

Name _____ Date _____



Flu Transmission

STEM Sims

Lesson 3: Which is Better: Wearing a Mask or Taking Antibiotics?

After a year of wearing masks due to the coronavirus, you most likely know that mask wearing helps to reduce the spread of some viruses. So, which is better, wearing a mask or taking antibiotics to prevent the spread of the flu?

Doing the Science

1. Start the Flu Transmission Simulation.



Q.A. Predict which will be more effective in preventing the spread of influenza, wearing a mask or taking antibiotics. Provide a reason to support your answer.

2. Select the "Masks" **Masks** 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 **Progress (weeks)** bar, which shows time running for a six-week period.
5. Select the "1" icon on the Progress bar.

- Count and record in Table 1 below the number of infected students at the end of the first week of the flu outbreak.

Table 1. "Mask Wearing" Factor Data

Week	Infected	Uninfected	Week	Infected	Uninfected
1			4		
2			5		
3			6		

- Select the "2" icon on the Progress bar.
- Count and record in Table 1 the number of infected students at the end of the second week of the flu outbreak.
- Repeat this process until you have counted and recorded data for all six weeks.
- Select the "Antibiotics" **Antibiotics** button under the Factor menu on the left-bottom of the screen.
- Repeat steps 3 - 9, only enter your data in Table 2.

Table 2. "Antibiotics" Factor Data

Week	Infected	Uninfected	Week	Infected	Uninfected
1			4		
2			5		
3			6		

What Do You Understand?

- Was the use of antibiotics better or not as good as wearing a mask to reduce the spread of the flu? Provide evidence to support your response.

2. Compared to your results from your previous lesson, how did wearing a mask affect the spread of influenza in the school compared to any other factors you tested?

3. One of the first things many people do when they first feel sick is to go to their doctor and ask for an antibiotic. Should this request for an antibiotic always be honored by the doctor? Provide a reason to support your answer.

4. Based on your mask wearing data, how do you think most flu viruses infect the human body?

5. Malaria is a different virus. Malaria is spread by mosquito bites. Would you expect wearing a mask to be effective in stopping the spread of malaria? Provide a reason to support your answer.

6. Look at the simulation image of the cafeteria with all of the students. Why do you think there were lots of flu infections at the end of six weeks even with the use of masks and other factors?
