

4-3

Understanding Disease Hosts


In Task 4-2, the team learned more about factors that affect how diseases can be spread to a host. In the models in Task 4-2, the human was the host. The mosquito was the vector.

Objective

In this task, the team will run a series of transmission models with a variety of different mosquito-borne disease hosts. This will help you understand more factors that can affect the spread and transmission of mosquito-borne diseases through a community.

In this task, the team will be focusing on the following questions from the question map.

- How do mosquitoes spread disease?
- What factors influence this?

1. Go to the Task 4-3 folder and get the Vector and Host Game instructions. There is only one version of this task, but can be played inside or outside. You decide! 
2. As a team, go over the following terms.
 - A **disease vector** is an organism that can transmit diseases between humans or from animals to humans.
 - A **disease host** is an organism that can harbor a disease and typically provide the disease nourishment and shelter. Diseases can survive in a host over a period of time. There are two types of hosts, primary and secondary.
 - In **primary hosts**, the diseases living in these hosts can be spread back to other mosquitoes and then to other humans or animals.
 - In **secondary hosts**, the disease is not transmitted to other mosquitoes or animals.
3. Use the instructions in the task folder to play the Vector and Host Game.
4. As a team, discuss the questions in the game instructions.
5. As a team, discuss:
 - How can models such as this game be helpful when doing research?
 - What are some ways this model does not accurately model mosquito-human interactions?
 - What factors can affect how quickly a disease spreads through a group of mosquitoes and humans?
 - What other factors do these models not incorporate? How could you incorporate them into the model?
6. Develop a new model of your own using this setup. Run the model and compare the results
 - How can models such as these be useful when thinking about questions on the map, such as what factors influence how mosquitoes spread diseases? **How can we ensure health for all from mosquito-borne diseases?**



Task 4-3

Mosquito! Task 4-3 Understanding Disease Hosts - HHMI West Nile Game Resources

<https://www.hhmi.org/biointeractive/west-nile-virus-vectors-and-hosts-game>

