

RESOURCE LIBRARY  
LESSON

## Staying Healthy

Students draw on real-world examples of public health action plans to develop their own community action plan for a response to an outbreak of a specific disease. This lesson is part of the *Menacing Microbes* unit.

**GRADES**

6 - 8

**SUBJECTS***Biology, Health, Social Studies, Civics***CONTENTS**

3 Activities

## In collaboration with



### ACTIVITY 1: CREATING AN ACTION PLAN TO PREPARE FOR AN OUTBREAK | 50 MINS

## DIRECTIONS

*This activity is part of the *Menacing Microbes* unit.*

**Unit Driving Question:** *How does a community get ready for an outbreak?*

**Lesson Driving Question:** *How can we plan to stay healthy in the future?*

**1. Analyze a real-world example of an action plan to learn about the people involved in a response to an outbreak in a dense urban area.**

- Set the purpose for this step by telling students that you are going to share with them real-world examples of community action plans for disease outbreaks. Many places around the world have action plans for responses to infectious diseases. Some of these plans are for specific diseases, some are designed to respond to outbreaks in a more general way. The example documents for this lesson are from more general responses to disease outbreaks.
- Share the [San Francisco Infectious Disease Emergency Response](#) chart and the [San Francisco Understanding the Infectious Disease Emergency Response Structure](#) table with project groups.
  - Explain to students that they will not need to include this level of detail in their action plans, but this information is intended to give them a sense of all of the different kinds of people accounted for in an action plan developed for a large city in the United States.
  - Students will use this information to think about what kinds of teams of people they might want to include in their action plans.
- Model for students how to use these documents in order to identify appropriate teams involved in a response plan.
  - Say: *To locate the source of the disease and monitor how it is spreading, I will need to use the Epidemiology and Surveillance Branch (pink).*
  - Show students where this team is on the table. Explain that these are the people who will investigate the source of the outbreak and patterns of how it is spreading. Read several of the titles of people on the team and their corresponding roles.
  - Say: *If one response to my disease is quarantine, I will want to include the Disease Containment and Implementation Branch (grey).*
  - Show students where this team is on the table. Explain that these are the people who will coordinate with the community to implement a quarantine. Read several of the titles of people on the team and their corresponding roles.
- In their project groups, have students review the [Infectious Disease Emergency Response](#) chart and the [Understanding the Infectious Disease Emergency Response Structure](#) table of people included in the Infectious Disease Emergency Response for San Francisco.
  - To guide student groups' reading through these documents, have each group choose one proactive and one reactive response to think about who would be involved from this flow chart following your modeling examples. Each group should select different response measures to analyze.

- After reading, have student groups share with the class what each response measure is, what teams are responsible, and what each team would do.
- Record this information on the board for the whole class to use as a resource.

## **2. Analyze a real-world example of an action plan to learn about the steps included for a large urban area.**

Inform students that their action plan will include a flow chart similar to the one in Figure 1 of the [Regional Acute Infectious Disease Response Plan](#) developed for King and Pierce Counties in the Pacific Northwest of the United States. The flow chart they create will have a corresponding written component that attends to the following categories (also in the sample Action Plan on pages 7-17):

- Activating the Plan
- Notification and Warning
- Coordination
- Lab Testing
- Waste Management (if applicable)
- Mortuary Services (if applicable)
- Monitoring, Isolation, and/or Quarantine
- Demobilization

Students do not need to read these sections of the example in detail but can refer to them if they need help understanding or addressing the category.

## **3. Write an action plan to prepare for a disease outbreak.**

In their project groups, have students use their [Action Plan Research worksheet](#) and all other resources from the Menacing Microbes unit to complete the [Action Plan for Response to Outbreak of Infectious Disease](#) for their particular disease. Resources that students should reference from previous activities are listed on the [Action Plan Resource List](#).

## **Tip**

Add relevant vocabulary to the word wall.

# Tip

Step 1: If additional scaffolding is needed for the San Francisco chart, model thinking about how additional teams from the San Francisco plan are involved in the outbreak response.

# Tip

Step 1: If you can find your local community's action plan for disease outbreak, share it with your students as an additional example.

# Tip

Step 3: Be sure to tell students that they will be testing each other's action plans in the next lesson! This will help increase their sense of accountability for a thorough, high-quality product.

# Rubric

Collect students' action plans and use the [Action Plan Scoring Rubric](#) to assess students' understanding of the content related to their focal diseases. Students will need their action plans for the next activity when they apply their plan to specific scenarios. If you are unable to return these to students in time for their use in the next activity, consider collecting after completing the next activity, "Mobilizing an Action Plan for an Outbreak."

## OBJECTIVES

# Subjects & Disciplines

### Social Studies

- Civics

# Learning Objectives

Students will:

- Create an action plan for community emergency response to an outbreak of their focal disease.

# Teaching Approach

- Project-based learning

# Teaching Methods

- Cooperative learning
- Discussions
- Information organization
- Modeling
- Reading
- Writing

# Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
  - Information, Media, and Technology Skills
    - Information Literacy
  - Learning and Innovation Skills
    - Communication and Collaboration
    - Critical Thinking and Problem Solving
- 21st Century Themes
  - Civic Literacy
  - Health Literacy

# National Standards, Principles, and Practices

## ENERGY LITERACY ESSENTIAL PRINCIPLES AND FUNDAMENTAL CONCEPTS

- D2.Civ.10.6-8:

Explain the relevance of personal interests and perspectives, civic virtues, and democratic principles when people address issues and problems in government and civil society.

# COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

- **CCSS.ELA-LITERACY.RH.6-8.7:**

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

- **Reading Standards for Literacy in History/Social Studies 6-12:**

Key Ideas and Details, RH.6-8.2

- **WHST.6-8.2.A:**

Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.&nbsp;

- **WHST.6-8.2.B:**

Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

- **WHST.6-8.4:**

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

## THE COLLEGE, CAREER & CIVIC LIFE (C3) FRAMEWORK FOR SOCIAL STUDIES STATE STANDARDS

- **D2.Civ.12.6-8:**

Assess specific rules and laws (both actual and proposed) as means of addressing public problems.&nbsp;

- **D2.Civ.2.6-8:**

Explain specific roles played by citizens (such as voters, jurors, taxpayers, members of the armed forces, petitioners, protesters, and office-holders).

- **D2.Civ.6.6-8:**

Describe the roles of political, civil, and economic organization in shaping people’s lives.

### Preparation

## BACKGROUND & VOCABULARY

# Background Information

Just as people plan ahead for inevitable emergencies with fire escape plans and earthquake preparedness plans, having plans to respond to outbreaks of infectious microbial diseases is essential for us to stay healthy. For the development of large-scale responses to emergencies, there are organizations dedicated to the task of creating action plans. The creators of these plans assess all of the available resources in a given area that would be used in a response to an emergency situation. When developing plans for disease outbreak, they consider things such as the health care facilities, communication networks, and leadership that would be most effective in mobilizing a plan effectively. They develop organizational flow charts, roles and responsibilities, and action steps needed for the containment and prevention of diseases.

## Prior Knowledge

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## Recommended Prior Activities

- [Analyzing Disease Outbreaks](#)
- [Getting Sick: How Diseases Spread](#)
- [Proactive Policies and Practices for Disease Control and Prevention](#)
- [Reactive Policies and Practices for Disease Control](#)

## Vocabulary

Term	Part of Speech	Definition
activation	<i>verb</i>	become active or operative.
Centers for Disease Control and Prevention (CDC)	<i>noun</i>	agency, part of the Department of Health and Human Services, whose mission is "to create the expertise, information, and tools that people and communities need to protect their health through health promotion, prevention of disease, injury and disability, and preparedness for new health threats."
coordination	<i>noun</i>	process of organizing people or groups so that they work together well.
demobilization	<i>noun</i>	break up the organization of or disband.
disease	<i>noun</i>	harmful condition of a body part or organ.
lab testing	<i>noun</i>	procedure used to identify or characterize something, conducted under controlled scientific conditions in a lab (also called Laboratory).
monitoring	<i>verb</i>	watch, keep track of, or check.

Term	Part of Speech	Definition
mortuary services	noun	service providing a space in which dead bodies are kept, for hygienic storage or for examination, until burial or cremation.
notification	noun	action of notifying someone or something.
outbreak	noun	sudden occurrence or rapid increase.
rural	adjective	having to do with country life, or areas with few residents.
urban	adjective	having to do with city life.
warning	noun	notice or bulletin that alerts to a hazard.
waste management	noun	collection, disposal, or recycling of materials that people have discarded.

## ACTIVITY 2: MOBILIZING AN ACTION PLAN FOR AN OUTBREAK | 50 MINS

### DIRECTIONS

*This activity is part of the Menacing Microbes unit.*

**Unit Driving Question:** *How does a community get ready for an outbreak?*

**Lesson Driving Question:** *How can we plan to stay healthy in the future?*

#### 1. Use a disease profile to select an outbreak scenario for which to respond.

Inform students that they will be testing each other's action plans against different microbial disease outbreak scenarios.

- Using the action plans that were created in the previous activity, *Creating an Action Plan to Prepare for an Outbreak*, distribute the completed action plans so that each project group has a plan from a group other than their own.
- Distribute one Scramble! packet to each group.
- Have students read the microbial disease profile at the beginning of the action plan they were given.
- Have students use this disease profile to choose an outbreak scenario from the Scramble! packet to test their provided action plan.



**2. Mobilize each other's action plans in response to a novel scenario to test the effectiveness and thoroughness of the plan.**

- Using the Scramble! packet, have students use page four to apply the provided action plan to the chosen microbial disease scenario.
- Have students act as the command center team from the action plan to improvise role-play through the outbreak response.
  - Have students walk through the flow chart in each other's action plans, acting as if they are mobilizing the outbreak response, checking to see that all relevant groups and people are included for an effective response.
- Remind students to not move on to page five of the Scramble! packet without a context card.

**3. Respond to an additional challenge in disease outbreak responses—the role of cultural and geographic context.**

- Soon after students begin to mobilize by enacting their provided action plan, distribute one context card to each group.
- Have students consider the implications of an outbreak of this disease in the specific location in the world as outlined on their context card.
- Students should continue to role-play through the action plan, using the student evaluation rubric on page six of the Scramble! packet to indicate the effectiveness of the plan.
- Students are finished with the assignment when they have completed the demobilization of the team.

**4. Discuss and debrief the activity.**

- Facilitate a whole-group discussion for students to share their responses to the following questions:
  - *What did the action plan that you used do well?*
  - *What surprised you in this activity?*
  - *What did you learn about your own action plan when trying to implement this one?*

- *How important is it for a community to have an action plan like this?*

# Rubric

Collect students' evaluation rubrics to assess their ability to:

1. Implement an action plan against a disease scenario,
2. account for different cultural and geographic factors involved in a disease outbreak, and
3. evaluate an action plan for its effectiveness.

## OBJECTIVES

# Subjects & Disciplines

**Social Studies**

# Learning Objectives

Students will:

- Identify how responses to disease outbreak differ based on cultures and geographic locations.

# Teaching Approach

- Project-based learning

# Teaching Methods

- Cooperative learning
- Discussions
- Modeling
- Simulations and games

# Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
  - Learning and Innovation Skills
    - Communication and Collaboration
    - Critical Thinking and Problem Solving
  - Life and Career Skills
    - Initiative and Self-Direction
    - Social and Cross-Cultural Skills
- 21st Century Themes
  - Civic Literacy
  - Global Awareness
  - Health Literacy
- Geographic Skills
  - Answering Geographic Questions
  - Asking Geographic Questions

# National Standards, Principles, and Practices

## COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

### • CCSS.ELA-LITERACY.SL.9-10.1:

Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

## THE COLLEGE, CAREER & CIVIC LIFE (C3) FRAMEWORK FOR SOCIAL STUDIES STATE STANDARDS

### • D4.6.6-8:

Draw on multiple disciplinary lenses to analyze how a specific problem can manifest itself at local, regional, and global levels over time, identifying its characteristics and causes, and the challenges and opportunities faced by those trying to address the problem.

## Preparation

## BACKGROUND & VOCABULARY

# Background Information

Once disease outbreak response and prevention plans are developed, it is useful to practice them to ensure their effectiveness. Johns Hopkins Center for Health and Security enacted a practice drill that incorporated details of past disasters with a fictional scenario that tasked government officials with making the kinds of immediate decisions that they would need to make in a real pandemic. The officials had to react as the development of the outbreak unfolded according to a script developed by Johns Hopkins. Some of the measures that they discussed involved entry bans from other countries and vaccine distribution. There were people at various levels of implementation involved and a great deal of coordination was needed. The simulation went to the levels of the CDC and National Security Council. In the end, the simulation surfaced numerous gaps in planning and approximately 150 million lives were lost. Knowing how a plan might fail can help with the development of better plans in the future.

## Prior Knowledge

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## Recommended Prior Activities

- [Analyzing Disease Outbreaks](#)
- [Creating an Action Plan to Prepare for an Outbreak](#)
- [Getting Sick: How Diseases Spread](#)
- [Mapping the Spread of Disease in a Community](#)
- [Proactive Policies and Practices for Disease Control and Prevention](#)
- [Reactive Policies and Practices for Disease Control](#)
- [Where You Live Can Impact How You Get Sick!](#)

## Vocabulary

Term	Part of Speech	Definition
Centers for Disease Control and Prevention (CDC)	<i>noun</i>	agency, part of the Department of Health and Human Services, whose mission is "to create the expertise, information, and tools that people and communities need to protect their health through health promotion, prevention of disease, injury and disability, and preparedness for new health threats."

Term	Part of Speech	Definition
demobilize	verb	deactivate, disband; often refers to armed troops, disaster response teams, or similar groups.
disease	noun	harmful condition of a body part or organ.
mobilize	verb	set into motion, assemble for action.
outbreak	noun	sudden occurrence or rapid increase.
vaccine	noun	preparation of a weakened or killed pathogen, or of a portion of the pathogen's structure that upon administration stimulates antibody production against the pathogen but is incapable of causing severe infection itself.

## ACTIVITY 3: EVERYDAY ACTIONS TO PREVENT THE SPREAD OF DISEASE | 50 MINS

### DIRECTIONS

*This activity is part of the Menacing Microbes unit.*

**Unit Driving Question:** *How does a community get ready for an outbreak?*

**Lesson Driving Question:** *How can we plan to stay healthy in the future?*

#### 1. Learn about Global Handwashing Day and National Immunization Awareness Month.

Inform students that, while it is important to have plans in place for outbreaks of infectious diseases, there are proactive measures that can happen in every community year-round. Two of the most effective measures are vaccination and hand washing.

- In pairs, have students read the National Geographic resource about Global Handwashing Day. As students read, have them discuss the following questions with their partner:
  - *What is it?*
  - *Who should do it?*
  - *Where do I do this?*
  - *Why is it important?*
  - *Why might people avoid it?*
  - *How often should I do this?*

- *How can people participate in Global Handwashing Day?*
- While still in pairs, have students read the Health and Human Services article, [Honor National Immunization Awareness Month by Taking Your Best Shot](#). As students read, have students discuss the same questions that they answered for the previous article.
  - *What is it?*
  - *Who should do it?*
  - *Where do I do this?*
  - *Why is it important?*
  - *Why might people avoid it?*
  - *How often should I do this?*
  - *How can people participate in National Vaccine Awareness Month?*

## **2: Create an informational infographic to raise awareness about vaccines or handwashing**

- In pairs, have students choose one of the two practices to create an infographic to display in the community. Students should use the resources from this activity as well as the following resources about vaccines and handwashing:
  - Reading: [Here's Why Vaccines Are so Crucial](#)
  - Timeline: [History of Vaccines](#)
  - Website: CDC, [Show Me the Science - Why Wash Your Hands?](#)
  - Video: [Fight Germs. Wash Your Hands.](#)
- To create their infographic, students can use a school-approved design program or they can create their infographic by hand. The infographic should answer the same questions that students discussed when reading the articles on the two practices.
  - *What is it?*
  - *Who should do it?*
  - *Where do I do this?*
  - *Why is it important?*
  - *Why might people avoid it?*
  - *How often should I do this?*
  - *How can people participate?*

### 3. Debrief and Share.

- Have each pair of students share their infographics with the class. As part of their presentation, students should include:
  - What their topic is (vaccines or handwashing).
  - How they plan to participate in the awareness day or month related to their topic.

## Tip

Step 1: If time permits, watch [this video](#) about Whooping Cough Vaccines created by the US Department of Health and Human Services (HHS).

## Tip

Step 3: Have students display their infographics around the school, local community center bulletin boards, or other community boards that they may have access to.

## Tip

Step 3: If students created poster-sized infographics, they can do a gallery walk to share their work.

## Tip

Steps 1 and 2: Display the guiding questions for the entire class to reference as they read the texts and create their infographics.

## Modification

Step 2: You may want students to explain their infographics in writing. You can have students write a paragraph or one-page document that elaborates on the points made in the infographic.

## Informal Assessment

Use students' infographics to assess students' understanding and ability to communicate the importance of vaccines or handwashing and how they work to prevent the spread of disease.

# OBJECTIVES

## Subjects & Disciplines

### Biology

- Health

### Social Studies

## Learning Objectives

Students will:

- Create an infographic that raises awareness about vaccinations or hand washing.

## Teaching Approach

- Project-based learning

## Teaching Methods

- Cooperative learning
- Discussions
- Hands-on learning

## Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
  - Learning and Innovation Skills
    - Communication and Collaboration
- 21st Century Themes
  - Civic Literacy
  - Global Awareness
  - Health Literacy



# National Standards, Principles, and Practices

## COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

- CCSS.ELA-LITERACY.RH.6-8.2:

Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.

- CCSS.ELA-LITERACY.RH.6-8.7:

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

## THE COLLEGE, CAREER & CIVIC LIFE (C3) FRAMEWORK FOR SOCIAL STUDIES STATE STANDARDS

- D4.8.6-8:

Apply a range of deliberative and democratic procedures to make decisions and take action in their classrooms and schools, and in out-of-school civic contexts.

### Preparation

## BACKGROUND & VOCABULARY

### Background Information

Public health education about disease prevention can be a strong first line of defense against outbreaks of infectious diseases. Education programs can effectively improve the health of many in the community by building knowledge, skills, and positive attitudes about health. People learn how to maintain health, prevent disease, and reduce risky behavior. Health education can help community economy by reducing healthcare spending. It also helps overcome racial, gender, geographic, and socioeconomic health disparities. In addition to education about communicable disease, public health education can include topics such as chronic disease, violence prevention, substance abuse, nutrition, obesity, and mental health.

### Prior Knowledge

# Recommended Prior Activities

- [Analyzing Disease Outbreaks](#)
- [Creating an Action Plan to Prepare for an Outbreak](#)
- [Getting Sick: How Diseases Spread](#)
- [Mapping the Spread of Disease in a Community](#)
- [Mobilizing an Action Plan for an Outbreak](#)
- [Proactive Policies and Practices for Disease Control and Prevention](#)
- [Reactive Policies and Practices for Disease Control](#)

## Vocabulary

Term	Part of Speech	Definition
community	<i>noun</i>	social group whose members share common heritage, interests, or culture.
contagion	<i>noun</i>	disease-producing agent, like a virus or bacteria; can also refer to the disease itself or the transmission of the disease.
disease	<i>noun</i>	harmful condition of a body part or organ.
immunization	<i>noun</i>	process of becoming immune to a disease.
outbreak	<i>noun</i>	sudden occurrence or rapid increase.
transmission	<i>noun</i>	when disease-causing germs pass from an infected person to a healthy person.
vaccine	<i>noun</i>	preparation of a weakened or killed pathogen, or of a portion of the pathogen's structure that upon administration stimulates antibody production against the pathogen but is incapable of causing severe infection itself.



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