STUDENT INSTRUCTIONS

1) Log in to Whyville → Go to the Teleport Menu→CDC.
2) First, visit Outbreak Headquarters and get familiar with how infections spread through Whyville. Read through the examples and then visit the bulletin boards under the "post here!" and "submit case" links to see what other Whyvillians are saying about the viruses.
3) Once you've read up on how Whyvillians respond to viruses, visit the Virus Infection Graphs.
    a. Use the drop-down menu at the bottom of the graph to browse through data for several viruses.
    b. The graphs of some viruses look very different than others. What does this mean? Are some viruses more infectious than others? Discuss with your classmates.
4) Now that you've learned about viruses in Whyville, it is time to visit some simulators. First, we'll visit the Infection Simulator. To get there, visit CDC Lobby → Why-Pox Lab.
    a. Read the instructions for level one and begin.
    b. Fill out the worksheet as you play.
    c. Once you have finished level one, be sure to go on to level two by clicking "YES!" at the bottom of the page.
    d. Read the instructions for level two and begin.
    e. Fill out the worksheet as you play.
5) Now let's visit the Epidemic Simulator. To get there visit CDC Lobby → Why-Pox Lab.
    a. Read the instructions and begin.
    b. Fill out the worksheet as you play.
    c. Note: if you run multiple scenarios, each graph will show up on your screen. To refresh your screen, press F5.

Name	Date
Whyville ID	Class Period

1. What was this lesson about?	
2. Click only the center dot to "seed" the infection with just this one person. Choose to have this one person infect only one other person a day. Clear the simulation and do the same thing 5 to 8 times. Do you get same or different results? Why?	
3. How many people would each person have to infect per day for almost everyone in the population to catch the disease? Make a guess, then test your guess by choosing it on the bottom slider bar. Were you right, or are you surprised?	
4. What about if you start the disease with someone who is on the edge, i.e. someone who comes into contact with fewer people per day? What differences do you observe?	
5. Try seeding the disease with multiple people. Choose to have each person infect two others every day. How many people and which ones would you have to seed the disease with in order to get the whole population infected?	

Worksheet

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1. What was this lesson about?	
2. Choose for each person to infect two others every day. Choose to have the infectious period start on Day 1 and end on Day 3. Start with just one sick person. Run the simulation a few times and watch how long it takes for the epidemic to run its course. Does the length of the epidemic change? On average, how long does it last?	
3. Now, change the infectious period to start on Day 3 and end on Day 6 while keeping everything else the same. Again, run it a few times to get an average length of the epidemic. Is it longer or shorter than before? Any guesses why?	
4. What if you start the infectious period on Day 1 and end it on Day 6? Do you expect the epidemic to last longer or shorter? Give it a try to see if you're right.	
5. Keeping everything else the same, try clicking on the "Number of People" scrollbar. Simulate epidemics in a population with a few people, then try it with larger populations. Given your observations, when an epidemic strikes, what kind of town (big or small) and where in town would you want to live to increase your chances of staying healthy?	

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1. What was this lesson about?	
2. Choose to infect 3 people per person per day. Set Day 1 as the start of the infectious period and Day 1 as the end. Click "Graph". Now move the end of the infectious period to Day 2 and graph again. Move it to Day 3, Day 4, and so on. How do you expect the graphs to change? Does the peak of the epidemic happens sooner or later? Does the epidemic last longer or shorter? Does it makes sense to you?	
3. Now, change the infectious period to start on Day 3 and end on Day 6 while keeping everything else the same. Again, run it a few times to get an average length of the epidemic. Is it longer or shorter than before? Any guesses why?	
4. Now, try testing the beginning of the infectious period. Choose to infect 3 people per day. Set the END of the infectious period at Day 6. Change the start of the infectious period from Day 1 to 2 to 3 to 4. How do the graphs change this time? Can you explain the changes?	
5. Did you notice that you always held all the bars at the same number except one? Why did we do that? How does that help us understand what's going on?	