5th grade Family Life Unit
Approved by the BOE 10/6/10
Revised September 2010

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5th grade Family Life Unit

Implementation Guidelines

- This curriculum will only be implemented by those teachers who developed the curriculum OR those teachers and/or school nurses who received training by the science supervisor.
- School nurses will be supplied with the curriculum by their supervisor and will identify which lessons they would like to serve as a resource. School nurses are not required to teach any portion of the lessons. However, they will serve as a resource for the classroom teacher.
- Lessons will be taught in 2009-2010 in May. In the following years the curriculum in the 7th grade will be incorporated into the Human Body Unit (March) and will be taught in the 5th grade in May.
- Parents will have the opportunity to view the video clips and curriculum annually.
- Letters will be distributed to the parents prior to the implementation of the curriculum informing them of the agenda and content.
- Parents have the opportunity to sign a letter which will allow their child to be excused from the lessons. However, the students will be required to complete an independent study of a health related topic which requires the approval of the classroom teacher and science supervisor.
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5th Grade Science
Family Life
Lesson #1: The Family Unit

Maryland VSC

4.A.1: Describe how family members influence the development of adolescents.

Objective

4.A.1.a: Describe the relationships that exist within a family.
4.D.1.b: Describe male and female stereotypes and their impact on the individual and a diverse society.

Engage

Brainstorm: What is a family? Define parent. What do relationships look like within a family?

Students will brainstorm ideas as the teacher puts them on the board about what makes up a family, what they think the definition of a parent is and what relationships look like in a family and with friends.

The definition of a parent is someone who loves you, is a role model, and takes care of your basic needs.

The definition of relationship is an emotional or other connection between people.

Explore

Create a family picture.

Students will cut out pictures out of magazines and create what they feel is a family.

Explain

Students will justify their picture by writing a paragraph describing why the family that they created is healthy.

Students should be encouraged to share their family pictures and explanations with the class.
**Extend**

**Classroom Discussion:**

What is a relationship? Write the class definitions on the board. Once all the students have had the opportunity to participate, write the formal definitions on the board.

**Definitions for relationship:**

1. a connection, association, or involvement.
2. connection between persons by blood or marriage.
3. an emotional or other connection between people: the relationship between teachers and students.

Have students brainstorm words that describe the relationships found in a family.

- Between parent and child
- Between child and siblings

Ask the students to describe the difference between the relationships they have with family vs. the relationships they have with their friends.

Students will assign jobs and activities for each person in their family.

**Discussion:** Why did you assign the specific jobs/activities with each person?

*The class will discuss stereotypes and gender roles.*

Explain to the students that stereotypes and gender roles sometimes keep people back from doing what they truly would like to do in life. Ex: Females are not the only ones who can be a nurse. Males are not the only ones who can be a fire fighter.

**Definition of a stereotype:**

A simplified and standardized conception or image invested with special meaning and held in common by members of a group. Ex: The cowboy and Indian are American stereotypes.
**Definition of gender role:**
The public image of being male or female that a person presents to others. Ex: The mom cooks dinner and takes care of the laundry.

| **Evaluate** | On the back of the family picture, have students write what the relationship is between the family members in their ideal family. |
5th Grade Science
Family Life
Lesson #2: Puberty and Reproduction

Maryland VSC Objective

<table>
<thead>
<tr>
<th>Maryland VSC</th>
<th>4.C.1: Describe the impact of puberty on physical wellness.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>a. Define puberty.</td>
</tr>
<tr>
<td></td>
<td>b. Identify the parts of the human male and female</td>
</tr>
<tr>
<td></td>
<td>reproductive system.</td>
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<tr>
<td></td>
<td>c. Explain the function of the human reproductive organs.</td>
</tr>
<tr>
<td></td>
<td>d. Explain the menstrual cycle and nocturnal emissions.</td>
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<tr>
<td></td>
<td>e. Identify personal hygiene products.</td>
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</tbody>
</table>

Engage

Ask students to write down what they think the word puberty means in their Science notebook.

Ask the students if anyone wants to share their definition. As a class, go over the formal definition of puberty.

**Definition of puberty:**
*The period or age at which a person is first capable of reproduction of offspring; presumed to be 14 years in the male and 12 years in the female.*

Question Box: Give each student a post-it note and have them write 1 question they have regarding puberty and/or reproduction.

Make sure all students put a piece of paper in the box so that they do not know who asked questions and who did not.

Explore

*Let's Just Talk* Video (boys/girls)

This video is 15 minutes in length. The girls and boys will be separated. At this point, the girls will watch the girl video and the boys will watch the boys video.

Explain

The teacher will now pull questions out of the box to see if all questions have been answered.

Tell the students that if their question was not
answered that it was because it could not be answered in school and that they should take the question home and ask their parent. Tell them as many questions that can be answered will be answered.

<table>
<thead>
<tr>
<th>Extend</th>
<th>Let’s Just Talk Video (boys/girls)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>The students will now watch the other Let’s Just Talk Video. The boys will watch the girl’s video and the girls will watch the boy’s video.</td>
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<table>
<thead>
<tr>
<th>Evaluate</th>
<th>Exit Ticket:</th>
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<tbody>
<tr>
<td></td>
<td>List 3 things that will happen to your body during puberty.</td>
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</table>

Note: For this lesson, boys and girls will be separated but will receive the same lesson.
Exit Ticket:

List 3 things that will happen to your body during puberty.

1. 

2. 

3.
### Maryland VSC

| 4.A.1: Describe how family members influence the development of adolescents. |
| 4.D.1: Describe how relationships change with peers throughout puberty. |

### Objective

| 4.A.1.b: Explain how family relationships may change during puberty. |
| 4.D.1.a: Identify various positive and negative social groups. |

### Engage

**Brainstorm:** What does a healthy relationship look like?

Students will brainstorm ideas as the teacher puts them on the board about what they think healthy relationships look like in a family and with friends.

**Definition of a Healthy Relationship:**  
Relationships with anyone in your life (family or friends) that is fun and make you feel good about yourself. Words that describe a healthy relationship are communication, sharing, respect and trust.

### Explore

Revisit some things that may happen to the students during puberty.

**Think-Pair-Share:** In their science notebook, have students make a list of ways their relationship may change with their family after they go through puberty. Have the students share their list with a partner. Have the partner pick one item from their combined list and share with the class.

**Think-Pair-Share:** In their science notebook, have students make a list of ways their relationship may change with their friends after they go through puberty. Have the students share their list with a
partner. Have the partner pick one item from their combined list and share with the class.

**Explain**

Explain to the students that after puberty, they may experience more conflicts with their parents and friends due to the hormone changes of the body. They may cry more, be more irritated at small things and feel like their parents are picking on them. Ensure the students that this is all part of growing up and it does not last forever.

Have students brainstorm ways they cut down on the amount of conflicts after puberty.

Tell the students that sometimes after puberty friends change which could lead to some people making bad decisions. Tell the students that when they see a situation they know is wrong for them to make the right decision and not be a part of the bad situation. Tell them that sometimes when they choose to do the right things, some of their friends may try to pressure them to do things they know is not right. Explain to the students that this is called Peer Pressure.

Show the students the different scenarios and ask them to pick A, B, or C to answer the scenario. Ask the students to keep track of how many A, B, and Cs they have.

**Extend**

Tell students they learned how to say no in a friendly way to peer pressure from friends and acquaintances. Now, the class is going to explore ways to settle a dispute without fighting.

Choose three students to assist you in role plays that illustrate acts of violence. The teacher should play the part of the aggressor in each of the role plays. After each scenario, have the students describe how
they could have handled the situation differently.

- In the first role play, the teacher pretends to grab a comic book from the first student, marks it up, and says, "This is for breaking my video game."

- In the second role play, the teacher asks the second student, "What grade are you in?" The student responds. Then, the officer says, "Oh, so you're a fifth-grader? All fifth-graders are stupid! Why don't you play with the kindergarten kids? We don't want you here!"

- In the third role play, the teacher says to the third student, "Someone told me you were spreading lies about me." The teacher pretends to "punch" the student by punching one hand into his or her other hand and says, "My buddies and I will see you after school."

Summarize the role plays by telling the class that these are examples of disputes that were handled violently. Remind the class that some things are just not worth fighting over.

Tell students that the first step in handling a dispute is learning how to control angry feelings without striking out verbally or physically.

**Evaluate**

Exit ticket: T-chart

*Students will classify positive and negative social situations.*

**Teacher Notes:**

Evidence suggests increases in conflict and less warm interactions in relationships between parents and children during puberty. Changes are assumed to be short-term, although little longitudinal research has directly addressed the issue of long-lasting
effects. Other developmental changes occurring for the adolescent, the parent, or both (such as social cognitive or self-definitional change), as well as other relationship changes, personality characteristics, and the sheer number of life events or transitions have all been posited as potential contributors to changes in the parent–child relationship for young adolescents.
Scenario #1

You're at the mall and you see one of your friends slip a pack of gum into his pocket. You:

A) Decide that since he didn't get caught, what's the harm in stealing one for yourself?

B) Pretend you didn't see him.

C) Tell him that stealing is wrong and he should go put it back.
Scenario #2

You're having a huge sleepover with a bunch of friends. While playing truth-or-dare, you are dared to drink a can of beer. You:

A) Go for it! You can't back down from a dare.

B) Open the can but at the last minute you decide to say no.

C) Say no and try to change the activity.
Scenario #3

While sitting at your lunch table, everyone starts making fun of one of your friends. You:

A) Join in. Your friend won't find out and you might be made fun of if you don't.

B) Sit there and eat your lunch.

C) Stick up for your friend. How would you feel if your friends made fun of you?
Scenario #4

It's Friday night. All of your friends are going to a party but you promised your dorky cousin you would go to a movie with her. You:

A) Ditch your cousin- You want to have fun!

B) Go to the movie but meet up with your friends later.

C) Tell your friends a promise is a promise and go with your cousin.
Scenario #5

You're skating with some friends when one of them lights a cigarette. Do you:

A) Ask him for one- It looks cool.

B) Decline the offer. You don't need to smoke to have fun.

C) Give him a look of disgust as you go find other people to skate with.
Scenario #6

In math class, Jamie wants to look off your test. You:

A) Let him, because someday you might want to look off his.

B) Let him, but tell the teacher after class.

C) Cover your paper so he can't see it.
Peer Pressure Scoring

Mostly A's
You have not learned to stand up to peer pressure. You continually make bad decisions because of other people's influence on you. You need to decide who you really are. Don't just go along with the crowd.

Mostly B's
You are still learning. Sometimes you make your own choices, but sometimes you still let other people pressure you. Instead of just letting an issue pass by, try taking a stand and tell everyone how you feel. You will go a lot farther if you stand up for what you believe in.

Mostly C's
You know how to resist peer pressure. You are comfortable with what you believe and don't mind being different and not following what is popular. Keep your strong morals and your good choices. You will need them as you continue through life.
<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
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</table>

Social Situations T-Chart
Situations for T-Chart

Polly cheats on her Science test because she did not study.

Wayne helped his Grandmother carry in groceries.

Tara lied to her father when he asked who broke the bowl.

Diane helped her friends Zack and Mia spray paint the playground equipment.

Terry sits with the new girl at lunch to make her feel welcome.

Gretchen stands up for her little sister when some bullies picked on her at the bus stop.

Bryan helped Kristen pick up her books after some kids ran into her.
5th Grade Science  
Family Life  
Lesson #4: Disease Classification & Prevention Practices

<table>
<thead>
<tr>
<th><strong>Maryland VSC</strong></th>
<th>7.A.1: Differentiate between communicable and non-communicable diseases.</th>
</tr>
</thead>
</table>
| **Objective**    | 7.A.1.a: Compare pathogens such as bacteria, protozoa, virus, and fungus.  
               | 7.A.1.b: Identify the modes of transmission, such as air, touch, food, and body fluids. |
| **Engage**       | **The Glitter Experiment**                                             |
|                  | A randomly chosen student will be pulled aside ahead of class and given glitter to put in the palm of their hand. The teacher and this student will go around the room and pretending to talk to people, take pencils, touch papers, etc. |
|                  | At the end of this time period, the teacher will ask the students to look around and see if they notice anything. When the students notice all the glitter on things around the room, the teacher is to explain that the glitter represents bacteria/viruses that have been passes around the room. |
|                  | Students will discuss how these germs are passed in school and what they can to help prevent them. |
| **Explore**      | **Disease Research**                                                  |
|                  | Each group of students will randomly be given a pathogen and will complete research to gather information about their pathogen. |
|                  | Example Pathogens:                                                   |
|                  | • Bacterial Pneumonia                                               |
|                  | • Tuberculosis                                                      |
|                  | • Shingles                                                          |
|                  | • Rabies                                                           |
|                  | • Mumps                                                             |
|                  | • Lyme disease                                                     |
- Influenza (flu)
- E. coli (Preview material – suggested for mature students. Symptoms may provoke disruption in some classes)
- Chicken pox
- H1N1
- Pink Eye

A link where information on these pathogens can be found is;
http://www.nyhealth.gov/diseases/communicable/index.htm

**To save time, teachers may want to print out information that they would like the students to research (class sets)**

**Teachers may want to limit the number of pathogens researched per class.**

<table>
<thead>
<tr>
<th>Explain</th>
<th>Each group of students will take the information collected on their pathogen and make an informative poster to be presented to the class.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend</td>
<td>Each group will present their poster to the class. The rest of the class will take notes on the note sheet that will be provided.</td>
</tr>
</tbody>
</table>
| Evaluate | Compare/Contrast Chart
Students will compare/contrast communicable and non-communicable diseases and will provide examples of each. |
Communicable and Non-Communicable Diseases

Directions: Compare/contrast communicable and non-communicable diseases and provide examples of each.

<table>
<thead>
<tr>
<th>Communicable</th>
<th>Non-Communicable</th>
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**EXAMPLES**

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<th>Communicable</th>
<th>Non-Communicable</th>
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**EXAMPLES**

<table>
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<th>Communicable</th>
<th>Non-Communicable</th>
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**EXAMPLES**
# 5th Grade Science
## Family Life
### Lesson #5: The Immune System

<table>
<thead>
<tr>
<th><strong>Maryland VSC</strong></th>
<th>7.B.1: Explain how the body fights infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>7.B.1.a: Explain how the immune system responds to disease.</td>
</tr>
</tbody>
</table>

## Engage
Ask students if they have ever had something get in their eyes. Explain that there are many germs and other things that pollute the air.

Have the students list things that can get into their eyes and explain what can stop them from entering.

## Explore
Tell the students they are going to read about how the body protects itself from becoming ill. Set the purpose of reading.

**Purpose:** To understand cause-and-effect relationships between the disease causing pathogens and the body’s immune system. Have students read pages 156-157 (attached).

## Explain
Have students answer the following Scaffolding Questions:

1. What is the purpose of your tears? *(They wash away or kill disease causing microorganisms in the eye.)*
2. Why are acids that are found in the stomach and sweat so important? *(These acids kill disease causing microorganisms.)*
3. What might happen if the mucus in your nose, throat, and lungs suddenly dried up? *(You would be more likely to become ill from disease causing microorganisms that enter the body.)*

Write Infections Disease on the board and underline the root word *infect.* Ask students to define the word *infect* in their own words.
Tell students they can often determine the meaning of the word if they know the meaning of a root word.

Have students write a sentence using the terms infectious disease and pathogen.

**Extend**

Have students read pages 158-159 (attached).

Have students answer the following scaffolding questions:

1. What are 2 pathogens that cause disease? *(bacteria and virus)*
2. How are bacteria and viruses the same? How are they different? *(Both are pathogens. Bacteria are larger than viruses. Viruses do not have a nucleus.)*
3. What causes a person to become ill with strep throat? *(Bacteria enter the body and cause an infection.)*

Have students read pages 160 – 161 (attached).

Have students answer the following scaffolding questions:

1. How does a vaccine protect against disease? *(It causes the immune system to make antibodies against a specific disease-causing pathogen.)*
2. Are all white blood cells the same? How do you know? *(All white blood cells are not the same. There are special white blood cells that function by attacking pathogens.)*
3. If you have had chicken pox, what is the risk level that you will get it again after you come in contact with someone who has the illness? *(Low; your body has antibodies that will fight the disease.)*

**Evaluate**

Reflection:

Think about the glitter experiment from Lesson 4.
1. Describe how diseases spread.
2. Think about the last time you were sick. Discuss whether your illness could have been a result of being exposed to someone who was sick.
3. How did your immune system react to you being sick?

The attached are pages 156-161 of the 4th grade Science Book.
Lesson 4

How does the body defend itself?

The human body has many ways to prevent disease-causing organisms from getting into tissues.

Microorganisms in Your Body

When you get a cut or scrape, you should clean it and cover it with a bandage so the wound will not get infected. You get an infection when disease-causing organisms enter, live in, and multiply within your body. Most organisms that cause diseases are so small that they can be seen only with a microscope. That’s why they are called microorganisms.

Not all microorganisms that live in your body cause disease. In fact, many microorganisms are in your body all the time and cause no problems. Microorganisms are on your skin, in your mouth, and in your digestive system. Most of them are harmless as long as they stay where they belong.

Your Body’s Defenses

Your body uses special cells, tissues, organs, and chemicals to keep disease-causing microorganisms from causing harm. Your skin, breathing passages, mouth, and stomach are just some of your body’s defenses against invading microorganisms.

Your skin is your body’s first defense. Your skin is more than a layer of physical protection, it also provides chemical protection. Acids in your sweat kill many microorganisms that can cause disease.

Your body has other special means of protection. For example, your tears wash away disease-causing microorganisms that touch your eyes. Your tears contain chemicals that kill certain micro-organisms. In your mouth, mucus and saliva can trap and then wash away microorganisms that can cause disease.

If you swallow disease-causing organisms, acids in your stomach will kill many of them.
Thick, slippery mucus in your throat, nose, and lungs traps dust and many microorganisms you breathe in. Coughing or swallowing removes the mucus and microorganisms.

Your skin is made of tightly packed cells that cover your body.

**Checkpoint** What are some of your body's defenses against invading microorganisms?

**Draw Conclusions** Use the facts on these pages to draw conclusions about ways to prevent some diseases.
Bacteria and Viruses

Organisms that cause some diseases are called pathogens. Pathogens do not belong in your body. If they enter your body and multiply, they create an infection and you develop a disease.

Diseases caused by pathogens are infectious. An infectious disease is a disease that can pass from one organism to another. When you have an infectious disease, pathogens have gotten inside your body and harmed it. If you have an infectious disease, you can pass it to someone else.

Bacteria and viruses are pathogens that cause infectious diseases. Viruses are about 100 times smaller than most bacteria. Viruses have no nucleus or other cell parts. They can reproduce only by using living cells to create more viruses. Different types of viruses invade different types of cells. For example, viruses that invade the cells of your nose, mouth, or throat can give you a cold.

Staying Healthy

Some microorganisms travel through the air. So, if you are sick, cover your mouth and nose when you sneeze or cough. Many diseases are spread by direct contact between two people or between a person and an object. You can do a few simple things to reduce your chance of catching diseases by direct contact. Wash your hands before you eat. Make sure that utensils and objects have been properly cleaned before you use them. Objects like towels, glasses, and silverware can pass disease-causing microorganisms from one person to another.
Colds and influenza are caused by viruses. These diseases are viral infections.

Strep throat is caused by bacteria. Strep throat is a bacterial infection. The bacteria that cause strep throat make a poison that infects the throat and the surrounding tissues.

1. **Checkpoint** What is an infectious disease?
2. **Social Studies in Science** An antiseptic is a substance that stops the growth of bacteria. Use library books or the Internet to find out why the British surgeon Joseph Lister (1827–1912) is known as the Father of Antiseptic Surgery.
How Your Body Fights Infections

About 200 years ago, people began to learn much more about the causes of infectious disease and how to protect against them.

1796
Edward Jenner, a doctor in England, uses material from a sore to make a vaccine against smallpox.

1854
Florence Nightingale, an English nurse, demands that army hospitals be kept clean to save lives.

1868
Louis Pasteur, a French scientist, shows that microorganisms cause disease. He develops a way to kill certain microorganisms.

1882
Robert Koch, a German scientist, identifies a kind of pathogen. He hypothesizes that an infectious disease is caused by one specific pathogen.

1928
In Britain, Alexander Fleming discovers that a fungus called penicillin kills bacteria. Penicillin becomes the first antibiotic.
Attacking the Invaders

Microorganisms called pathogens can cause disease if they get past your body's defenses. Your immune system helps protect you from many pathogens. Your immune system is made of blood cells and other tissues.

Special white blood cells join together to destroy pathogens that have begun to damage other cells. These blood cells also make antibodies that attach to pathogens. An antibody is a chemical that the body makes to stop pathogens from infecting other cells. A different antibody is made for each kind of pathogen.

Your immune system uses antibodies that your body already has. If you have antibodies to a pathogen, your immune system will attack whenever it enters your body. If the antibodies prevent you from getting sick, you are immune to the disease.

Preventing the Disease

A vaccine is a kind of medicine that protects you from a disease. The vaccine signals your immune system to make antibodies to a certain pathogen. You develop immunity without you ever having the disease.

Vaccines are not available for all infectious diseases. You can help protect yourself by eating healthy foods, getting plenty of rest and exercise, and washing your hands often.

Sometimes a person's own immune system produces antibodies that attack a pathogen very quickly. For example, once you have chicken pox, you will probably never get it again. The first time you have chicken pox, your body produces antibodies that attack the disease. The next time the chicken pox virus enters your body, the antibodies will attack it before you ever become sick.

Lesson Checkpoint:

1. What are antibodies?
2. Explain how a vaccine causes immunity.
3. Technology in Science: Many products claim to kill pathogens. Make a list of products found in your home or a nearby store that claim to kill bacteria.
### Maryland VSC

<table>
<thead>
<tr>
<th>Objective</th>
<th>7.C.1: Explain HIV/AIDS as a communicable disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Describe the modes of transmission for HIV.</td>
<td></td>
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<tr>
<td>b. Clarify ways HIV cannot be transmitted.</td>
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</tr>
<tr>
<td>c. Identify behaviors that increase the risk of contracting HIV.</td>
<td></td>
</tr>
<tr>
<td>d. Identify ways to prevent the transmission of HIV/AIDS.</td>
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</tbody>
</table>

### Engage

Begin HIV demonstration – stop at step 5.

Demonstration is attached.

### Explore

**Video Clips**

- How do HIV/AIDS affect the human body?
- How do people get HIV/AIDS?
- Jay: A child living with HIV

### Explain

Teachers will connect the beginning of the HIV demonstration to the video by adding phenol red to the cups (Step 6 of demonstration).

### Extend

The students will describe how HIV is contracted and spread among students according to the demonstration.

### Evaluate

**Exit Ticket:**

Discussion Questions from “HIV – Who has it?”
“HIV – Who has it?”

Materials: plastic cups, water, dropper, sodium hydroxide or calcium hydroxide, phenolphthalein indicator solution

Teacher Prep:

1. Fill cups with water (about half way).
2. In 3 cups mix the hydroxide or calcium hydroxide (test to see how much is needed).
3. Give each student a plastic cup filled with “water.”
4. Let them know that 3 students are “infected” with the HIV virus.
5. Have students pour some of their “water” into each other’s cups (share with 3 people).
6. Go around the room with a dropper and place a few drops on phenolphthalein indicator solution in each cup.
7. If a student’s cup turns pink have them stand up.
8. The students standing represent who is now infected with the HIV virus. Count how many students have been infected from the virus.

Discussion Questions:

1. How has the number of students infected with the HIV virus changed throughout this demonstration?
2. In what ways is this demonstration similar to how the HIV virus may be spread among people?
3. When you shared your water from the cup did you know that you might contract HIV? Why or Why not?
4. What are some ways HIV is NOT spread?
“HIV – Who has it?”

Discussion Questions:

1. How has the number of students infected with the HIV virus changed throughout this demonstration?

2. In what ways is this demonstration similar to how the HIV virus may be spread among people?

3. When you shared your water from the cup did you know that you might contract HIV? Why or Why not?

4. What are some ways HIV is NOT spread?