

Myth Busters: HIV Transmission

by

Kathie Hilbert
Connersville High School
Connersville, Indiana

Matthew Wilson
Miller Intermediate School
Houston, Texas

CDC's 2007 Science Ambassador Program

This lesson is designed for 5th and 6th grade students as a scientific introduction to HIV/AIDS. Due to the sensitive nature of this topic and age of the audience, emphasis has been placed on the communicability of viruses, the distinction between a virus and a disease, and correction of misinformation associated with HIV/AIDS. This lesson plan is activity driven with quick checks for understanding throughout and a final product-based assessment.

Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

Myth Busters: HIV Transmission

Kathie Hilbert
Connersville High School
Connersville, Indiana

Matthew Wilson
Miller Intermediate School
Houston, Texas

Summary

This lesson is designed for 5th and 6th grade students as a scientific introduction to HIV/AIDS. Due to the sensitive nature of this topic and age of the audience, emphasis has been placed on the communicability of viruses, the distinction between a virus and a disease, and correction of misinformation associated with HIV/AIDS. This lesson plan is activity driven with quick checks for understanding throughout and a final product-based assessment.

Learning Outcomes

The student will be able to

- Explain that some diseases are caused by viruses.
- Explain that viruses are spread from person to person through various behaviors.
- Relate infection with the HIV virus to the possible development of the AIDS disease.
- Identify ways in which HIV is transmitted and ways in which it is not transmitted.

Materials

1. Computer lab for student use (may be modified if not available)
2. Envelopes – five per student
3. Index cards – five per student
4. Photocopy of Disease Webquest – one per student
5. Photocopy of Exit Ticket – one per student
6. Photocopy of Truth About HIV Chart – one per student
7. Photocopy of HIV/AIDS True/False Statements – one per class
8. Photocopy of Grading Rubric – one per student
9. Eight feet of colored banner paper per class (will be cut in half for the activity)
10. Activity materials include tape for student use, and scissors and highlighter for the teacher's use

Total Duration: 2 hours, 35 minutes

Procedures

Teacher Preparation

The teacher should prepare photocopies of handouts. Copies will need to be made of the following:

- Step 2 – Disease Webquest
- Step 4 – Exit Ticket
- Step 5 – Truth About HIV Chart, HIV True False Statements (one per class)
- Conclusion – Grading Rubric

The teacher will also need to print copies of the following (for teacher use only):

- Step 2 – Disease Webquest Answer Key
- Step 4 – Exit Ticket Answer Key
- Step 5 – Truth About HIV Teacher Fact Sheet

For **Step 3**, the teacher will need to mark five index cards using a pencil or highlighter. The cards could be marked with an “x” or a “check”; any symbol that differentiates between the cards will suffice. This set of five cards (one set per class) should be placed in individual envelopes and sealed. The teacher will also need to prepare a set of 5 unmarked sealed cards for each student.

For **Step 5**, the teacher will cut the banner paper into two pieces. One will be labeled **TRUE** and the other labeled **FALSE**. These will be displayed during the activity in **Step 5**. The teacher will also need to separate the **HIV/AIDS True-False** statements by cutting them apart in order to give one to each student. During the activity, the teacher will attach the statements to the banner paper with tape.

Prior to **Step 6**, the teacher will write the questions for the Bell Ringer on the board or overhead projector before students enter the room.

Introduction

Step 1

Duration: 10 minutes

The teacher will begin the lesson by writing the following terms on the board: mumps, measles, flu, rabies, hepatitis, polio, smallpox, and AIDS. The teacher will begin a class discussion by asking the students what the illnesses on the board have in common.

Responses might include answers such as “they make you sick”; “they are spread from person to person”; “you can catch them.” The teacher should focus the students on the fact that these diseases can be transmitted by infected individuals – and that a healthy person can catch them from an infected person. But, how are they transmitted from one person to another?

Step 2

Duration: 20 minutes

Students will use the Web Resource below to gain further information about the viruses that cause mumps, measles, rubella, and flu. Students will need to use a computer with Internet access to visit the website below, using the information about these viruses to answer the questions in the Disease Webquest document.

Web Resource

Title: CDC BAM! (Body and Mind) – The Immune Platoon Disease Database

URL: http://www.bam.gov/sub_diseases/diseases_immuneplatoon.html

Description: This is the CDC’s Body and Mind website for young people ages 9-13 years. The site includes detailed information about common viruses, how they are transmitted, and what symptoms they can produce.

Supplemental Documents

Title: Disease Webquest

Description: This is a file containing questions about the viruses that cause mumps, measles, rubella, and flu that students will answer during the Disease Webquest.

Title: Disease Webquest – Answer Sheet

Description: This is a file containing the answers to the Webquest questions that the teacher will use during the class discussion in **Step 2**.

Once the students have had a chance to answer the questions, the teacher will bring the class back together as a group and discuss their findings (using the Disease Webquest-Answer Sheet as a guide). The teacher should inform the class that all of these illnesses (like all the illnesses on the board) are caused by the transmission of a virus from one person to another.

Step 3

Duration: 30 minutes

In this activity, students will simulate the transmission of a virus throughout a population. Each student will receive five sealed envelopes containing blank index cards. One student will receive five envelopes containing index cards which have been marked with a highlighter or pencil by the teacher beforehand. The teacher should tell all students that they have all been given five envelopes that each contain one index card.

The teacher will give the students 5 minutes to mingle around the room, trading envelopes with other students. Students may trade envelopes with anyone they wish, as long as each student has 5 envelopes at all times. Students do not need to keep a record of the students with whom they have traded envelopes.

During the 5 minute trading activity, the teacher should remain a quiet bystander, not prompting students to trade envelopes if they do not wish and not providing students with any further information.

At the conclusion of the 5 minutes, students should be instructed to return to their seats. The teacher will then inform the class that at the beginning of the activity, not all envelopes contained the same index cards. In fact, one student was given five index cards that had a mark on them. The teacher should tell the class who this student was and write his name at the top of the board.

Then, the teacher will instruct the class to open their envelopes to see who now has the marked cards. The teacher will write these students' names at the bottom of the board.

Now the teacher will focus the class on trying to identify the path that the marked cards took through the class population – in other words, who traded with whom. Did the students at the bottom of the board trade directly with the student at the top of the board? If not, with whom did each student trade?

As the class is tracking the trading patterns of these students, the teacher should create a flowchart on the board so the class can see all the students who came into contact with the marked cards at some point during the activity.

The teacher should continue the class discussion for as long as possible, keeping in mind that the class might not be able to complete the flowchart. Throughout this process, the teacher should behave as if coming into contact with a marked card is a good thing.

Once the class discussion has reached a stopping point, the teacher will ask the class, "What if the marked cards were really the rhinovirus that causes the common cold?" The teacher should allow students to respond and make sure the point is made that those students who came in contact with the marked cards would now be infected with the common cold.

The teacher will then ask, "What if the marked cards were a more serious virus, like HIV that causes the disease AIDS?" The teacher will allow students a few moments to reflect on the activity before asking for student responses. Student responses will vary but should be focused to point out the fact that the virus was spread very quickly, students did not know who was already "infected" with the virus, and that there was probably a large amount of peer pressure to trade with many different students.

The teacher will conclude the activity by telling the class that they have just simulated the way in which many viruses that cause disease are transmitted through populations. In most cases, a very small number of individuals are infected with the virus, but through daily interactions with others, the virus is transmitted through the population, increasing the number of infected individuals as more time passes.

The teacher will point out that not all viruses are transmitted in this manner. For example, the rabies virus is not transmitted through person-to-person interaction but through infected animals biting humans.

Step 4

Duration: 5 minutes

To check for student understanding, the teacher will administer an exit ticket that asks four review questions. The teacher will reserve the last 5 minutes of class to allow the students to complete the questions before leaving for the day. As the class exits the room, the teacher will collect completed exit tickets.

Supplemental Documents

Title: Transmission Activity Exit Ticket

Description: This is a sample exit ticket the teacher can use to check for understanding of the concepts covered during the virus transmission activity. The questions included are correlated with the learning objectives.

Title: Transmission Activity Exit Ticket Answer Key

Description: This document contains the suggested answers to the Transmission Activity Exit Ticket.

Step 5

Duration: 45 minutes

Now that the students have been introduced to the communicability of viruses, the students will investigate HIV/AIDS. In this activity, the teacher will provide each student with a strip of paper containing a statement concerning HIV or AIDS. The teacher will display one piece of banner paper labeled TRUE and one labeled FALSE. Each student will read and consider their assigned statement. After determining its validity, the student will post the statement on the corresponding piece of paper. When all students have placed their statements on the papers, the teacher will provide each student with the worksheet What's the Truth About HIV? The teacher will lead the students in a discussion of the choices, changing the placement of the sentences as determined by the class. When the class is content with the placement of a statement, the students are to record the class choices on the worksheet.

This is meant to be an interactive discussion between the teacher and students. Each statement needs to be considered and the class will make the final determination as to placement of the statements. When the class is satisfied with the placement, the teacher will use the results to lead the class through the correct placement of all statements. It is important to discuss both the true and false statements. After entering their responses, students are to record the correct status of each statement. Upon completion of this activity, each student will have an accurate information sheet on HIV/AIDS.

Supplemental Documents

Title: What's the Truth about HIV?

Description: This is an interactive student worksheet to be used during the class activity.

Title: HIV/AIDS: True/False Statements

Description: These are the statements to be printed and distributed to students for use during the class activity.

Title: Truth about HIV – Teacher Fact Sheet

Description: This file contains accurate information for the teacher to discuss material with the class.

Step 6

Duration: 5 minutes

Before beginning the conclusion, the teacher will conduct a bell-ringer activity to check for understanding of the concepts. A bell-ringer is a focus activity designed to initiate interest in the lesson. The teacher will write the following statements on the board:

1. HIV is another name for AIDS.
2. HIV can be spread by infected blood products, so mosquitoes can spread the virus.
3. You can be friends with someone infected with HIV and not get infected yourself.

Students are to designate each statement as **True or False**. It is recommended that the teacher collect the responses for review, but the teacher should discuss the correct responses with the class before proceeding.

Supplemental Document

Title: Truth about HIV – Teacher Fact Sheet

Description: This document contains accurate information for the teacher to discuss responses to the bell-ringer activity.

Conclusion

Duration: 40 minutes

Students will be divided into 4-5 smaller groups. The teacher can allow the students to self select their groups, or the teacher can assign students into groups.

Students in each group will be responsible for working together to create a product that creatively uses the information learned about viruses and HIV (routes of transmission, etc.) to educate their peers. Groups may choose between creating a rap, PowerPoint presentation, graphic novel, interactive game, or skit. The sample rubric may be used to assess student mastery of the learning outcomes.

Supplemental Document

Title: Grading Rubric

Description: This is a sample rubric that can be used to assess student mastery of the learning objectives by grading each group's products.

Assessment

In **Step 1**, students will self assess their knowledge of viruses through class discussion (informal assessment). After the transmission activity, students will be formally assessed in **Step 3** through use of an exit ticket to evaluate their understanding of virus transmission. In **Step 4**, the class will self assess their knowledge of HIV/AIDS by completing the activity chart. In **Step 5**, a bell ringer will serve as an informal

assessment of students' retention of the concepts taught in **Step 4**. As a final assessment, students will be formally evaluated on the group's product using the sample rubric provided in the conclusion.

Modifications

Extension

In **Step 3**, the teacher can use a simple chemical reaction to demonstrate virus transmission rather than index cards. To do this, the teacher will give each student a test tube of clear liquid. All the test tubes are full of water, except for one student's test tube which is full of dilute sodium hydroxide. Students are given 5 minutes to mingle and mix liquids with whomever they wish. At the end of the 5 minutes, the teacher will add a few drops of phenolphthalein solution to each student's test tube. For those students whose test tube contains only water, nothing will happen and the liquid will remain clear. However, if a student's test tube contains a mixture of water and sodium hydroxide, the phenolphthalein will turn the solution a bright pink color. The resulting class discussion about virus transmission can follow the directions given in **Step 3** above.

Note: Please ensure that proper safety precautions are taken when working with chemicals.

Other Modifications

In **Step 2**, if a computer lab is not available for student use, the teacher can print descriptions from the BAM! Disease Database for each student. These files are saved as PDF documents and can be downloaded from this lesson plan.

Web Resources

Title: BAM! Disease Database – Mumps Description

URL: http://www.bam.gov/sub_diseases/5710_mumps.pdf

Description: This is a description of the virus that causes the mumps disease, including symptoms and the people who are most vulnerable to infection.

Title: BAM! Disease Database – Measles Description

URL: http://www.bam.gov/sub_diseases/5710_measles.pdf

Description: This is a description of the virus that causes the measles disease, including symptoms and the people who are most vulnerable to infection.

Title: BAM! Disease Database – Rubella Description

URL: http://www.bam.gov/sub_diseases/5710_rubella.pdf

Description: This is a description of the virus that causes the rubella disease, including symptoms and the people who are most vulnerable to infection.

Title: BAM! Disease Database – Flu description

URL: http://www.bam.gov/sub_diseases/5710_flu_casestudy_sample.pdf

Description: This is a description of the virus that causes the flu, including symptoms and the people who are most vulnerable to infection.

Education Standards

National Science Education Standards

SCIENCE AS INQUIRY, CONTENT STANDARD A

As a result of activities in grades 5-8, all students should develop

- **Abilities necessary to do scientific inquiry**
- Understandings about scientific inquiry

SCIENCE AS INQUIRY, CONTENT STANDARD C

As a result of activities in grades 5-8, all students should develop understanding of

- Structure and function in living systems
- **Reproduction and heredity**
- Regulation and behavior
- Populations and ecosystems
- **Diversity and adaptations of organisms**

SCIENCE AS INQUIRY, CONTENT STANDARD F

As a result of activities in grades 5-8, all students should develop understanding of

- **Personal health**
- Populations, resources, and environments
- **Natural hazards**
- **Risks and benefits**
- Science and technology in science

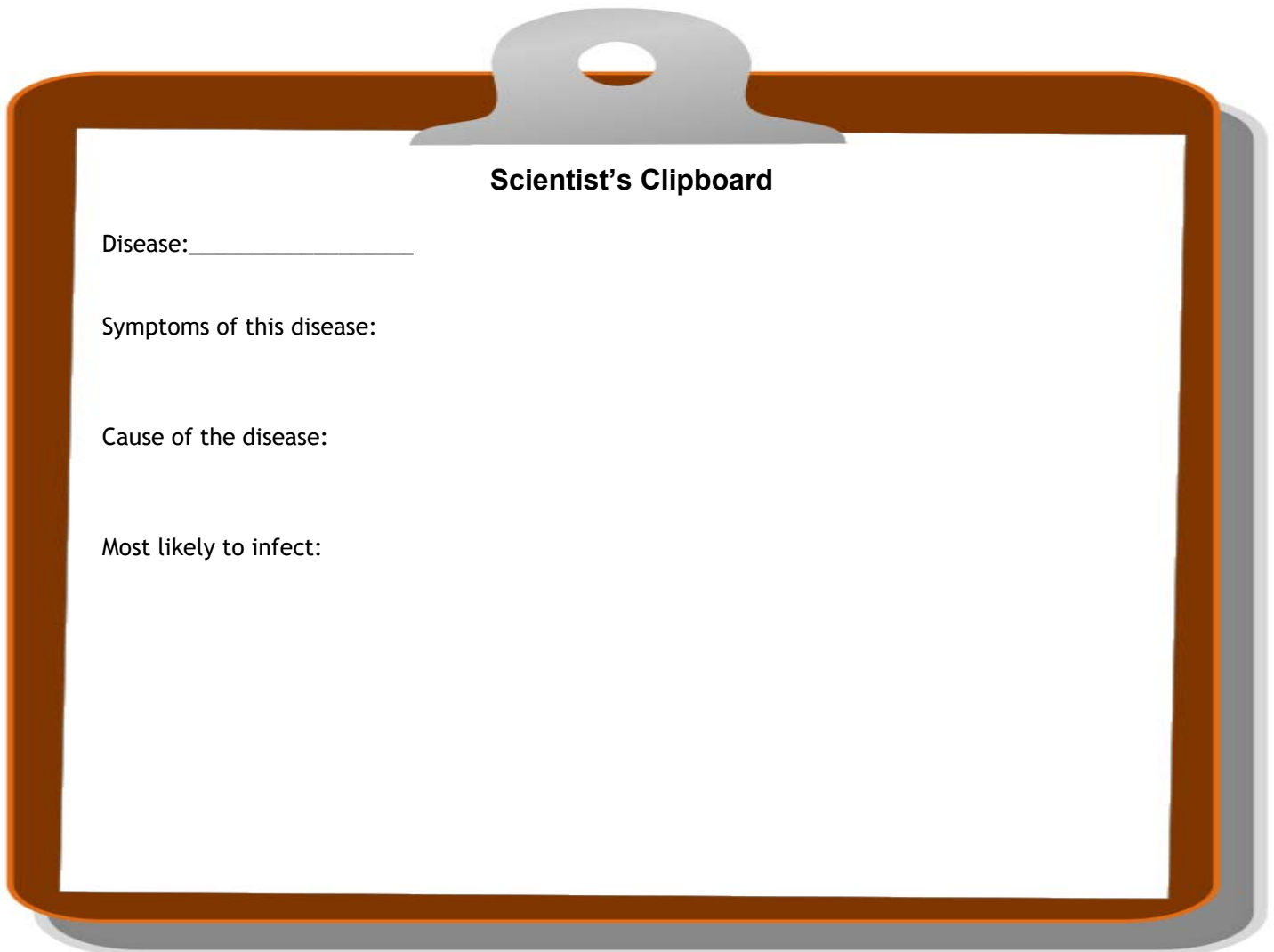
Disease Webquest

Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson
CDC's 2007 Science Ambassador Program

Name _____ Date _____

Directions:

1. Using a computer, access the websites below.
http://www.bam.gov/sub_diseases/diseases_immuneplatoon.html
<http://www.aids.gov/basic/101/index.html>,
<http://www.cdc.gov/hiv/resources/brochures/livingwithhiv.htm#q2>
2. Select one of the following diseases to learn more about: mumps, measles, rubella, flu or AIDS.
3. Use the above websites to research the disease.
4. Complete the questions below about the disease you select.



Scientist's Clipboard

Disease: _____

Symptoms of this disease:

Cause of the disease:

Most likely to infect:

Disease Webquest Answer Key

Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson
CDC's 2007 Science Ambassador Program

Name _____ Date _____

Directions:

1. Access the websites below using a computer.
http://www.bam.gov/sub_diseases/diseases_immuneplatoon.html
<http://www.aids.gov/basic/101/index.html>,
<http://www.cdc.gov/hiv/resources/brochures/livingwithhiv.htm#q2>
2. Select one of the following diseases to learn more about: mumps, measles, rubella, flu or AIDS.
3. Use the above websites to research the disease.
4. Complete the questions below about the disease you select.

Scientist's Clipboard

Diseases:

ANSWER: Mumps, Measles, Rubella, Flu, AIDS

Symptoms of this disease:

ANSWER:

Mumps – fever, muscle aches, headache, puffy cheeks

Measles – red spots on throat, conjunctivitis, skin rash from head-to-toe

Rubella – swollen lymph nodes, fever, skin rash

Flu – high fever, achy feeling, cough, sore throat, congestion

AIDS – variety of symptoms; there is no single test to diagnose AIDS

Cause of the disease:

ANSWER:

Mumps – virus,

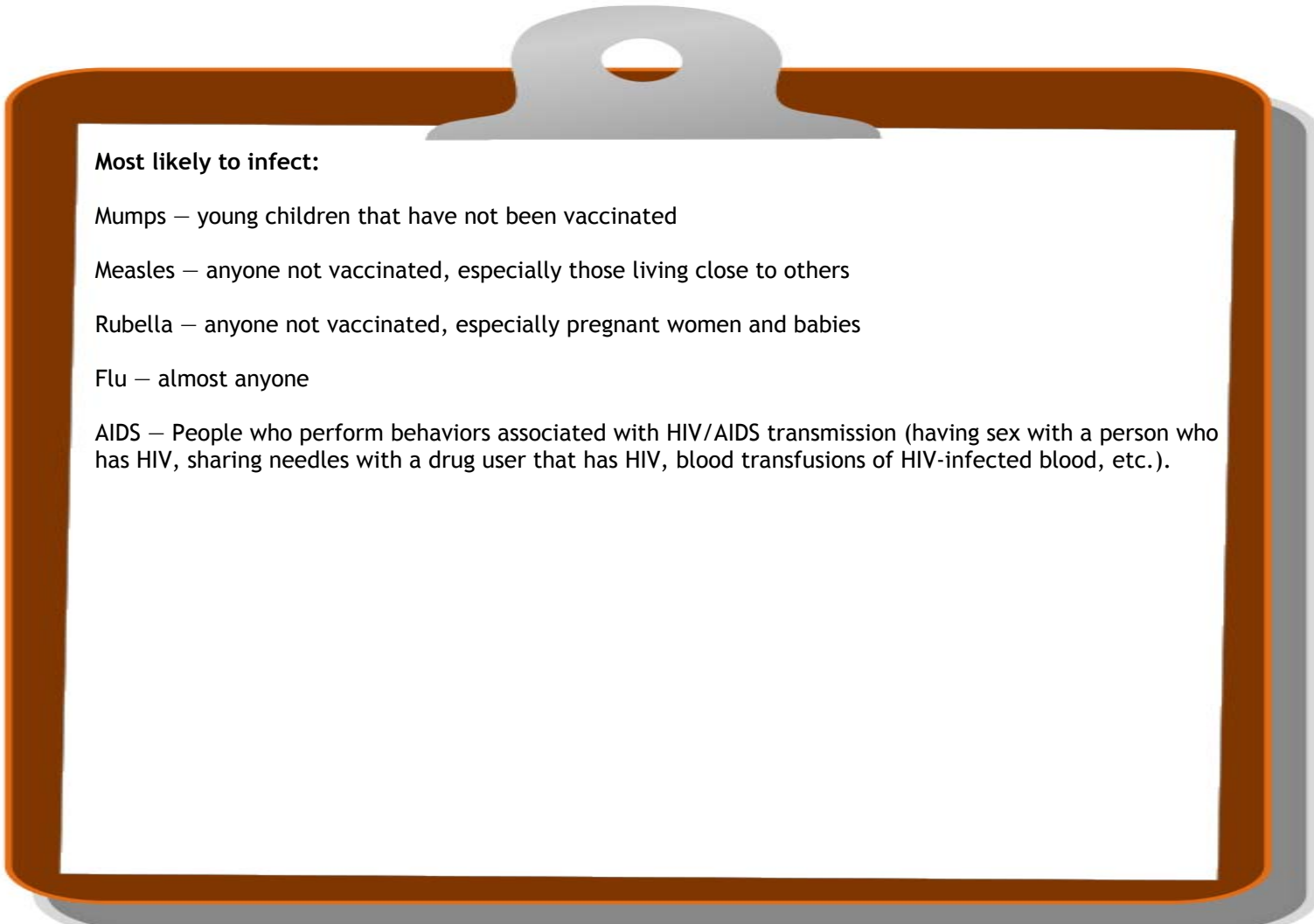
Measles – virus;

Rubella – virus,

Flu – virus,

AIDS – HIV virus

Source: Microsoft Office Clipart

A graphic of a clipboard with a brown border and a grey clip at the top. The text is contained within the white area of the clipboard.

Most likely to infect:

Mumps – young children that have not been vaccinated

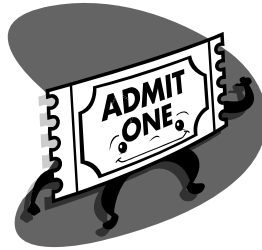
Measles – anyone not vaccinated, especially those living close to others

Rubella – anyone not vaccinated, especially pregnant women and babies

Flu – almost anyone

AIDS – People who perform behaviors associated with HIV/AIDS transmission (having sex with a person who has HIV, sharing needles with a drug user that has HIV, blood transfusions of HIV-infected blood, etc.).

Transmission Activity Exit Ticket



Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson, CDC's 2007 Science Ambassador Program

Name _____ Date _____

Directions: Before you leave class today, you must answer the questions below to the best of your ability based on what you learned in today's class activity.

flu	mumps	hepatitis
common cold	polio	smallpox
measles	rabies	AIDS

1. What do the illnesses above have in common?
2. Some diseases are caused by _____.
3. How are viruses transmitted through a population?
4. What is the virus that causes the disease AIDS?

Transmission Activity Exit Ticket Answer Key



Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson, CDC's 2007 Science Ambassador Program

Name _____ Date _____

Directions: Before you leave class today, you must answer the questions below to the best of your ability based on what you learned in today's class activity.

Flu
common cold
measles

mumps
polio
rabies

hepatitis
smallpox
AIDS

1. What do the illnesses above have in common?
ANSWER: Each of the illnesses above is caused by a virus. (1)
2. Some diseases are caused by
ANSWER: viruses. (1)
3. How are viruses transmitted through a population?
ANSWER: Answers will vary, but should be centered around person-to-person interactions. (1)
4. What is the virus that causes the disease AIDS?
ANSWER: HIV (human immunodeficiency virus) (1, 2)

References

1. Types of Microbes: Viruses. Meet the Microbes [online]. [cited 2008 January 2]. Available from URL: <http://www.microbeworld.org/microbes/virus/>
2. Centers for Disease Control and Prevention. HIV/AIDS Basic Information [online]. [cited 2007 July 31]. Available from URL: <http://www.cdc.gov/hiv/topics/basic>

What's the Truth about HIV?



Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson, CDC's 2007 Science Ambassador Program

Name _____ Date _____

Directions: As the class discusses each statement, write TRUE or FALSE in the first column of the chart below to show what the class thinks about each statement. After your teacher discusses THE TRUTH ABOUT HIV, complete the last column in the chart to show the actual truth about each statement.

What the class thought:	Statement about HIV/AIDS	Is it true or false?
1	It is easy to get AIDS.	
2	Scientists have found a cure for AIDS.	
3	HIV can be passed through infected blood.	
4	If you live in a small town, you really do not have to worry about being infected with HIV.	
5	AIDS is the disease known as Acquired Immunodeficiency Syndrome.	
6	HIV is the virus that causes AIDS.	
7	Anyone, anywhere, can be infected with HIV if they come in contact with the virus.	
8	Kissing spreads HIV.	
9	An infected mother can pass HIV to her unborn baby.	
10	You cannot get infected with HIV from holding hands with an infected person.	
11	HIV is mainly sexually transmitted.	
12	Sharing needles with someone infected with HIV can spread HIV.	
13	Some viruses cause disease in humans.	
14	It is not safe to go swimming in a pool where a person infected with HIV might have been because the virus could still be in the water.	
15	Mosquitoes can transmit HIV.	
16	AIDS is caused by a virus that weakens the immune system.	
17	You can be infected with HIV and not know you are infected.	
18	AIDS patients often get rare diseases that healthy people do not get.	
19	If an AIDS patient coughs on you, you could get infected with HIV.	
20	Many doctors and nurses have been infected with the AIDS virus at work.	
21	Public toilets have paper seat covers used to prevent the spread of HIV.	
22	You cannot get infected with HIV by drinking from a water fountain.	
23	You can safely shake hands with an AIDS patient only if you wear disposable gloves.	
24	The HIV virus is very hard to kill when it is outside the body.	
25	You might get infected with HIV if you sit next to an infected person in school.	
26	If you are infected with HIV, you have AIDS.	

HIV/AIDS: True/False Statements

Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson, CDC's 2007 Science Ambassador Program

Directions: Cut the statements apart and distribute the resulting strips among the students. (There are 26 different statements.)

- 1. It is easy to get AIDS.**
- 2. Scientists have found a cure for AIDS.**
- 3. HIV can be passed through infected blood.**
- 4. If you live in a small town, you really do not have to worry about being infected with HIV.**
- 5. AIDS is the disease known as acquired immunodeficiency syndrome.**
- 6. HIV is the virus that causes AIDS.**
- 7. Anyone, anywhere, can be infected with HIV if they come into contact with the virus.**
- 8. Kissing spreads HIV.**
- 9. An infected mother can pass HIV to her unborn baby.**
- 10. You cannot get infected with HIV from holding hands with an infected person.**
- 11. HIV is mainly sexually transmitted.**
- 12. Sharing contaminated needles with someone infected with HIV can spread HIV.**

- 13. Some viruses cause disease in humans.**

- 14. It is not safe to go swimming in a pool where a person infected with HIV might have been because the virus could still be in the water.**

- 15. Mosquitoes can transmit HIV.**

- 16. AIDS is caused by a virus that weakens the immune system.**

- 17. You can be infected with HIV and not know you are infected.**

- 18. AIDS patients often get rare diseases that healthy people do not get.**

- 19. If an AIDS patient coughs on you, you could get infected with HIV.**

- 20. Many doctors and nurses have been infected with the AIDS virus at work.**

- 21. Public toilets have paper seat covers used to prevent the spread of HIV.**

- 22. You cannot get infected with HIV by drinking from a water fountain.**

- 23. You can safely shake hands with an AIDS patient only if you wear disposable gloves.**

- 24. The HIV virus is very hard to kill when it is outside the body.**

- 25. You might get infected with HIV if you sit next to an infected person in school.**

- 26. If you are infected with HIV, you have AIDS.**

Truth about HIV - Teacher Fact Sheet

Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson, CDC's 2007 Science Ambassador Program

1. It is easy to get AIDS.
ANSWER: This is a FALSE statement. HIV is found primarily in the blood, semen or vaginal fluid of an infected person. Sharing of these fluids is the only known way to get HIV and potentially develop AIDS. (1)
2. Scientists have found a cure for AIDS.
ANSWER: This is a FALSE statement. There are currently methods of treatment, but no cure. (2)
3. HIV can be passed through infected blood.
ANSWER: This statement is TRUE. HIV can be passed through blood to blood contact. (1,2)
4. If you live in a small town, you really do not have to worry about being infected with HIV.
ANSWER: This is a FALSE statement. HIV infected individuals are in cities and towns throughout the United States. Behaviors determine your risk factor; not where you live. (2)
5. AIDS is the disease known as acquired immunodeficiency syndrome.
ANSWER: This is a TRUE statement. (1,2)
6. HIV is the virus that causes AIDS.
ANSWER: This is a TRUE statement. (1)
7. Anyone, anywhere, can be infected with HIV if they come into contact with the virus.
ANSWER: This is a TRUE statement. Coming into contact with the virus is the only known way to become infected. (1)
8. Kissing spreads HIV.
ANSWER: This is a false statement. Casual kissing does not spread HIV. (1)
9. An infected mother can pass HIV to her unborn baby.
ANSWER: This is a TRUE statement. HIV is known to pass from an infected mother to her unborn child. Also note: If an HIV positive mother is in treatment, the risk of transmitting HIV to an unborn baby is almost zero. (1,2)
10. You cannot get infected with HIV from holding hands with an infected person.
ANSWER: This statement is TRUE. You do not get AIDS from casual contact. (1,2)
11. HIV is mainly sexually transmitted.
ANSWER: This is a TRUE statement. The majority of HIV infections are the result of unprotected sex. (1)
12. Sharing needles with someone infected with HIV can spread HIV.
ANSWER: This is a TRUE statement. Sharing needles and syringes with someone infected with HIV is a known method of transmission. (1,2)
13. Some viruses cause disease in humans.
ANSWER: This is a TRUE statement. HIV is just one of many viruses known to cause disease in humans; Viruses can cause disease in many living things, including plants and animals. (1,2)
14. It is not safe to go swimming in a pool where a person infected with HIV might have been because the virus could still be in the water.

ANSWER: This statement is FALSE. HIV is a fragile virus that does not live outside the human body for long. (1)

15. Mosquitoes can transmit HIV.

ANSWER: This statement is FALSE. There is no evidence that HIV can be transmitted by a mosquito bite. (1)

16. AIDS is caused by a virus that weakens the immune system.

ANSWER: This is a TRUE statement. HIV attacks specific cells of the immune system, weakening it to the point that it can no longer fight off disease. (1,2)

17. You can be infected with HIV and not know you are infected.

ANSWER: This is a TRUE statement. Individuals infected with HIV frequently have no symptoms for months, even years after infection. (1)

18. AIDS patients often get rare diseases that healthy people do not get.

ANSWER: This is a TRUE statement. The weakened immune system can no longer fight off infections that healthy people can easily handle. (1)

19. If an AIDS patient coughs on you, you could get infected with HIV.

ANSWER: This statement is FALSE. HIV is not transmitted through droplets. (1)

20. Many doctors and nurses have been infected with the AIDS virus at work.

ANSWER: This statement is FALSE. Although it is true that some health care professionals have been infected, it is rare. They understand the modes of transmission and protect themselves and their patients against any transfer of the virus. (2)

21. Public toilets have paper seat covers used to prevent the spread of HIV. This statement is FALSE.

ANSWER: Toilet seats do not transmit HIV. (1)

22. You cannot get infected with HIV by drinking from a water fountain.

ANSWER: This statement is TRUE. HIV is not transmitted from drinking after an infected person. (1)

23. You can safely shake hand with an AIDS patient only if you wear disposable gloves.

ANSWER: This statement is FALSE. HIV is not transmitted through casual contact, so the gloves are not needed. (1)

24. The HIV virus is very hard to kill when it is outside the body.

ANSWER: This statement is FALSE. The HIV virus is very fragile outside the human body. (1)

25. You might get infected with HIV if you sit next to an infected person in school.

ANSWER: This is a FALSE statement. HIV is not passed through casual contact. (1)

26. If you are infected with HIV, you have AIDS.

ANSWER: This statement is FALSE. It takes years to develop the symptoms of AIDS. Infection does not imply manifestation of the disease. (1)

References

1. Centers for Disease Control and Prevention. HIV/AIDS Basic Information [online]. [cited 2007 July 31]. Available from URL: <http://www.cdc.gov/hiv/topics/basic>
2. Centers for Disease Control and Prevention. Wonder, Effective School Health Education to Prevent the Spread of AIDS [online]. [cited 2007 July 31]. Available from URL: <http://wonder.cdc.gov/wonder/prevguid/p0000217/p0000217.asp>

Grading Rubric

Myth Busters: HIV Transmission
Kathie Hilbert and Matthew Wilson, CDC's 2007 Science Ambassador Program

Name: _____ Group #: _____

DIRECTIONS: Your group must work together to develop a creative way to share the information you have learned about viruses and HIV to other students your age. Your group may choose to create a rap, graphic novel, interactive game, play, or PowerPoint presentation to communicate the information. Your group will be graded based on the rubric below. You must be sure to cover all 5 learning objectives that are listed below.

LEARNING OBJECTIVES

1. Explain that some diseases are caused by viruses.
2. Explain that viruses are spread from person to person through various ways.
3. Relate infection with the HIV virus to the possible development of the disease AIDS.
4. Identify ways HIV is transmitted and ways it is not transmitted.

	4	3	2	1
Overall Completeness	The project is 100% complete. Group members managed time wisely.	The project is 75-99% complete. Group members could have managed time more effectively.	The project is 50-74% complete. Group members did not manage time effectively.	The project is 0-49% complete. Group members did not manage time effectively.
Scientific Accuracy	The information presented is scientifically accurate according to the information presented in class.	Most of the information presented is scientifically accurate according to the information presented in class.	Some of the information presented is scientifically accurate. Some of the information presented is not scientifically accurate.	Most of the information presented is not scientifically accurate according to the information presented in class.
Amount of Detail Included	All 4 learning objectives are included in the information presented.	Only 3 learning objectives are included in the information presented.	Only 2 learning objectives are included in the information presented.	Only 1 learning objective is included in the information presented.
Group Member Participation	All group members had a clear role in the project and participated throughout the entire process.	All group members had a clear role in the project and most participated throughout the entire process.	Some group members had clear roles in the project and participated throughout the entire process.	The project was mostly completed by one person.
Presentation	The project was clearly explained to the class.	The project was mostly explained to the class.	The project was presented in a confusing manner.	The project was only briefly presented to the class.