BIOSECURITY DOMINOS

See how quickly illnesses can spread—or be stopped in their tracks.
Biosecurity Dominos

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About the Activity

This is the second in a four-part educational series about preventing and treating illness in animals. You can see the other activities on 4-H Veterinary Science on 4-H at Home.

We know that viruses and illnesses can spread rapidly from one person to another. Think about when someone in your family gets a cold: A lot of times, once one person in the house gets it, it quickly spreads to others, too. Well, the same thing can happen among animals on a farm, too, because when one animal gets sick it can easily quickly spread that illness to others – after all, there’s only so much space in a barn!

In this activity, kids will use dominos (or something similar), arranging them in different ways to simulate how illnesses are spread and stopped. In this activity, each block represents an animal, and each fallen block represents an animal getting sick.

Supplies

These simple materials will get you started:

• Dominos, Jenga blocks, or something similar.
• A checkerboard, table top or some other small, flat surface

Grades: 6-8

Topic: Animal Science
Time: 25 minutes
Activity Steps

1. Place 15-20 dominos on your flat surface in a space about the size of a checkerboard. Arrange them and space them so that when you knock one down, it will hit the next one, which will hit the next one, and so on, until all the dominos are knocked down.

_DID YOU KNOW:_ Diseases and other illnesses can spread in a lot of ways. Sometimes that is when an animal directly puts the pathogen (any microorganism that can cause an illness), into another animal’s body. If that sounds strange, think about one of the most common ways that happens – mosquitoes. Animals like mosquitoes that directly infect another animal are called vectors.

2. Now, set the dominos up again. This time, arrange them so that one domino knocks down all the others, except for one.

_DID YOU KNOW:_ An animal that is carrying an illness but doesn’t show any signs, or symptoms, is called a reservoir.

3. Finally, set the dominos back up and arrange them so that when you knock one down, none of the others are knocked down.

_DID YOU KNOW:_ Biosecurity is an action taken to prevent sickness from spreading. Some forms of biosecurity include increasing the physical distance between animals (or people) apart, quarantining sick animals (keeping the sick ones apart from the well ones), and by using vaccines to make animals immune to certain illnesses (being immune means your body has the ability to resist a given illness).
See how well you know biosecurity?

**QUESTION 1**
What is biosecurity?
- a. A biology textbook stored safely in your school locker
- b. A snack people ate a long time ago
- c. Actions taken to prevent illnesses from spreading
- d. Safely stored food products

**QUESTION 2**
What is an example of an animal vector?
- a. A mosquito
- b. A horse
- c. A seahorse
- d. A slug

**QUESTION 3**
What does having biological immunity mean?
- a. That you can’t hear very well
- b. That you are in a barn with a lot of sick animals
- c. That your body has the ability to resist an illness
- d. That you’ve already been sick, and can’t get sick again

**QUESTION 4**
What is one way to increase biosecurity in a group of people or animals?
- a. Increasing physical distance
- b. Quarantining
- c. Vaccines
- d. All of the above

**QUESTION 5**
True or false? A pathogen is another name for a microorganism that can cause sickness?
- a. True
- b. False

**Reflection Questions**

**Questions to deepen wonder and understanding**

- How are the blocks that you used for the activity a model for how sickness can spread between animals or people?
- Have you heard of any illnesses that can spread between both animals and people?
- What type of diseases have you seen or heard about spreading between animals, or between people?
- What do you do to prevent germs or illnesses from spreading in your home or at your school?
Investigate & Explore

Take your new knowledge to the next level.

You’re probably a lot more familiar with the concept of disease spread now than you were before the coronavirus pandemic broke out in 2020. But the same principals have always applied to limiting the spread of sickness, and farmers have always been especially concerned with that. That’s because if one animal gets sick, it is very easy for the rest of the animals around it to get sick, and those animals are a farmer’s livelihood.

Now, we all understand how important it is to limit the spread of germs and pathogens. And the same fundamentals that mattered before the coronavirus still matter now: regularly washing your hands, sneezing into your elbow, and limiting your exposure to other sick people always have been and always will be the best ways to keep yourself – and others – healthy.

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To see the other activities in this series, visit our Stopping Sickness activities page.