

Name _____

Period _____

Date _____

Bioterrorism **Lab**

Bioterrorist Response

Terrorists have released a deadly pathogen, Anthrax into the air. Anthrax is a bacterial infection that can be fatal. Fortunately there is an anthrax vaccination available. Vaccinations prevent people from becoming infected. The government must respond by vaccinating the population. Can enough people be vaccinated before its too late?

Roles and rules:

The infection - The red beans represent people infected with Anthrax. Start by placing one bean anywhere on the grid. Each turn double the number of infections (beans). Each turn after the first you may only place a bean on a square that is empty and touching an existing infected space.

The mayor- The white beans represent people that have received an anthrax vaccination. Each turn roll one or two die (depending on the scenario) and place the same number of beans anywhere on the grid. These squares can not be infected. The mayor must surround the infection to stop it.

Objective:

Stop the anthrax infection by completely surrounding it with vaccinated squares. The mayor has won if the infection has no more possible moves. The infection has won if it fills more than 75% (do the math) of the squares before the mayor can stop it.

X	X	X	X	
X	O	X	X	
X	O	O	X	
X	O	X	X	
X	X	X		

The mayor (X) has stopped the infection and won the game.

Directions:

1. Play at least three rounds, one for each of the scenarios below.

Scenario 1: The government is unprepared for the attack. As the mayor you may only roll one die at a time to distribute vaccines. You have not decided to vaccinate people ahead of time so the infection goes first.

Scenario 2: The government has prepared for the attack by increasing the number of vaccines available but has decided not to vaccinate people ahead of time. The mayor can roll two dice at a time, the infection however still goes first.

Scenario 3: The government has decided to be extremely prepared for the attack. They have produced many vaccines, so the mayor can roll two dice at a time. The mayor has also decided to vaccinate people before the attack. The mayor gets to roll the dice and vaccinate people three times before the infection gets a turn.

2. Record the data.
3. Answer the questions.

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Data and Questions.

<i>Scenario 1</i>			<i>Scenario 2</i>		
Turn	Total number of infections	Total number of vaccinations	Turn	Total number of infections	Total number of vaccinations
1	1		1	1	
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		

<i>Scenario 3</i>		
Turn	Total number of infections	Total number of vaccinations
1	0	
2	0	
3	0	
4		
5		
6		
7		
8		
9		
10		

Questions:

1. What did you notice about the mayors ability to stop the infection?

2. Which scenario do you think is most likely in the event of a real terrorist attack?

3. In real life, what factors effect the number of vaccinations available and how they are distributed?
