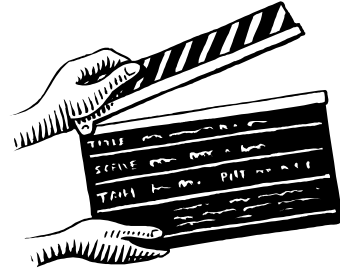


You're The Director: Creating a storyboard depicting infection by a pathogen

A curriculum activity to complement “Outwitting Bacteria’s Wily Ways” by B. Brett Finlay for the December 1999 HHMI Holiday Lecture “2000 and Beyond: Confronting the Microbe Menace”



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This activity has students describe the infection process for a pathogen of their own choosing by creating a storyboard. The activity requires students to research the mode of infection of pathogen and create a storyboard to chronologically describe the process of infection.

Objectives

1. To reinforce concepts of viral and bacterial pathogenicity.
2. To encourage students to utilize library and/or Internet resources to acquire biomedical information.

Activity

1. This activity should coincide with discussions in a science course dealing with modes of infection and other concepts of pathogenicity. The objective is to reinforce concepts while stimulating students to build on their acquired knowledge to investigate new topics
2. Have the students watch Lecture 3 of the December 1999 HHMI Holiday Lecture by B. Brett Finlay entitled “Outwitting Bacteria’s Wily Ways”. It would be helpful to inform students that you are interested in how different bacteria invade host cells. (The lecture is about 45 minutes in length).
3. Use the menu screen of the DVD to view the “E. coli infection”, Salmonella in side the host cell”, and viral infection” animations from the “Animations and Video Clips” menu. (Each animation is less than 3 minutes.)
4. Ask the students if they felt these animations were most helpful in understanding the infection process. (Hopefully, they will answer yes!)
5. Tell the students that you would like them to become directors and produce their own animation of an infection of a host cell by a pathogen.
6. Give the students a list of well-known bacteria or viruses. A sample list has been attached. Although this list should not limit their choices, remind students that they should select a pathogen that is reasonable well understood and that has not been depicted on the Holiday Lectures DVD program. By reasonably well understood, we mean there will be sufficient information available in the library or on the internet to complete the exercise.
7. Encourage the students to conduct a serious investigation of the mechanism of infection by allowing them time to use the library or computer lab. This could be accomplished during class time or assigning the exercise as homework.

8. Have the students create a storyboard depicting each of the important events in the infection process. A storyboard is a pictorial outline used by the videographer prior to actually making the animation. The storyboard would typically be comprised of 6-12 panels depicting key events to include in the animation.
9. Have the students create a script that would accompany the animation. Have the students identify what would be read for each panel.
10. Have the students provide references for the information depicted on the storyboard.

A list of pathogens

HIV
Tuberculosis
Cholera
Anthrax
Bubonic plague
Gas Gangrene
Chlamydia
Legionnaire's disease
Rocky mountain spotted fever
Malaria
Diphtheria
Tetanus
Botulism
Shigella

Resources

Center for Disease Control www.cdc.gov
University of South Carolina Microbiology online textbook
www.med.sc.edu:85/book/welcome.htm