

STDs: Lifetime Consequences TEACHER'S GUIDE

What teachers need to know:

By the 12th grade, more than half of all teenagers have had sexual intercourse—many with multiple partners, and often without protection (*source: U.S. Department of Health and Human Services. Child Health USA 2003*). Unfortunately, many teenagers do not understand that they can get a sexually transmitted disease (STD) from unprotected oral sex as well as vaginal and anal sex. In 2001, people ages 15 - 24 accounted for 9 million cases of eight kinds of STDs.

Lesson Plan

Objectives:

Students will be able to:

- Simulate the spread of an infectious disease.
- Understand how STDs spread “silently.”

Materials:

- Clear plastic cups and drinking water (enough for each student)
- 0.1 base solution (such as sodium hydroxide/NaOH)
- Phenolphthalein and dropper
- Paper and pens

Project and Purpose:

Many people can contract HIV/AIDS and not know it --- it spreads silently and invisibly. This exercise illustrates the silent spread of an infectious disease.

1. Fill a clear plastic cup – one for each student -- with one-quarter water). In *three* of the cups, put a teaspoon of 0.1 base solution (such as sodium hydroxide/NaOH). As you distribute the cups, secretly record the names of the students who receive the cups with the base solution; you will need to disclose this later.
2. Next, secretly select two students to receive cups that you make sure are **ONLY** plain water (*not* one of the three cups with the solution in it). However, tell these two students that no matter what happens, they are not to share their fluid with anyone, and they are not to tell anyone why.
3. Give each student a plastic cup with clear fluid. **Tell them NOT to drink it.**
4. Instruct each student to find a partner. Have each pair of students combine their fluids in one cup, then divide the combined solution between the two cups so that each student has the same amount of combined solution. Tell the students to write down the person with whom they combined fluids.
5. Once each pair has combined solutions, tell the students to repeat the process with a new partner, again writing down this person as “partner #2.” Repeat the process a third time with “partner #3.”
6. Have students return to their seats with their solutions in hand. Have each student record on a piece of paper the names, in order, of the three people with whom they exchanged/combined fluids.
7. Go around the room and place three drops of phenolphthalein in each student’s cup. **The cups containing the base solution will turn pink!**
8. Ask students to explain what happened. Count the number of pink solutions in the class. Count the number of clear solutions in the class. What conclusions can they draw from their observations?
9. Describe your process for preparing the cups of solution and explain that this is a simulation of how a contagious/infectious disease is spread. What are some examples of infectious diseases? List the diseases on the board. Make sure to include HIV/AIDS.
10. Ask students if they could tell you before the “experiment” began who had the “infected” solutions. As a simulation of how HIV/AIDS is spread, how are people able to tell who has HIV/AIDS and who does not? How can you account for the people who would not share? How is this like abstinence?

Class Discussion Questions:

1. Abstinence is the only method to absolutely ensure you will not contract HIV/AIDS. About 50 percent of teens don’t practice abstinence -- why?
2. According to the Centers for Disease Control and Prevention, “the average time between HIV infection and the appearance of signs that could lead to AIDS is eight to 11 years.” Do you think the long length of time before AIDS develops plays a role in people’s decisions to have sex or share needles?

3. In what ways does our culture/media help prevent HIV/AIDS? In what ways does it add to the problem instead of solve it?

Self-Reflection Questions:

1. Do you know anyone has HIV/AIDS? If so, how do you treat him/her? If you do not know anyone, how do you think you might react to meeting someone with HIV/AIDS?
2. At what age do you think children should begin learning about AIDS? Whose responsibility is it to teach them? What would you say to a younger person about AIDS?

Evaluation:

- Did all students participate in the experiment?
- Could students relate this to the spread of disease and how they can protect themselves?