

Spread of Disease

Exploration Questions

For each of the following questions, set the population to 100 and run the simulation for about 50 days.

1. Think about a sickness like the common cold- it is easy to get and spreads quickly, but it is also easy and quick to recover from.
 - a. What would you set the parameters to in the applet to model this situation for one cold season?
 - b. Predict what will happen to the population before you run the model. Record your predictions.
 - c. Test your hypothesis using the model. Record your results. Were they what you expected? Why or why not?

*Remember, the 'Infection Rate' is the probability someone will get the sickness from someone who already has it; the 'Susceptibility Rate' is the probability that someone will be able to get the sickness again *after they have recovered from it*.

2. What would happen with a sickness like varicella (chickenpox)- it is very contagious, but is usually not dangerous and will go away in about 10 days. Once you get it, you are immune to it, and it is not likely you will ever get it again.
 - a. What would you set the parameters to in this applet to model this disease?
 - b. Predict what will happen to the population before you run the model. Record your predictions.
 - c. Test your hypothesis using the model. Record your results. Were they what you expected? Why or why not?

3. Now try modeling the disease AIDS. It is very unlikely someone will contract AIDS, but there is no cure for it.
 - a. What would you set the parameters to in this applet to model this disease?
 - b. Predict what will happen to the population before you run the model.
Record your predictions.
 - c. Test your hypothesis using the model. Record your results. Were they what you expected? Why or why not?