HIV/AIDS Curriculum
Grade 7

Puyallup School District
Adapted from the KNOW Curriculum
2004

7th Grade HIV/AIDS Curriculum Index

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Day 1

1. Objectives:
    a. Describe how the body's immune system works.
    b. Describe how HIV infection affects the immune system.
    c. Recognize AIDS as caused by HIV.
    d. Define HIV and AIDS.

2. Materials:
    a. Teacher resource vocabulary list.
    b. "Your Body's Defense System: information sheet and activity sheet.
    c. Student worksheets: "What is HIV', "Define AIDS", and "Your Body's Defense System".
    d. Transparencies: "What is HIV?", "How HIV Destroys the Immune System", and "Define AIDS".

3. Procedure:
    a. Introduce the lesson by explaining the lesson's purpose.
    b. Review, discuss, and summarize the body's defense system using the "Your Body's Defense System" worksheet.
    c. Define HIV by discussing the transparency "What is HIV?" and having the students complete the matching handout.
    d. Explain how the HIV destroys the immune system. Use the transparency "How HIV Destroys the Immune System" to illustrate.
    e. Define AIDS by discussing the transparency "Define AIDS?" and having the students complete the matching handouts.
    f. Optional activities:
        i. Utilize students to demonstrate how the virus attachks the cells, enters, and breaks away
        ii. Have students draw a picture showing how the HIV destroys the immune system.

Your Body's Defense System

The human body is an amazing organism that has a number of ways of protecting you from disea or harm. You already know about many of the ways your body protects itself.

Your skin is the first line of protection that your body presents to foreign substances and organisms. If it isn't broken by a scrape or a cut or if you do not let substances into any of the openings of your body, your skin will give you wonderful protection. You could think about your skin like plastic wrap covering food. It keeps the ingredients where they are suppose to be and keeps unwanted things out.

Your skull (skeletal system) protects your eyes and ears. The nervous system protects you by alerting your brain to danger or harm through touching, seeing, and hearing. Your digestive system protects you from many organisms that could be harmful by having an environment that is hostile to them. The saliva in your mouth kills many organisms, and others are killed by the acid in your stomach. Your respiratory system protects you from inhaling harmful organisms with a sticky substance called mucus. Mucus lines the back of the throat to catch organisms. There are also small hairs called cilia, which move in an upward direction to move the mucus up out of the windpipe, so that when you cough or blow your nose you expel them.

Think of other ways that your body systems protect you from harm. Inside your body there are other defenses. If you get a cut or a scrape, it may become red and tender. This process is called inflammation. This is a sign that your body is fighting foreign organisms, which are called pathogens or germs. The circulatory system sends more blood to the area, and the white cells in blood attack and eat the pathogens. Sometimes this will result in a thick substance we often call pus being formed.

The Immune System

The last and most complicated line of defense is the immune system. The immune system recognizes, seeks out, and kills specific germs which may cause us to be sick and even remembers if a specific pathogen or germ has previously invaded the body. If it enters the body again, the immune system kills it before it can make you sick again. For instance, once you have had chicken pox you will not get chicken pox again because your immune system remembers the virus that causes chicken pox and kills it if it tries to make you sick again. That is called immunity.

New pathogens that enter the body for the first time often make you sick because your immune system has not seen them before and has to learn how to attack them.

One type of white blood cell is called the T cell. There are two kinds of T cells. The white blood cells that do the attacking are called Killer T cells. Another type is called the Helper T cell. They regulate the immune system. T cells live in the blood, lymphatic system, and throughout the body in various tissues. These cells patrol the body, searching for foreign invaders and attacking any they find.

"Your Body's Defense System" Worksheet

After reading the description of how your body's defense system works, fill in the blanks in the following statements:

1. The first line of defense your body has that protects you from foreign substances is your _____.

2. _____ in your mouth and _____ in your stomach kill many germs that enter your body.

3. _____ is a sticky substance which lines your _____ to trap organisms (germs).

4. When you have a cut or scratch, redness and tenderness may develop. This is called _____.

5. The _____ _____ searches out and kills germs which have invaded the body.

6. White blood cells produce _____ which attach to invading pathogens to prevent them from harming the body.

7. Two kinds of T cells are called _____ T cells and _____ T cells.

8. HIV attacks _____ T cells and becomes a part of them.

9. When HIV enters the body, the white cell called the _____ cell produces _____ to HIV.

"Your Body's Defense System" Worksheet

After reading the description of how your body's defense system works, fill in the blanks in the following statements:

1. The first line of defense your body has that protects you from foreign substances is your skin.

2. Saliva in your mouth and acid in your stomach kill many germs that enter your body.

3. Mucus is a sticky substance which lines your throat to trap organisms (germs).

4. When you have a cut or scratch, redness and tenderness may develop. This is called inflammation.

5. The immune system searches out and kills germs which have invaded the body.

6. White blood cells produce antibodies which attach to invading pathogens to prevent them from harming the body.

7. Two kinds of T cells are called Killer T cells and helper T cells.

8. HIV attacks helper T cells and becomes a part of them.

9. When HIV enters the body, the white cell called the B cell produces antibodies to HIV.

What is HIV?

AIDS is caused by a virus called the:

H = _____

I = _____

V = _____

Viruses are extremely _____ disease-causing organisms that are not killed by antiobiotics.

Viruses seek out a living cell where they can _____.

HIV seeks out cells in the _____ _____.

When the virus reproduces, it _____ the cell, weakening the immune system.

What is HIV?

AIDS is caused by a virus called the:

H = HUMAN

I = IMMUNODEFICIENCY

V = VIRUS

Viruses are extremely SMALL disease-causing organisms that are not killed by antiobiotics.

Viruses seek out a living cell where they can REPRODUCE.

The HIV seeks out cells in the IMMUNE SYSTEM.

When the virus reproduces, it DESTROYS the cell, weakening the immune system.

Define AIDS

AIDS is a acronym that stands for a very serious _____.
Each letter represents a word that describes the disease.

A. _____ - (_____)
- communicable viral disease: can be prevented
- The HIV infection is spread by sex and needle sharing
- not hereditary, comes from environment
- can be aquired by unborn child of an infected mother

I. _____- (_____)
- our immune system fights disease and keeps organisms in balance
- white blood cells of immune system infected by AIDS
- cells no longer fight infections so person can die of opportunistic illnesses such as pneumonia, flu, and a cancer called Kaposi's Sarcoma

D. _____ - (_____)
- immune or defense system not working properly
- some deficiencies are curable (vitamin deficiency), but not AIDS; prevention is critical
- a lack of essential white blood cells to effectively fight off disease

S. _____ - (_____)
- a group of signs and symptoms that when seen together are characteristic of a disease
- some people carry HIV but are asymptomatic (no symptoms)
- others have some symptoms
- some have been diagnosed with AIDS

LESSON 1, GRADE 7

DEFINE AIDS?

AIDS IS AN ACRONYM THAT STANDS FOR A VERY SERIOUS DISEASE
LETTER REPRESENTS A WORD THAT DESCRIBES THE DISEASE:

A. ACQUIRED - (DISEASE COMES FROM OUTSIDE BODY PASSED BY CARRIER
- COMMUNICABLE, VIRAL DISEASE: CAN BE PREVENTED
- THE HIV INFECTION IS SPREAD BY SEX AND NEEDLE-SHARING
- NOT HEREDITARY, COMES FROM ENVIRONMENT
- CAN BE ACQUIRED BY UNBORN CHILD OF AN INFECTED, PREGNANT WOM

I. IMMUNE - (AFFECTS IMMUNE SYSTEM BODY'S DISEASE
- OUR IMMUNE SYSTEM FIGHTS DISEASE AND KEEPS ORGANISMS IN BALA
- WHITE BLOOD CELLS OF IMMUNE SYSTEM INFECTED BY AIDS VIRUS
- CELLS NO LONGER FIGHT INFECTIONS SO PERSON CAN DIE OPPORTUNISTIC ILLNESSES SUCH AS PNEUMONIA, FLU, AND A CAN CALLED KAPOSI'S SARCOMA

D. DEFICIENCY - (LACK OF SOMETHING NOT WORKING PROPERLY
- IMMUNE OR DEFENSE SYSTEM NOT WORKING PROPERLY
- SOME DEFICIENCIES ARE CURABLE (VITAMIN DEFICIENCY), BUT AIDS; PREVENTION IS CRITICAL
- A LACK OF ESSENTIAL WHITE BLOOD CELLS TO EFFECTIVELY FIGHT DISEASES.

S. SYNDROME - (SYMPTOMS THAT ARE PART GROUP OF SIGNS OR SYMPTO
- A GROUP OF SIGNS AND SYMPTOMS THAT WHEN SEEN TOGETHER CHARACTERISTIC OF A DISEASE OF DISEASE
- SOME PEOPLE CARRY HIV BUT ARE ASYMPTOMATIC (NO SYMPTOMS)
- OTHERS HAVE SOME SYMPTOMS (AIDS RELATED COMPLEX)
- SOME DEVELOP FULL BLOWN AIDS AND DIE

HOW HIV DESTROYS THE IMMUNE SYSTEM