



High School Science Virtual Learning

**Applied Biological Science**

**West Nile Virus**

May 01, 2020



High School Applied Biological Science  
Lesson: May 1st, 2020

**Objective/Learning Target:**

**Students will understand how the West Nile Virus is spread and how it affects its host organisms.**

## Let's Get Started:

1. What is meant by “The West Nile Virus is an arthropod borne virus.”?
2. What are some symptoms of the West Nile Virus in humans?





## Let's Get Started: **Answers**

1. A virus that is spread by an insect.
2. Some have no symptoms, some have flu like symptoms like fever and headaches, the most serious can get brain swelling.



# Lesson Activity:

## Directions:

1. Watch the video over the West Nile Virus.
2. Then click on the West Nile Virus Interactive and use it to answer the practice questions.

Link(s): [West Nile Video](#)  
[West Nile Virus Interactive](#)



# Practice

You will use the information from the activity to answer the following questions.



# Practice Questions

1. What organism is the disease-carrying vector discussed in this interactive?
2. What group of animals tends to be affected most severely by West Nile virus?
3. How severely are humans affected by West Nile virus infection?
4. West Nile virus isn't transmitted directly from bird to bird or bird to human. How does the virus spread from one organism to another?
5. An amplifying host is a host in which the level of pathogen can become high enough that a vector, such as a mosquito that feeds on it, will probably become infected. What is the amplifying host for West Nile virus?

## Answer Key

Once you have completed the practice questions check with the work.

1. Mosquitoes
2. Birds
3. Human symptoms are typically mild however, some people do end up with brain swelling.
4. Mosquitoes are vectors for the West Nile Virus which means that when they consume blood from birds that are infected then they bite a human to consume their blood, they pass the virus from themselves to the human.
5. Birds are the amplifying host for the West Nile Virus because they are the main organism that are infected and can become so infected that a vector like mosquitoes could pass it on.





# More Practice

You will continue to use the interactive to answer the following questions.

## More Practice Questions

1. What is meant by the phrase, “Humans are a dead-end host”?
2. Name two factors that determine how infectious a host is for West Nile virus.
3. What climate conditions are thought to have affected West Nile virus transmission in 2012?
4. Look at the diagram on slide 21. What factors in the environment affect both the vector and the host?

## Answer Key

Once you have completed the practice questions check with the work.

1. When a human contracts the West Nile Virus they do not pass it on, even if a mosquito bites them and then bites a new person it does not get passed on. So the virus ends with the person and does not get passed on from person to person.
2. Its susceptibility to infection, the level of virus in its blood, and how long this high blood level of virus is maintained.
3. Mild winter, early spring, and hot summer
4. The virus genetic makeup; The type of mosquito it infects; The mosquito's feeding preferences; The host's susceptibility to infection; The host's prevalence in areas where mosquitoes live; Climate and temperature.



# Additional Practice/Resources

[CDC Website for WNV](#)

[West Nile Virus Card Game](#)