

**Lesson 5 Scientific Poster Session** (45 minutes, plus student research and development time)

## **Section**

Diseases

## **Investigative Question**

How can we apply what we've learned about the Epidemiologic Triangle to help us understand infectious diseases?

## **Description of Content**

This is one of two possible *culminating* activities for the infectious disease epidemiology module and is appropriate for all students. In this lesson, students will bring together everything they have learned. In order to teach this lesson, you do not have to have taught all the other lessons, but your students should, at a minimum, have worked through Lesson 1.

## **Relevant Standards**

This activity fulfills science and health education standards.

## **Objectives**

Students will:

- Conduct research on microbes that cause infectious diseases
- Create a poster that lists the agent, host, and environment for a disease
- Present their findings to the class

## **Materials**

- Poster board
- Pens, crayons, markers
- Any other materials students would like to use to create their posters

## **Safety**

Normal classroom safety procedures should be followed.

## **Procedure**

*Engagement* (5 minutes)

1. Explain to students that microbes are everywhere. Many are good, but some cause diseases. Tell them that in this activity, they will do research on some important infectious disease microbes—perhaps some that have made them or people they know sick.

*Exploration* (time varies)

1. Divide the class up into groups of 2 or 3. Assign each group a disease-causing microbe from a list at <http://www.cdc.gov/az/>. Explain that when scientists go to meetings they frequently do poster sessions. In a poster session, the presenter shows a poster to the attendees. He or she then has three minutes to present the information to his colleagues. Their assignment is to do a poster session for their colleagues (classmates) on one of the disease-causing microbes on the CDC site. Tell students most of the information asked for is at the Web address listed above, but you hope they will search out more on the CDC site or elsewhere.
2. On the board list the elements the poster should include:

AGENT:

- a. The name of the disease
- b. A picture or drawing of the microbe with its scientific name and a brief description
- c. How the disease is transmitted

HOST:

- a. The animals (including insects and worms) or people who host the disease
- b. The symptoms of the disease

ENVIRONMENT:

What environment is necessary for disease to exist and spread?

OTHER FACTORS:

Information on what can be done to prevent or treat the disease, plus any other facts they would like to add. They can show pictures of what the disease looks like in humans, if appropriate. You can brainstorm with the class for more elements they might like to add and list them on the board. The research time for students could be from several hours to several days.

*Explanation* (40 minutes)

1. Once students have completed their posters, have them conduct a poster session, just as they would if they were real scientists. Each group should show its poster. They should be prepared to answer questions from their scientific colleagues.

*Evaluation*

1. Use the sample scoring rubric to score students' posters. Be sure to display student posters around your room.

## Performance Descriptors

<b>Scientific Poster Session</b>				
<b>Student Name:</b>			<b>Score:</b>	
<b>Category</b>	<b>Scoring Criteria</b>	<b>Points</b>	<b>Student Evaluation</b>	<b>Teacher Evaluation</b>
<b>Organization</b> (30 points)	Poster is organized in categories of Agent, Host, Environment, Other Factors.	<b>10</b>		
	Text is simple and can be read from a distance. <i>(A standard, easy to read text is used. Both capital and small-case letters are used.)</i>	<b>10</b>		
	Sequence is easy to follow, using visual clues provided. <i>(Clues may include numbers, letters or arrows.)</i>	<b>10</b>		
<b>Content</b> (50 points)	The research subject is well covered in the poster. <i>(Details indicate the topic was sufficiently researched and quality information is presented.)</i>	<b>10</b>		
	Agent section includes: the name of the disease, a picture or drawing of the microbe with its scientific name and a brief description, how the disease is transmitted.	<b>10</b>		
	Host section includes: the animals or people who host the disease, symptoms of the disease.	<b>10</b>		
	Environment section includes information on what is necessary for the disease to exist and spread.	<b>10</b>		
	Other factors about the disease are covered in the poster.	<b>10</b>		
<b>Presentation</b> (20 points)	Information is arranged neatly and logically.	<b>10</b>		
	Artistic elements of the poster are subtle and do not distract from the message of the poster. <i>(Scientific posters present information clearly.)</i>	<b>10</b>		
<b>Total points</b>		<b>100</b>		

## **Relevant Standards**

### *National Science Education Standards*

#### Content Standard C, Grades 5-8: Life Science

Disease is a breakdown in structures or functions of an organism. Some diseases are the result of intrinsic failures of the system. Others are the result of damage by infection by other organisms.

#### Content Standard F, Grades 9-12: Science in Personal and Social Perspectives

The severity of disease symptoms is dependent on many factors such as human resistance and the virulence of the disease-producing organism. Many diseases can be prevented, controlled or cured. Some diseases such as cancer, result from specific body dysfunctions and cannot be transmitted.

### *Benchmarks for Science Literacy*

By the end of the 8th grade, students should know that:

#### Chapter 6, Benchmark E, Grades 6-8 – Physical Health

- Viruses, bacteria, fungi, and parasites may infect the human body and interfere with normal body functions. A person can catch a cold many times because there are many varieties of cold viruses that cause similar symptoms.

### *National Health Education Standards*

#### Standard 1

Students will comprehend concepts related to health promotion and disease prevention.

- Explain the relationship between positive health behaviors and the prevention of injury, illness, disease and premature death.
- Analyze how environment and personal health are interrelated.
- Describe how lifestyle, pathogens, family history and other risk factors are related to the cause or prevention of disease and other health problems.