminate the disease from the community.	L5D6 Students work together in their Community Outreach Campaign role to develop a post to raise awareness around specific disease treatments.	L5D7 Students participate in a Gallery Walk to provide feedback on the communication posts. Groups then use that feedback to revise and finalize their posts. Students add their post to the class Disease Education Communication Posts Google Slides Template, focused on raising awareness around medical treatments.
Lesson 6 Day 1 Students consider how to develop an effective pitch. Students work within groups to develop their pitch presentation by reviewing their work and posts from the previous lessons.	L6D2 Students present their pitch plan to a student in another group during a feedback routine. Groups use peer feedback to revise and improve their pitch plan.	L6D3 Students observe a fishbowl presentation of another group delivering their pitch. Groups use this fishbowl presentation demonstration to improve and finalize their own pitch presentations.	L6D4 Students deliver their pitch presentations in this culminating moment of the unit.	L6D5 Students celebrate and reflect on their learning and collaboration with their group members.		