



Flu Transmission

STEM Sims

Lesson 8: What can Reduce the Spread of Influenza?

Influenza, commonly called the flu, is a viral infection that is highly contagious. A variety of methods have been proposed to reduce the spread of flu throughout a school. Can you determine which method works the best at reducing the infection rate? Get ready to stop the spread!

Doing the Science

1. Start the Flu Transmission Simulation.
2. Select the “None” button under the Factor menu on the left-bottom of the screen.
3. Select the “Run” button at the bottom center of the screen.
4. Note the Progress bar, which shows time running for a six-week period.
5. Count and record in Table 1 below the number of infected students at the end of the six weeks of the flu outbreak.

Table 1. Infection Control Methods and Results

Method	Number of Infected Students at the end of Week 6	Percentage of Infected Students
None		
Hand washing		
Sanitizer station		
Antibiotics		
Masks		
Quarantining		

6. Select the “Hand Washing” button under the Factor menu.
7. Repeat steps 3 - 5.
8. Select the “Sanitizer Station” button under the Factor menu.
9. Repeat steps 3 - 5.
10. Repeat these steps for the last three factors: Antibiotics, Masks, and Quarantining.
11. Calculate the percentage of infected students out of the total population. To complete this calculation, divide the total number of infected students at the end of week 6 by 120 (the total population of students in the school). Multiply this value by 100 to convert it to a percentage. Enter these data into Table 1.

What Do You Understand?

1. Based on your results, which influenza protection strategy was *most* effective? Provide evidence to support your answer.

2. Which influenza protection strategy was *least* effective? Provide evidence to support your answer.

3. Which influenza protection strategy was *most* intrusive? Provide a reason to support your response.

4. Which strategy was *least* intrusive? Provide a reason to support your response.

5. If there were a real influenza outbreak at your school, which strategy would you recommend to your principal to stop the spread of the illness? Provide a reason to support your response.

6. Looking at the main simulation image, why do you think that no method tested was 100% effective in stopping the spread of the flu?

7. Return to the simulation and select the “None” factor and run the simulation again. This time select the “View Graph” button. Study and describe the overall shapes of the graphs.

8. Would you describe the relationship between the number of infections and number of weeks as being linear or exponential? Support you answer with evidence.
