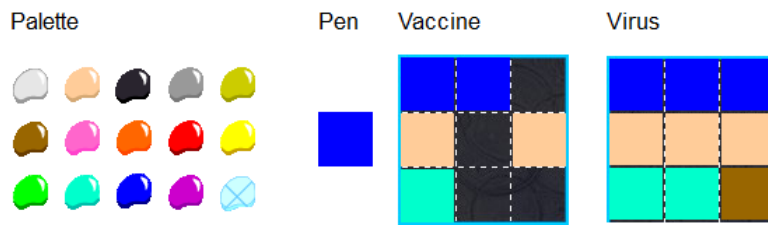


STUDENT INSTRUCTIONS

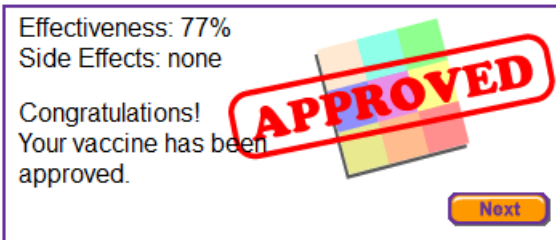
- 1) Log in to Whyville → Go to the BioPlex→BioPlex Lobby→Vaccine Lab.
- 2) Make sure to read through the tutorial before creating a vaccine. If you don't understand the material on the first try, read through it again or ask your teacher for help.
Hint: the information in the tutorial will be useful for your worksheet!
- 3) Once you feel like you have learned more about vaccines, go to the Design a Vaccine activity to create your first vaccine.
 - a. There you will see several viruses that are infecting Whyvillians. Click on one of the viruses to begin making a vaccine.
 - b. Next, design your vaccine. Remember that most vaccines work through *specific immunity*.



- 4) Once your vaccine is complete, try testing the vaccine on an animal. If it fails, make some changes to your vaccine. If it passes, proceed to human trials.

Your vaccine prevented infection in 77% of your subjects.
It caused no side effects!

- 5) If your vaccine does not pass human trials, be sure to make some changes to its structure and try again. If it does pass human trials, next try to submit the vaccine to the FDA for approval.



- a. Note: Most viruses will already have a patented vaccine created. This just means that you won't be able to sell it to other Whyvillians.
- 6) You can view all the vaccines you have created in your Vaccine Notebook.



Name		Date	
Whyville ID		Class Period	
1. What was this lesson about?			
2. What did you need to know to succeed?			
3. What new questions did you think of while playing through this lesson?			
4. What are the components of a virus?			
5. How does a virus reproduce?			
6. Which types of living things listed can be infected by viruses? (Circle answer)	animals	plants	humans microorganisms
7. What is an antibody? Which immune cell is an 'antibody factory'?			
8. In level 2, which role did you play? What part did you play in fighting the viruses?			
9. How do macrophages destroy viruses?			