**Modeling the Spread of Disease**

Start with a population determined by your teacher.

My starting population is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Spread the beans representing your population on your grid.

Introduce one person infected with a virus into your population by dropping it on the grid.

If any part of another bean is in a square with an infected bean then that bean becomes infected to. Record the total number of infected beans in the chart.

Take out the beans that just became infected and replace them with infected beans. Randomly drop them into the grid and then scatter all the beans.

Any bean that is in any part of a square with an infected bean becomes infected. Record the total infected and keep repeating the process for three days. Graph the data for Day 0 through Day 3 and find a best fit model to describe the spread of the disease. Store this equation in Y1.

After you have looked at the model for the first three days, continue the process for a few more days. Graph this data and compare the plot to your equation. Try and explain what you see in terms of the equation with what you see in terms of the beans.

Explore ways to find a model that better fits all of the data.

|  |  |
| --- | --- |
| Day  | Number infected |
|  0 | 1 |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |