future crime scene:

A large densely populated city in the United States. The CDC (Center for Disease Control in Atlantic City, GA) has been recieving calls from hospitals in the area. A higher than normal number of patients have been admitted with a mysterious viral infection. Doctors are stumped and local epidimiologists haven't been able to identify the disease either. The newsmedia has taken an interest in the dilemma and are hinting that some agent may have escaped or been brought out of a nearby biotech lab. Health officials say that it could be a new strain of some common ailment.

In order to calm public fears it is imperative that the identity fo the virus and the source of the disease be confirmed.

initial investigation:

Due to the critical nature of this investigation, scientists at the WHO (World Health Organization http://www.who.int/en/) have developed a tool to assist your investigation efforts. The tool allows you to simulate a viral infection without actually putting people in danger.

Obtain a VIS (Viral Illness Simulator) and play the virus game. First read all the instructions for using the VIS.

VIS instructions:

Meet as many people as possible without getting sick. You can only meet each other player one time. The catch is that no one knows how you get sick. Start the game by entering your name in the start screen. It is critical that everyone start the game at the same time, so after entering your name, wait for the rest of the class to start. You can meet other players by lining up your VIS and having ONE player hit the Meet button (one person is the

sender and the other is the receiver). The machine will keep track of your meetings (make sure everyone enters a unique name). Only the initial meeting with a person counts. At any point in time if you don't want other people to meet you, you can press the READY button, which will toggle to say LOCKED. In this mode you can neither send or receive meetings.

If and when you get sick your machine will beep a few times and your happy face will turn to a sad face that says SICK. Cut out a healthy/sick tag and flip it accordingly as you play rounds of the game.

To start a new game, go to the virus menu in the upper left, and click on new game. It will kick you back out to the name screen with your name already filled in. Everyone should start the second round together. You cannot play with other players if you restart your game while other people are playing the first game, your machine will not communicate with theirs. You must all be in the same mode to communicate.

- What are we trying to figure out?
- How can you develop a procedure to find out what we want to know?
- How will it be useful to our investigation?
- Use the Future Crime Scene Experiment Archive sheet to help you with your investigation.

briefing room:

What do we already know about viruses from our own experience?
Have you hosted a virus lately?
What viruses have you had?
How do you think you got those viruses?
How did you eventually get rid of them, or did you?
Did you take medicine to get better?
Does medicine work on viruses?
Does cold weather cause colds?
Does going outside with wet hair cause colds?
Do viruses die? Where they ever alive?
What viruses have you been vaccinated for?
what is a vaccine? How do they work?
What viruses do you know about that other people have?
What viruses have been in the news lately?
What resources can we use to find out more about viruses?

victims report update:

The CDC is very concerned about this unknown viral outbreak. Victims are reporting a variety of symptoms. New victims are being admitted to area hospitals on an hourly basis.

Use your knowledge and investigative skills to determine possibilities for the virus that could be causing this outbreak.

crime lab specialists assignment:

All investigators should immediately review the information at
"How Stuff Works"
(http://science.howstuffworks.com/virus-human.htm)

Divide into small groups to research one of the first seven section listed. Each group will collaborate to form a short oral report to present back to the investigative team.

These are the sections found at the website:
Introduction to How Viruses Work
What is a Virus?
How a Virus Infects You

Upon completion of your report. Present a briefing to the entire investigative team.

- What do you know now about viruses that you didn't know before?
- What are our options for transmission in this investigations?
- What means of transmission would pose the greatest risk to public health?
- What viruses are prevelant in our society and could have mutated to form a more virulant strain?

Utilize information from your briefing room discussion to categorize known viral diseases into four transmission modes.

Use the internet to research viruses. Discuss and negotiate a list of viral diseases that should be researched further. Be sure to include a broad spectrum as it will be important to understand many different viral diseases to solve our case. In small groups prepare a written report. At a minimum it should include these things...

- *name of the virus*
- *how is the virus spread? transmission mode*
- *what is the incubation period?*
- *symptoms the virus may cause, effects on the body*
- *biological characteristics of the virus*
- *methods of treatment*
- *if possible include an electron microscope photo of the virus, or your own drawing*
- *has there been an outbreak of this disease previously? was it an epidemic? a pandemic?*

further investigation:

After our initial investigation with the VIS and our work in the crime lab to understand the nature and progression of viral disease we are ready to investigate further.

Recall your initial investigation with the VIS. Did you have any initial instincts about how to proceed with the investigation? Now that you know more about viral infection, what factors do we need to consider as we proceed?

Run the VIS simulation again.

Now use the Future Crime Scene Experiment Archive sheet to plan your next move. In small investigative teams brainstorm methods that will allow you to discover more about the original route of infection. Engage the entire investigative team in a discussion to plan experiments to run with the VIS.

Choose and run the experiments. Continue as needed with new rounds of play using the VIS. Remember everyone must start at the same time and be in the same mode.

briefing room:

What could possibly be causing the mysterious disease?
Why do you think that?
What evidence do you have to support your reasoning?
What recommendations would you give the hospital facilities, the newsmedia, the CDC?
Now that you know about viral transmission modes, what kinds of things can you do to protect your own health?

Experiment Archive

Date _____
Experiment #____
Investigators _____

1) What do you want to find out? (question)

2) What do you think you will find out? (hypothesis)

3) List steps you will use to find out (procedure)

4) What data will you collect and how will you interpret it? (projection)

5) What happened in your first attempt? (results)

6) What did you learn? How can you use this information to draw conclusions and to inform the next experiment?

Cut on the dotted line., fold in half, tape together and punch a hole at the top of the faces where you see the small white circle. Obtain a piece of yarn or string and make yourself a healthy/sick necklace.