Why get a flu vaccination? (Appropriate for all ages)

This activity will demonstrate how the extent of vaccination affects disease spread. Cards will be used to represent a class of 24 students. Green cards will represent vaccinated, orange unvaccinated, and red infective (infected carrier) students. Visitors will see how quickly a virus spreads in a class over a three day period depending on the percentage of inoculated students.

Materials

1. Colored index cards (or similar cards made from heavy stock paper) - 15 red (or pink), 24 green, and 15 yellow (or blue) cards. A fun variant is to have a large stack of yellow cards so that each visitor can write their name on a card and follow their own fate during the activity.
2. Poster board
3. Marking pen

Preparation

1. Prepare a poster board or two so that you can post results during the day. Here is a suggested layout with sample data.

				Number of infected children		
# of students in Class	**% students that are immunized**	**# of immunized students**	**# of at risk students**	**Start**	**After 3 days**	**Did you get sick?**
24	90%	22	2	1	1	
24	65%	16	8	1	7	

Activity

Scenario

The flu is going around. Most, but not all of the students in your class are immunized. Sadie, who is not immunized unknowingly is exposed while visiting her grandparents on Sunday. On Monday she doesn't feel sick, and comes to school. There she works with her classmates and spreads the virus for three days. On Thursday Sadie feels terrible and stays home. How many of her classmates did she infect? You aren't vaccinated. Did you get sick?

Description

This activity will have 6 rounds, representing a morning and afternoon school session for each of the three days that Sadie is in school. Although Sadie may have interactions with all of her classmates, not all of these will result in transmission. We model this by assuming that she has two interactions in the morning and two in the afternoon that result in transmission if they occur with unimmunized classmates. The rate of transmission also will depend on the percent of students that are immunized. We suggest that you use two scenarios, 65% and 90% immunized. In the first, the odds of transmission are high, in the latter, they are quite low.

Scenario A. *65% immunization*

From the index cards, create a deck consisting of 16 green, 7 yellow, and 1 red. These represent immunized, unimmunized, and infective students, respectively. To make it more fun, write the name of the visitor on one of the yellow cards so that they can find out if they get sick.

Monday a.m.

1. Shuffle the cards.
2. Lay the cards out on the table in order until you reach the red card. Lay out one more card. What color are the cards adjacent to the red card? If a susceptible student (yellow card) is adjacent to a carrier (red card)

they become a carrier. The yellow card is replaced by a red card for the next round. An immunized student (green card) cannot be infected so green cards can never be converted red cards.

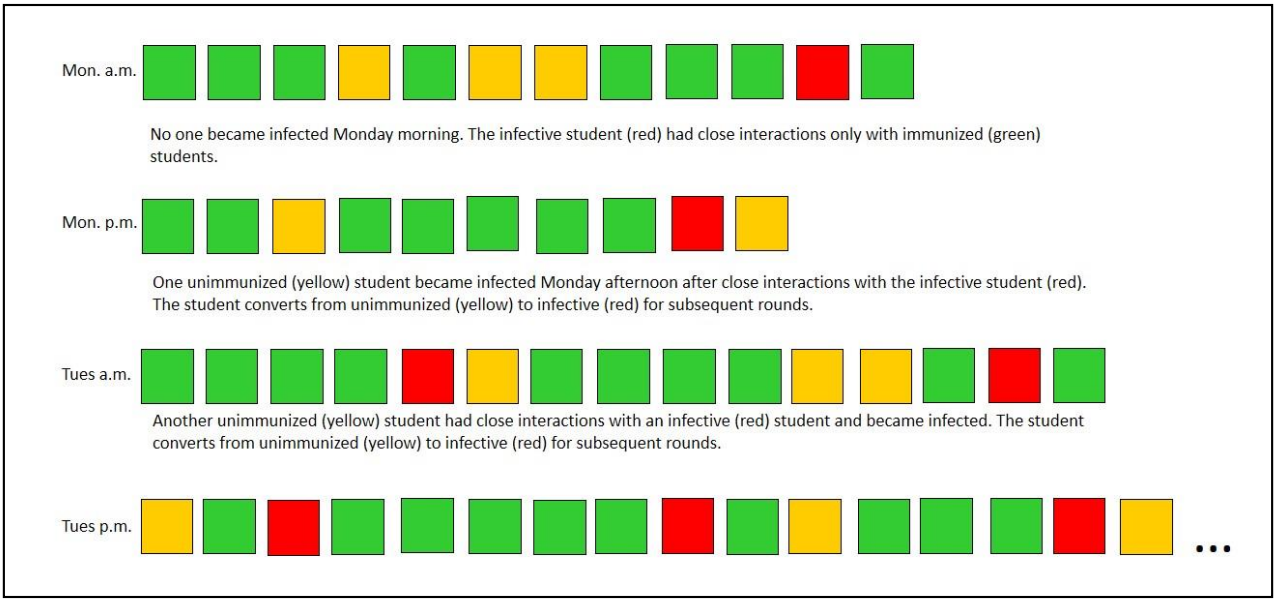
3. Replace any yellow card that is adjacent to a red card with a green card.

Monday p.m. – Wednesday p.m.

1. Shuffle the cards.

2. Repeat steps 2 and 3 as in Monday a.m. for each of the remaining half days.

At the end of the 6th round, determine the number of infected students and record the data on the poster chart. Did the visitor get sick? Record on the poster chart.



Scenario B. *90% immunization*

Repeat the scenario showing what happens if 90% of students are immunized. For this, a deck of 22 green, 1 orange, and one red card should be prepared. Follow the steps for Scenario A and record the results on the poster chart.