

Virulent

Middle School - Influenza and Vaccines

TERM	2013
LOCATION	G+L+S
PROGRAM	VideoGames and Learning

Overview of Lesson In this multimedia lesson students will relate what they have learned about viruses in Virulent to real virus outbreaks by exploring infamous worldwide flu pandemics. This lesson is designed to cross categorically compliment science, social studies and reading. Students will begin by reviewing how the virus invades and takes over after infection and how vaccines can prevent outbreaks. The following research component familiarizes students with the history of the influenza virus.

Materials Needed computer with projector hook up
internet access
student computers/iPads

Content of Lesson **Part I: Overview of Influenza and Vaccines**

Begin the lesson by watching a short video clip on the flu vaccine. A number of informational videos can be found online. Here are a few suggestions for both the middle school or elementary school levels:

Untamed Science (Middle School):

Untamed Science is composed of a core group of scientists and filmmakers dedicated to making exciting science videos.

“The Flu Vaccine 101” <http://youtu.be/5q8RNbeJTml>

BrainPOP (Elementary School):

BrainPOP’s digital resources explain concepts from across the curriculum using animated movies, educational games, interactive quizzes, informational texts, online activities, and more. Log-in required.

“Flu and Flu Vaccines” http://youtu.be/oIO_dBGg7CU

Part II: Integrating History- The 1918 Influenza Pandemic

Both of the suggested videos reference the 1918 Influenza Pandemic or Spanish Flu. This provides a segway to integrate the history of the infamous influenza virus.

The United States Department of Health and Human Services offers a very informative and interactive website on the 1918 Pandemic, including biographies, illustrations, a historical

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snapshot of life in the year 1918, and much more.

The Great Pandemic http://www.flu.gov/pandemic/history/1918/life_in_1918/index.html

Allow students time to explore the website independently or in partners after posing the following questions:

The Great Pandemic:

- What was its place of origin?
- How did scientists understand it during that time period?
- What were the virus's symptoms?
- What sort of remedies were used to treat and cure the pandemic?
- What were the effects?
- Additional interesting information...

Part III: Research Groups

Divide the class into 4 groups. Have them work together to gather the above information for other historical flu pandemics.

Asian Flu 1957-1958

Hong Kong Flu 1968-1969

Russian Flu 1977

Swine Flu 2009-2010

This may be a valuable opportunity to discuss website credibility, and how to determine whether information found online can be trusted or not. For example, Wikipedia vs. a Government agency. Below are a few good websites for students to begin their search:

Flu.gov <http://www.flu.gov/pandemic/history#>

National Institute of Allergy and Infectious Diseases (NIH)

<http://www.niaid.nih.gov/topics/flu/research/pandemic/pages/timelinehumanpandemics.aspx>

Have the students share out their interesting findings with the class and conclude with a brief written reflection.

- Are there any common trends?
- What do you notice about dates of the outbreaks, specifically lapse of time between outbreaks?
- How has treatment evolved over time?

Vocabulary

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antibodies

epidemic

influenza

pandemic

pathogen

strain

vaccine

Learning Objectives Students will be able to understand how a virus enters overtakes the body and the body's consequential symptoms.

Students will be able to understand what a vaccine is and how it prevents virus outbreaks.

Students will be able to explain the cause and effect of the 1918 Spanish Flu.

Students will be able to compare and contrast human conceptions (both correct and incorrect) of viruses over time.

Students will be able to research the origin, cause, and effects of various historical influenza pandemics.

Students will be able to navigate the web, synthesize their findings, and determine the credibility of internet resources.

Educational Standards

(MS-LS1-2) Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.

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(RST.6-8.9.) Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

(WHST.6-8.6.) Use technology, including the internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.