



LESSONS ON COMMUNICABLE DISEASE PREVENTION K-12

Student Services/Prevention
and Wellness Team



WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
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The Wisconsin Department of Public Instruction (DPI) staff of the Student Services Prevention and Wellness Team responded to the need for prevention strategies to address the spread of communicable disease. One of the strategies was to develop a set of lessons for elementary, middle, and high school students that were engaging, age appropriate, and could connect to a number of content areas such as Science, Art, Music and Social Studies and put them on the DPI Pandemic Flu web site for use by teachers. The lessons were adapted or developed by Jon W. Hisgen, Health and Physical Activity Consultant. Linda Carey served as the editor of the document.

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Elementary
School

Content Area: Communicable Disease Prevention

Performance Task: "Hand Washing Concept Map"

Educational Level: Elementary School

Student Instructions

After learning about how to wash our hands and the importance of washing hands properly, you show what you have learned by completing a hand washing concept map.

Assessment Criteria

Answers will be scored on the following:

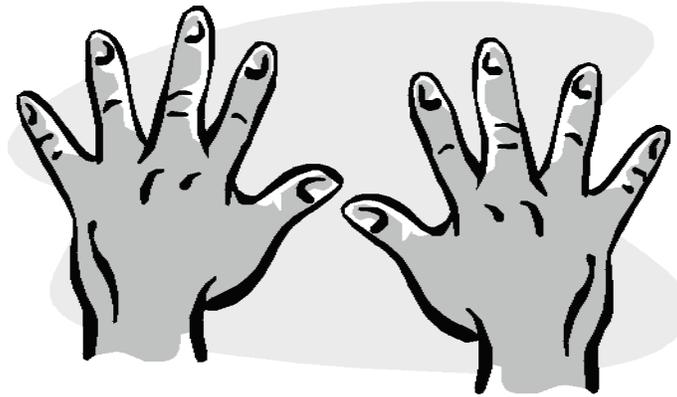
1. How well you complete the concept map with correct information.
2. How well you understand why we should wash our hands.
3. How well you understand when to wash our hands.
4. How well you understand how to properly wash hands.
5. How well you understand what can be done when we are unable to wash our hands properly.

After learning all about washing our hands, let's fill in this concept map!

When should we wash our hands?

How should we wash our hands?

Washing our Hands



Washing our Hands

What can we do if we need to wash our hands and there is no sink or hot water?

Why is it important to wash our hands?

Content Area: Communicable Disease Prevention

Performance Task: "Hand Washing Concept Map"

Educational Level: Elementary School

Teacher Information

Curriculum Connections

Language Arts, Health Education

Overview

Students create the attached concept map on different aspects of hand washing.

Requirements

Students receive a copy of the hand washing concept map to fill in responses to questions. Students show understanding of *when*, *how*, and *what* of washing hands as well as *what* precautions can be taken in a situation where appropriate hand washing facilities are not available.

Time

This assessment can be completed in one class period.

Materials

Hand washing concept map, pen, or pencil

Instructions

Provide instruction on various aspects of hand washing, including instruction on the spread of bacteria and possible use of hand sanitizers. A glow germ presentation might be helpful.

Assessment Criteria

Answers will be scored on the following:

Students show how well they understand the when, how, and why of hand washing as well as what to do when appropriate hand washing facilities are not available.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

Hand washing is the single most important prevention step for reducing the spread of disease. Hands should always be washed upon exiting animal areas and before eating or drinking.

HOW

Wet hands with running water; place soap in palms; rub together to make a lather; scrub hands vigorously as you say the ABC song.

Dry hands with a clean towel. Do not dry hands on clothing.

WHEN

After touching animals.

Before eating.

After using rest rooms.

WHY

It is the single most important prevention step for reducing the spread of disease.

WHAT

Use hot water if possible. If only cold water is available, use a soap that works effectively in cold water. If there is no sink, running water that has some pressure and volume will work if there is soap available. Hand sanitizers can work if no other hand washing station is available.

Content Area: **Communicable Disease Prevention**

Performance Event: **"Stop the Spread of Disease"**

Educational Level: **Elementary School**

Student Instructions

In this activity, you will make a *Stop the Spread of Disease* book. On each page of your booklet is listed a general healthy behavior that works to stop the spread of disease. Draw a picture of that healthy behavior and print information that explains your drawing so that students your age can understand your explanation. When your booklet is finished, make a cover and write a title on it.

Your booklet should include the following:

1. A book cover with a title.
2. A page for each healthy behavior. List the behavior, draw a picture of the behavior, and tell about your behavior.

Assessment Criteria

Answers will be scored on the following:

1. How well you understand health information on healthy hygiene.
2. How well you demonstrate an understanding of individual responsibility as it applies to healthy behaviors.

Content Area:	Communicable Disease Prevention
Performance Event:	"Stop the Spread of Disease"
Educational Level:	Elementary School

Teacher Information

Curriculum Connections

Art, Language Arts, Health Education

Overview

This activity promotes the practice of healthy behaviors.

Requirements

Children in the primary grades will make booklets to promote healthy behaviors. They should include the following:

- Hand washing.
- Proper coughing technique.
- What to do if you begin coughing, have a headache, or start to sneeze.
- When to tell parents, teachers, or school nurses about how you feel.
- Other behaviors you think are important to stop the spread of disease.

Each page of the booklet should list one healthy behavior, illustrate the behavior, and include information about the behavior. Students assemble their work into a booklet with cover pages of two sheets of construction paper. They design a cover and give their booklet a title. If time permits, the students could read their booklets to other students. Teachers may want to include pages on how diseases spread. This is an individual assignment.

Time

This task will take two class periods to complete.

Materials

Students will need paper labeled with behaviors, construction paper, pencils, markers or crayons, and a stapler.

Instruction

Explain how personal health choices and behaviors play an important role in disease prevention.

Assessment Criteria

Answers will be scored on the following:

1. How well students understand health information to prevent the spread of disease.
2. How well students demonstrate an understanding of the impact individual responsibility has on healthy behaviors.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

Cover and Title

** The Stop the Spread Train*

Drawing of a train with five cars, each one representing one health behavior. The behavior is listed on the side of each car.

Healthy Habit One:

Washing hands before eating will prevent the children from getting germs in their mouth or on their food from dirty hands.

Healthy Habit Two:

** When you cough, do it right.*

Cough into your clothes on your arm.

Healthy Habit Three:

** Tell you teacher, nurse, or parent.*

If you have a fever or you're sneezing or coughing, tell someone who can help.

Health Habit Four:

** Use a hand sanitizer.*

When there is no place for hand washing use a hand sanitizer.

Content Area: Communicable Disease Prevention

Performance Event: "You are the Teacher"

Educational Level: Elementary School

Student Instructions

In this activity, you will choose one of the following safe behaviors and create a poster and what you would say to someone else about why this behavior is important. Draw a picture of that healthy behavior, include any prevention materials to be used, and print information that explains your drawing so that students your age can understand your explanation. When your poster is finished you are going to share it with the rest of the class.

Choose one of the following

1. Communicable disease is spread by coughing or sneezing.
2. Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it.
3. Wash your hands with soap and water, especially after you cough or sneeze.
4. Alcohol-based hand cleaners called sanitizers are also effective.
5. Clean your desk with disinfecting wipes often.
6. Avoid touching your eyes, nose, or mouth.
7. If you think you are becoming sick or you are speaking to someone who sneezes or coughs, keep a social distance away from that person.
8. Stay home if you get sick.

Assessment Criteria

Answers will be scored on the following:

1. How well you understand health information on healthy hygiene and prevention of the spread of disease.
2. How well you demonstrate an understanding of healthy behaviors as it applies to the prevention of the spread of disease.

Content Area:	Communicable Disease Prevention
Performance Event:	"You are the Teacher"
Educational Level:	Elementary School

Teacher Information

Curriculum Connections

Art, Language Arts, Health Education

Overview

This activity promotes the practice of healthy behaviors.

Requirements

In this activity, the student will choose one of the following safe behaviors and create a poster and what they would say to someone else about why this behavior is important. Draw a picture of that healthy behavior, include any prevention materials to be used, and print information that explains the drawing so that other students their age can understand the explanation. When the poster is finished each student is going to share it with the rest of the class.

Choose one of the following

1. Communicable disease is spread by coughing or sneezing.
2. Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it.
3. Wash your hands with soap and water, especially after you cough or sneeze.
4. Alcohol-based hand cleaners called sanitizers are also effective.
5. Clean your desk with disinfecting wipes often.
6. Avoid touching your eyes, nose, or mouth.
7. If you think you are becoming sick or you are speaking to someone who sneezes or coughs, keep a social distance away from that person.
8. Stay home if you get sick.

Time

This task will take two class periods to complete and present to the rest of the class.

Materials

Students will need paper labeled with behaviors, construction paper, pencils, markers or crayons, and a stapler. Pictures or real examples of such things as tissue paper, soap, disinfecting wipes, alcohol-based hand cleaners will help bring realism to the poster.

Instruction

Explain how personal prevention choices and behaviors play an important role in disease prevention.

Assessment Criteria

Answers will be scored on the following:

1. How well the student understands health information on healthy hygiene and prevention of the spread of disease.
2. How well the student demonstrates an understanding of healthy behaviors as it applies to the prevention of the spread of disease.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

I keep my world clean of viruses because I use Disinfecting Wipes.

Poster of a student cleaning their desk with wipes.

I would use this product because it cleans almost all germs and kills the flu virus.

Content Area: **Communicable Disease Prevention**

Performance Event: **"How Vaccines Work"**

Educational Level: **Elementary School**

Student Instructions

You are asked to show how germs make us sick, how our bodies fight infection, and how vaccines work. In small groups of three, invent a sickness and present the following:

1. Draw what a germ looks like under the microscope.
2. Draw how the germ is transmitted or spread.
3. Draw the symptoms of the infection.
4. Explain how the disease can be prevented by the use of a vaccine. Include pictures of the antigen (germ) and the antibody (fighter cell).
5. Use the lock and key concept to form this explanation—the fighter cell locks up the germ so it can no longer harm the body.
6. Describe the model to the class.

Assessment Criteria

Answers will be scored on the following:

1. How well you show that you understand the health information about how vaccines work.
2. How well you explain the benefits of the following:
 - Being responsible for your own health.
 - Avoiding a threatening situation.

Content Area: Communicable Disease Prevention

Performance Event: "How Vaccines Work"

Educational Level: Elementary School

Teacher Information

Curriculum Connections

Art, Science, Health Education

Overview

This activity will help you see how well students understand the role of vaccines in preventing disease. Although the children know they go see the doctor to get shots, it is necessary for the students to learn what vaccines are and how they work.

Requirements

Students will need to have previous instruction on how germs can make us sick, how the immune system works, and how vaccines prevent certain diseases.

Time

This task will take two to three class periods to complete and present to the rest of the class.

Materials

Markers or crayons, a pen, or a pencil.

Instruction

Prior to the lesson develop a lock and key model of the class activity by using a real germ and sickness like chicken pox. You may wish to invite the school nurse or another health care professional to provide further discussions on prevention and control of disease.

Assessment Criteria

Answers will be scored on the following:

1. How well the student shows an understanding of the health information about how vaccines work.
2. How well the student explains the benefits of the following:
 - Being responsible for your own health.
 - Avoiding a threatening situation.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
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F	Communication skills
G	Advocacy

Sample Response

Germs Make Us Sick

1. *Draw and label your germ*
 - *Flu Germ*

2. *How is the germ transmitted or spread?*
 - *Coughing and sneezing.*

3. *Draw symptoms of the infection*
 - *Fever*
 - *Sore throat*
 - *Cough*

4. *Explain how the disease can be prevented by the use of a vaccine.*
 - *A flu shot with vaccine can block most flu germs from making someone sick.*

5. *Draw a picture of an antigen (germ) and the antibody (fighter cell) using the lock and key concept.*

6. *Describe and share your example with the class.*

Middle School

Content Area: **Communicable Disease Prevention**

Performance Task: **"Inspector Bacterium"**

Educational Level: **Middle School**

Student Instructions

Follow these steps to complete this assignment:

1. Each team of two will create a hypothesis as to what surface in the school is most likely to be contaminated with germs and what part of the body is also the most contaminated.
2. Each team will present their hypotheses written on paper to the rest of the class.
3. Each team will be given one agar plate to test one of their hypotheses.
4. Each team will get a sample using a cotton swab of a particular area or a body part.

Here are the areas to choose from:

- Bubbler
- Weight room
- Gym floor
- Wrestling mat
- Classroom desk
- Table in the class
- Table in the lunchroom
- Door knob entering the room
- Dry eraser board

Here are the body parts to choose from

- Mouth
- Nose
- Back of hands by the nails
- Toes
- Arm pit

After an overnight incubation determine as a class which petri dish had the greatest bacteria count.

The final part of this assignment is to present some ways of eliminating or lessening this contamination from your hypothesis paper.

Assessment Criteria

The student activities will be scored on the following:

1. How effectively you evaluate information about contamination.
2. How correctly you understand sites that can easily be contaminated
3. How well you identify safe behaviors that will prevent you from being contaminated.

Content Area: Communicable Disease Prevention

Performance Task: "Inspector Bacterium"

Educational Level: Middle School

Teacher Information

Curriculum Connections

Science, Health Education, Language Arts,

Overview

This activity has to do with determining areas of the school and the body that are likely to become contaminated. Students will hypothesize which areas of the school and the body are likely to be contaminated, test their hypothesis, and develop strategies to prevent them from becoming contaminated from this source.

Requirements

Follow these steps to complete this assignment:

1. Each team of two will present a hypothesis as to what surface in the school is most likely to be contaminated with germs and what part of the body is also the most contaminated.
2. Each team will present their hypothesis written on paper to the rest of the class.
3. Each team will be given one agar plate to test one of their hypotheses.
4. Each team will get a sample using a cotton swab of a particular area or a body part.

Here are the areas to choose from:

- Computer keyboard
- Weight room
- Gym floor
- Wrestling mat
- Classroom desk
- Table in the class
- Table in the lunchroom
- Door knob entering the room
- Dry eraser board

Here are the body parts to choose from

- Mouth
- Nose

- Back of hands by the nails
- Toes
- Arm pit

After an overnight incubation determine, as a class, which petri dish had the greatest bacteria count.

The final part of this assignment is to present some ways of eliminating or lessening this contamination from your hypothesis paper.

Time

This task will continue over two class periods.

Materials

Worksheet to write their hypothesis, their ways of preventing becoming contaminated, a petri dish with a cotton swab.

Purchasing agar

<http://sciencebuddies.org> This site is excellent because it discusses what agar is and how it is used.

The Best Agar for Student Projects

For students growing bacteria at home without the supervision of a teacher (for example, investigating bacteria growth at various places around the house), it's important to use an agar formulation that does not preferentially grow one kind of bacteria over another. The worst case would be one that preferentially grew pathogenic bacteria. Therefore, we recommend a plain **nutrient agar**, of which **LB agar** is a subtype.

There are many different suppliers for LB agar. Because some suppliers will often only sell to students directly, you may have to have your teacher order for you. If you are doing a project that involves inoculation and plate streaking, we highly recommend conducting the experiment at a school lab under teacher supervision.

Some suggested suppliers are:

Supplier	Catalog Number	Contact Info	Cost	Number of plates
Science Kit & Boreal Laboratories	WW6564600	www.sciencekit.com 800-828-7777	\$10.50 for 10 pre-poured plates of nutrient agar	10
Carolina Biological Supplies	82-1045	www.carolina.com 800-334-5551	\$23.25 per kit (enough for 20 plates)	20
Bio-Rad Laboratories	166-0600EDU	www.bio-rad.com 800-424-6723	\$8.00 for 6.9g of LB Nutrient Agar Powder	40
Sigma	L7025	www.sigma-aldrich.com 800-325-5832	\$63.60 for 100 tablets (1.68g per tablet)	500

Instructions

Instruction should cover ways germs are transmitted and how they end up on materials in a public building as well as the human body. A discussion of the educated guess called the hypothesis should be covered and an overview of strategies to prevent students from becoming contaminated should also be discussed.

Assessment Criteria

Answers will be scored on the following:

1. How effectively the student evaluates information about contamination.
2. How correctly the student understands sites that can easily be contaminated.
3. How well the student identifies safe behaviors that will prevent them from being contaminated.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

My hypothesis is that the wrestling mat has the highest bacterial count because a lot of bodies are always on it. As it turns out I was wrong because it is cleaned every day by the custodial staff.

Content Area: **Communicable Disease Prevention**

Performance Task: "The Germs Go Marching In"

Educational Level: Middle School

Student Instructions

Follow these steps to complete this assignment:

1. Gather information on preventing the spread of germs from person to person.
2. Divide into small groups.
3. In small groups, develop song lyrics to the tune of "The Germs Go Marching In" or "When Johnny Comes Marching Home Again."
4. Small groups will perform their song lyrics to the class.

Assessment Criteria

Answers will be assessed on the following:

1. How well you demonstrate an understanding of the effective hygiene habits.
2. How well you participate in the development and presentation of the song.

Content Area: Communicable Disease Prevention

Performance Task: "The Germs Go Marching In"

Educational Level: Middle School

Teacher Information

Curriculum Connections

Health Education, Language Arts, Music Education

Overview

This activity requires students to identify possible hygiene risks related to a communicable disease. Students will receive hygiene information and apply it to the development of lyrics sung to the tune of "The Germs Go Marching In," or "When Johnny Comes Marching Home Again."

Requirements

The students are asked to do the following:

1. Gather information on healthy hygiene behaviors and risks as they relate to positive hygiene behaviors, such as a day at school.
2. Develop song lyrics to the tune of "The Germs Go Marching In" or "When Johnny Comes Marching Home Again."
3. Perform their song lyrics to the class.

Time

One to two class periods.

Materials

Text material and resources outlining safe food handling habits, lyrics and recording of "When Johnny Comes Marching Home Again," or "The Saints Go Marching In," paper and pencil

Instructions

1. Provide information on safe hygiene habits and risks as they relate public places like school.

Suggested Extension: Students might develop a peer education project to teach their hygiene songs to elementary students.

Assessment Criteria

Answers will be scored on the following:

1. How well you demonstrate an understanding of the effective hygiene habits.
2. How well you participate in the development and presentation of the song.

	Wisconsin Health Education Standards
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

The Germs Go Marching In (Tune of "When Johnny Comes Marching Home Again")

The germs go marching one by one, hurrah, hurrah;
The germs go marching one by one, hurrah, hurrah.
The students wet hands and soap them good to stop the germs from marching in.
The germs go marching two by two, hurrah, hurrah;
The germs go marching two by two, hurrah, hurrah.
(repeat chorus)

The students who are coughing and sneezing, its gross, its gross.
The students who are coughing and sneezing, its gross, its gross.

They stay at home and do their wheezing, hurrah, hurrah.
But the teacher stops to rub his tummy, and he goes down to the john with runnys.
To the john, to the john, boom, boom, boom.

Uncle Harry covers his mouth hurrah, hurrah.
Uncle Harry wants the flu to go south, hurrah, hurrah
He always coughs into a Kleenex. And stays far away from those who don't
To the waste basket, to the waste basket, boom, boom, boom.

Could this happen to you? To you? To you? To you?
Could this happen to you? To you? To you?
Practice all your safety rules.
If you don't, you are the fools, boom, boom, boom.

Content Area: **Communicable Disease Prevention**

Performance Event: "Archaeological Dig"

Educational Level: Middle School

Student Instructions

In this activity you will analyze the artifacts pulled from an archaeological dig box to determine whether the items found had a negative or positive impact on the spread of disease. Indicate which items or item had the greatest positive or negative impact on the civilization. Compare the items found with items available to us today. Are we using more or less of the artifact? How does this affect our health? Record your answers on the attached worksheet.

Assessment Criteria

Answers will be scored on the following:

How well you show that you understand health concepts related to communicable disease prevention.

Archaeological Dig Worksheet

You are the member of an archaeological team who has removed some artifacts during an excavation of a Wisconsin site.

- Your task is to determine whether the item helps prevent or spread diseases or has no impact and why.

Artifacts	Disease Spreading	Disease Preventing	No Impact	Why
1. Soap				
2. Alcohol hand sanitizers				
3. Toilet seat 				
4. Castor Oil 				
5. Person cleaning their desk top				
 6. Picture of pollution				
7. Iodine salts				
8. Information on covering your nose and mouth when sneezing				
9. Ads for anti-viral drugs				
10. Picture of person coughing in class 				

- Determine which item had the greatest negative impact on the health and why.
- For those items still available to us today: Are we using more or less of these artifacts today? Why?
- How does use of these items today affect our personal health?

Content Area: Communicable Disease Prevention

Performance Event: "Archaeological Dig"

Educational Level: Middle School

Teacher Information

Curriculum Connections

Social Studies, Health Education, Language Arts

Overview

The students will have discussed risk behaviors in their lives and which ones have been proven by research to have the greatest influence on the health of the individual and the society in general. This event will explore the impact of health decisions on an earlier time in history and what behaviors might have been more risky.

Time

The assignment can be completed in one class period.

Materials

Pens or pencils with the worksheet

Instruction

The students will have discussed some of the major behaviors that impact the spread of communicable disease with special emphasis on the positive behaviors.

Assessment Criteria

Answers will be scored on the following:

How well you show that you understand health concepts related to communicable disease prevention.

Archaeological Dig Worksheet

You are the member of an archaeological team who has removed some artifacts during an excavation of a Wisconsin site.

- Your task is to determine whether the item is good or bad or no impact for preventing disease spread and why.

Artifacts	Disease Spreading	Disease Preventing	No Impact	Why
1. Soap				
2. Alcohol hand sanitizers				
3. Picture of Toilet seat 				
4. Castor Oil 				
5. Person cleaning their desk top				
6. Picture of pollution 				
7. Iodine salts				
8. Information on covering your nose and mouth when sneezing				
9. Ads for anti-viral drugs				
10. Picture of person coughing in class 				

- Determine which item had the greatest negative impact on the health and why?
- For those items still available to us today: Are we using more or less of these artifacts today? Why?
- How does use of these items today affect our personal health?

Wisconsin Health Education Standards	
<i>A</i>	<i>Disease prevention and health promotion</i>
<i>B</i>	<i>Health behavior</i>
<i>C</i>	<i>Goal setting and decision-making</i>
<i>D</i>	<i>Accessing accurate information</i>
<i>E</i>	<i>Impact of culture and media</i>
<i>F</i>	<i>Communication skills</i>
<i>G</i>	<i>Advocacy</i>

Sample Response

Your task is to determine whether the item is good or bad or no impact for preventing disease spread and why. See sample table on next page.

Artifacts	Artifacts	Disease Spreading	Disease Preventing	No Impact	Why
1. Soap	1. Soap		X		Helps to kill the virus
2. Alcohol hand sanitizers	3. Alcohol hand sanitizers		X		Works for older kids but should be done with caution for younger kids
4. Picture of Toilet seat 	5. Picture of a Toilet seat			X	Not the way most diseases is are spread
6. Castor Oil 	7. Picture of a bottle of castor oil			X	Old treatment that does have an impact
8. Person cleaning their desk top	9. Person cleaning their desktop		X		Eliminates germs
10. Picture of pollution 	11. Picture of pollution			X	No direct connection to the spread of germs.
12. Iodine salts	13. Iodine Salts			X	Old medical treatment that has no impact on the spread of germs.
14. Information on covering your nose and mouth when sneezing	15. Information on covering your nose and mouth when sneezing		X		Important prevention tool
16. Ads for anti-viral drugs	17. Ads for anti-viral drugs		X		Successful in killing many flu-causing viruses
18. Picture of person coughing in class 	19. Picture of a person coughing in class	X			Should not be in class

1. Determine which item had the greatest negative impact on the health and why?
Coughing in class. Germs get in the air.
2. For those items still available to us today: Are we using more or less of these artifacts today? Why?
We are using a lot because of the increased number of disease outbreaks happening.
3. How does use of these items today affect our personal health?
Responsible disease prevention behaviors are critical to maintaining one's health so if you are sick stay home, wash hands, keep your environment clean, and cover your mouth if you cough or sneeze are positive behaviors to incorporate.

Middle or High School

Content Area: Communicable Disease Prevention

Performance Task: "The Great CDC Scavenger Hunt"

Educational Level: Middle or High School

Student Instructions

Follow these steps to complete this activity:

You will be given ten communicable disease items to look for on Centers for Disease Control and Prevention (CDC) web site: www.cdc.gov . If you cannot find an answer, please make note. If you cannot find an answer but want to guess, make note of that.

Here are the ten items:

1. When are the times that are most important to wash your hands?
2. What is the proper way you should wash your hands?
3. Do sanitizers work for all people as tools to kill viruses?
4. Do disinfecting wipes like Lysol 4-1 work effectively?
5. Is sneezing and coughing on clothes better than using a tissue paper?
6. How do viruses change?
7. What is the most effective soap for young kids?
8. What is the impact of toilet seats on the spread of communicable disease?
9. What are places that are high risk for contamination?
10. What are places in school that are high risk for contamination?

Assessment Criteria

Answers will be scored on the following:

1. How well you show understanding of communicable disease information.
2. How well you explain the importance of communicable disease prevention behaviors.
3. How well you identify possible solutions to communicable disease concerns.
4. How well you identify valid sources of communicable disease information.

Content Area: Communicable Disease Prevention

Performance Task: "The Great CDC Scavenger Hunt"

Educational Level: Middle or High School

Teacher Information

Curriculum Connections

Health Education, Science

Overview

This activity examines many key questions surrounding communicable disease using the Centers for Disease Control and Prevention web site www.cdc.gov . To find specific information, the student will do a search for information on the item that is asked.

Requirements

The students are asked to do the following:

1. Look at the ten items that are asked related to communicable disease.
2. Use the CDC web site to answer the questions.
3. If the student cannot find the answer they can do a general Google search.
4. As a class, discuss the answers that were found.

Time

One class period.

Materials

Here are the ten items:

1. When are the times that are most important to wash your hands?
2. What is the proper way you should wash your hands?
3. Do sanitizers work for all people as tools to kill viruses?
4. Do disinfecting wipes like Lysol 4-1 work effectively?
5. Is sneezing and coughing on clothes better than using a tissue paper?
6. How do viruses change?
7. What is the most effective soap for young kids?
8. What is impact of toilet seats on the spread of communicable disease?
9. What are places that are high risk for contamination?
10. What are places in school that are high risk for contamination?

Access to the computer through the lab or individually.

Instructions

A discussion of the Centers for Disease Control and Prevention and the services the web site provide.

Assessment Criteria

Answers will be scored on the following:

1. How well the student shows understanding of communicable disease information.
2. How well the student explains the importance of communicable disease prevention behaviors.
3. How well the student identifies possible solutions to communicable disease concerns.
4. How well the student identifies valid sources of communicable disease information.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

Here are sample URLs with most information being on the CDC web site. Some information was taken from another web site.

Good health habits fact sheet: <http://www.cdc.gov/flu/protect/habits.htm>

Specific to H1N1 flu: <http://www.cdc.gov/h1n1flu/>

Handwashing vs. sanitizers: http://www.cdc.gov/ncidod/EID/vol12no01/05-1371_app2.htm

Info for children: http://www.cdc.gov/germstopper/home_work_school.htm

Posters that give good info:

http://www.cdc.gov/germstopper/materials/HealthyHabits_HR.pdf

Swine flu and you—includes hand washing technique and how to use alcohol-based gels:

http://www.cdc.gov/h1n1flu/swineflu_you.htm

Misconceptions about the flu vaccines and "stomach flu":

<http://www.cdc.gov/flu/about/qa/misconceptions.htm>

Types of influenza viruses. Includes how the flu virus can change and how it can be transmitted from animals to people:

<http://www.cdc.gov/flu/about/viruses/index.htm>

This is Like Snopes—finding out if information is correct or not—sanitizers can be dangerous to young children (and others) if they ingest it: <http://www.hoax-slayer.com/hand-sanitizer-warning.shtml>

University of Illinois flyer on hand washing and sanitizers with warning for adults to keep out of reach of small children:

<http://wellnessways.aces.illinois.edu/pdf/Hand%20Washing-How%20To%20Handout.pdf>

H1N1 flu around the world:

<http://abcnews.go.com/Health/SwineFlu/popup?id=7438550&contentIndex=1&page=2&start=false>

World Health Organization (WHO) update on disease outbreaks:

<http://www.who.int/csr/outbreaknetwork/en/>

USA Today's Interactive Map about the swine flu outbreak around the world, what's being done, where are the outbreaks, etc.:

http://www.usatoday.com/news/health/2009-04-27-swine-flu-world-map_N.htm

The Wisconsin Department of Public Instruction is not responsible for the content of the above websites nor should links to other sites be inferred as an endorsement of those sites.

Content Area: Communicable Disease Prevention

Performance Task: "Who Gets the Drug"

Educational Level: Middle or High School

Student Instructions

Follow these steps to complete this activity in groups of two or three:

Read the following scenario:

There has been a outbreak of a new Type A related virus for which no known human immunity exists. The mortality rate for this infection is 15% of the population. The research section of the Centers for Disease Control and Prevention (CDC) has reported that the most common antiviral medication Tamiflu has been shown to be effective in treating people who have gotten this mysterious virus. There is enough Tamiflu to give to 1/10 of the American population within the next 10 days and within 2 months there will be enough produced to address the next 40% of the American population. The other 50% of the population will have to wait up to 6 months.

You are a member of the Health and Human Services' decision-making staff who is to decide which people will get the available drug immediately and those individuals who will get the next level of anti-viral drugs available. Your team is to rank order from 1-5 in importance the people who would get the first available dose and those who would get the second available dose. The remaining people would have to wait past the 30-day production period. Those you would leave blank. Provide a reason for each of the groups you select.

Teachers and other school employees _____

Students between 5-18 _____

Health care workers in either hospitals or clinics _____

State government employees _____

Young children between birth and 5 _____

Parents of young children birth to 5 _____

Public servants like police and fire _____

Automobile industry employees _____

Food industry employees _____

Utility industry (power company) employees _____

Farm workers _____

President and the cabinet _____

Center for Disease Control researchers _____

Bank employees _____

Homeland security employees _____

All religious leaders in the country _____

All adults between 20 and 40, determined to be the highest risk for severe symptoms

All adults between 40 and 60, determined to be the lowest risk for severe symptoms

Assessment Criteria

Answers will be scored on the following:

1. How well you justify your choices.
2. How effective are your choices in terms of the health of the entire population.

Content Area: Communicable Disease Prevention

Performance Task: "Who Gets the Drug"

Educational Level: Middle or High School

Teacher Information

Curriculum Connections

Health Education, Social Studies, Science

Overview

This activity examines many key questions surrounding viral communicable disease, spread of the disease, and treatment.

Requirements

The students are asked to do the following:

Follow these steps to complete this activity in groups of two or three:

Read the following scenario:

There has been a outbreak of a new Type A related virus for which no known human immunity exists. The mortality rate for this infection is 15% of the population. The research section of the Centers for Disease Control and Prevention (CDC) has reported that the most common antiviral medication Tamiflu has been shown to be effective in treating people who have gotten this mysterious virus. There is enough Tamiflu to give to one tenth of the American population within the next 10 days and within 2 months there will be enough produced to address the next 40% of the American population. The other 50% of the population will have to wait up to 6 months.

You are a member of the Health and Human Services' decision-making staff who is to decide which people will get the available drug immediately and those individuals who will get the next level of anti-viral drugs available. Your team is to rank order from 1-5 in importance the people who would get the first available dose and those who would get the second available dose. The remaining people would have to wait past the 30-day production period. Those you would leave blank. Provide a reason for each of the groups you select.

Teachers and other school employees _____

Students between 5-18 _____

Health care workers in either hospitals or clinics _____

State government employees _____

Young children between birth and 5 _____

Parents of young children birth to 5 _____

Public servants like police and fire _____

Automobile industry employees _____

Food industry employees _____

Utility industry (power company) employees _____

Farm workers _____

President and the cabinet _____

Center for Disease Control researchers _____

Bank employees _____

Homeland security employees _____

All religious leaders in the country _____

All adults between 20 and 40, determined to be the highest risk for severe symptoms

All adults between 40 and 60, determined to be the lowest risk for severe symptoms

Time

One class period.

Materials

Worksheet that is in the "Student Information" section.

Instructions

A discussion of the CDC and the services the web site provides.

Assessment Criteria

Answers will be scored on the following:

1. How well the students justify their choices.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

In the first category our team chose health care workers because these people have to be at the front of people who have gotten the virus and need that urgent medical care. We need to keep them as healthy as possible.

In the second category we chose the farmers because they produce foods that people need every day to keep themselves healthy.

The last category would be school employees because it is a location where disease is easily spread, so we may have to close the schools.

Here are sample URLs with most information being on the CDC web site. Some information was taken from another web site.

Good health habits fact sheet: <http://www.cdc.gov/flu/protect/habits.htm>

Specific to H1N1 flu: <http://www.cdc.gov/h1n1flu/>

Swine flu and you—includes hand washing technique and how to use alcohol-based gels: http://www.cdc.gov/h1n1flu/swineflu_you.htm

Misconceptions about the flu vaccines and "stomach flu":
<http://www.cdc.gov/flu/about/qa/misconceptions.htm>

Types of influenza viruses. Includes how the flu virus can change and how it can be transmitted from animals to people:

<http://www.cdc.gov/flu/about/viruses/index.htm>

H1N1 flu around the world:

<http://abcnews.go.com/Health/SwineFlu/popup?id=7438550&contentIndex=1&page=2&start=false>

World Health Organization's (WHO) update on disease outbreaks:

<http://www.who.int/csr/outbreaknetwork/en/>

USA Today's Interactive Map about the swine flu outbreak around the world, what's being done, where are the outbreaks, etc.:

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Content Area: Communicable Disease Prevention

Performance Task: "Attack of the Super Bug"

Educational Level: High School

Student Instructions

An ever-increasing problem in our world is drug-resistant bacteria called MRSA. MRSA stands for Multidrug-Resistant Staphylococcus Aureus. This type of bacteria causes "staph" infections that are resistant to treatment with the usual antibiotics. These bacteria can live on their own for months. About 1% of the population carries it. Humans come in contact with it in hospital settings but there is also community acquired MRSA as well that is characterized by skin infections and can be treated by other drugs.

Follow these steps to complete this activity in groups of two or three:

Read the following scenario:

There has been a outbreak of MRSA infection in Jacksontown. It is estimated that 200 people have gone to the health clinic, their doctor, or the hospital for what appeared to be the flu but found after testing they had the presence of this drug-resistant bacteria. You are the public health leader for this community. It is your task to come up with actions that need to be taken to prevent further spread of this MRSA bacteria. You have the following questions to answer and are allowed to use the internet to help you in your deliberations.

1. How do most people catch this bacteria? (three ways)
2. Where do most people carry this bacteria?
3. Why is MRSA such a dangerous infection?
4. What are the differences between a virus and a bacteria in terms of remaining alive?
5. What are five ways a person can catch a MRSA bacteria?
6. What internal organ is most affected by MRSA?
7. How can we prevent the spread of MRSA in a hospital? (three actions)
8. If we developed an advertising campaign to prevent the spread of this bacteria what should be in it? (three ideas)
9. Of the above answers, which one is most important to our plan to prevent the spread of MRSA.

Assessment Criteria

Answers will be scored on the following:

1. How well you develop your response.
2. How effective are your choices in terms of the health of the entire population.

Content Area: Communicable Disease Prevention

Performance Task: "Attack of the Super Bug"

Educational Level: Middle or High School

Teacher Information

Curriculum Connections

Health Education, Social Studies, Science

Overview

This activity examines many key questions surrounding the MRSA communicable disease and issues surrounding prevention of the spread of this disease.

Requirements

The students are asked to do the following:

Follow these steps to complete this activity in groups of two or three:

An ever-increasing problem in our world is drug-resistant bacteria called MRSA. MRSA stands for Multidrug-Resistant Staphylococcus Aureus. This type of bacteria causes "staph" infections that are resistant to treatment with the usual antibiotics. These bacteria can live on their own for months. Humans come in contact with it in hospital settings but there is also community acquired MRSA as well that is characterized by skin infections and can be treated by other drugs.

Follow these steps to complete this activity in groups of two or three:

Read the following scenario:

There has been an outbreak of MRSA infection in Jacksontown. It is estimated that 200 people have gone to the health clinic, their doctor, or the hospital for what appeared to be the flu but found after testing they had the presence of this drug-resistant bacteria. You are the public health leader for this community. It is your task to come up with actions that need to be taken to prevent further spread of this MRSA bacteria. You have the following questions to answer and are allowed to use the internet to help you in your deliberations.

1. How do most people catch this bacteria? (three ways)
2. Where do most people carry this bacteria?
3. Why is MRSA such a dangerous infection?

4. What are the differences between a virus and a bacteria in terms of remaining alive?
5. What are five ways a person can catch a MRSA bacteria?
6. What internal organ is most affected by MRSA?
7. How can we prevent the spread of MRSA in a hospital? (three actions)
8. If we developed an advertising campaign to prevent the spread of this bacteria what should be in it? (three ideas)
9. Of the above answers, which one is most important to our plan to prevent the spread of MRSA?

Time

One class period.

Materials

Worksheet with the nine key questions.

Instructions

Explore web sites that address MRSA and the problems it causes. You can use the CDC web site or Google MRSA and find an appropriate site there.

Assessment Criteria

Answers will be scored on the following:

1. How well the students develop their responses.
2. How effective are the groups' choices in terms of the health of the entire population.

Wisconsin Health Education Standards	
A	Disease prevention and health promotion
B	Health behavior
C	Goal setting and decision-making
D	Accessing accurate information
E	Impact of culture and media
F	Communication skills
G	Advocacy

Sample Response

1. How do most people catch this bacteria? (three ways)

Carried by the skin. Important because wrestlers can transmit the infection by skin to skin contact.

Contaminated surfaces.

Airborne particles—MRSA can spread from the nose whether the person is sick or not.

2. Through what parts of the body do most people transmit this bacteria?

Nose and skin

3. Why is MRSA such a dangerous infection?

In 2005, 94,000 people got the most serious type of MRSA and 20% died.

4. What is the difference between a virus and a bacteria in terms of remaining alive?

Viruses need to infect something to keep living, bacteria can exist on their own for months.

5. What are five ways a person can catch a MRSA bacteria that people do not do every day?

Needle use by drug users or getting a tattoo.

Military personnel sharing things.

Medical instruments that are not silver.

Sexual intimacy—nose, groin, and underarms are key hiding places for MRSA.

Towels are hygiene items that can easily spread this bacteria.

6. MRSA is a major infection for this organ in the body?

The heart.

7. How can we prevent the spread of MRSA in hospitals? (3 actions)

Screen medical staff, isolate patient, clean wards, screen patients.

8. If we developed an advertising campaign to prevent the spread of this bacteria what should be in it? (Three ideas)

Lifestyle choices can also increase MRSA chances.

Stay at home, hands clean, and prevent airborne particles.

We have the cleanest building in town (local hospital).

9. Of the above answers which one is most important to our plan.

Personal behaviors.