



Flu Transmission

STEM Sims

Lesson 5: How Does the Use of Masks Affect the Spread of Influenza Through a School?

Influenza is a type of virus that can cause the common flu. During the peak of flu season, thousands of students miss many days of school due to the illness. Can the use of masks by students reduce the number of infections due to influenza?

Doing the Science

1. Start the Flu Transmission Simulation.
2. Select the “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 bar, which shows time running for a six-week period.
5. Select the “1” icon on the Progress bar.
6. 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. Flu Infections

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

7. Select the “2” icon on the Progress bar.
8. Count and record in Table 1 the number of infected students at the end of the second week of the flu outbreak.
9. Repeat this process until you have counted and recorded data for all six weeks.

What Do You Understand?

1. As time progressed, how did the number of students who were infected by the flu change?

2. Compared to your results from Lesson 1, how did the use of masks by students affect the spread of influenza in the school?

3. Construct an explanation to convince a person who was against mask wearing to wear a mask to prevent the spread of a pathogen.

4. Most cloth masks have a pore size of about 0.3 microns. Most viruses have a diameter of about 0.016 microns. Does this mean that cloth masks are *not* effective at stopping the spread of viruses? Support your response with a reason.

5. Surgeons and assistants in operating rooms have for many years worn masks to protect their patients from infections. Describe how medical professionals wearing a mask would protect a patient undergoing surgery.
