

How Close Is Too Close?

Using Standard and Non-standard Measures



Healthy Actions • Community
Knowledge • Science

FOR GRADES
K-2 3-5 6-8

OVERVIEW

The COVID-19 infection has made “social distancing” a common phrase. It means that we should keep a “physical distance” of at least six feet from other people. Why six feet? That is the typical maximum distance that tiny respiratory droplets travel in the air after someone sneezes, coughs, talks or sings.

Some people infected with SARS-CoV-2, the coronavirus that causes COVID-19, do not feel sick. However, they still can pass the virus to someone else. Physical distancing is one of the best ways to keep the virus from reaching and infecting other people.

LEARNING OBJECTIVE

Students will measure distances of 6 feet using standard and non-standard units.

SCIENCE, HEALTH AND MATH SKILLS

- Measuring
- Comparing
- Observing
- Communicating

NGSS SCIENCE AND ENGINEERING PRACTICES

- Analyzing and interpreting data
- Using mathematics and computational thinking

TIME

- Set Up: 5 minutes
- Activity: Two 45-minute classes

MATERIALS FOR SCIENCE INVESTIGATION

Teachers

- How Close Is Too Close? Slide Deck (www.bioedonline.org)
- Computer or projector

Students

- How Close Is Too Close? Student Page (electronic or hard copy)
- Ruler or measuring tape
- Household or classroom items that can be used to measure distance
- Tape or sticky notes

SET UP AND TEACHING TIPS

This activity begins with a class discussion guided by slides. Students then use household or classroom objects to conduct non-standard measurements of six feet. You may assign the hands-on portion of the activity as homework. If students do not have a ruler or tape measure at home, have them download a printable ruler (<https://www.avery.com/resources/avery-printable-ruler.pdf>).

PROCEDURE

ENGAGE

1. Project the title slide of the How Close Is Too Close presentation and read the question.

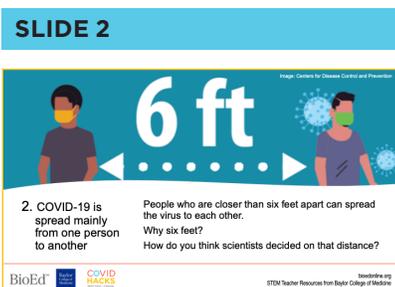


How can social distancing slow the spread of COVID-19?

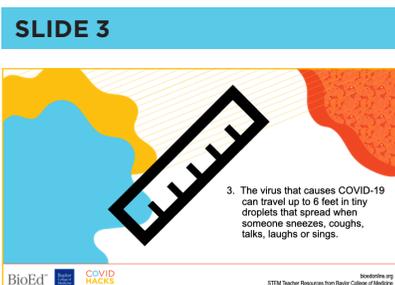
Ask students what they know about “social distancing.” Encourage them to share their ideas.

EXPLORE AND EXPLAIN

2. Use the slides to guide a discussion with students.



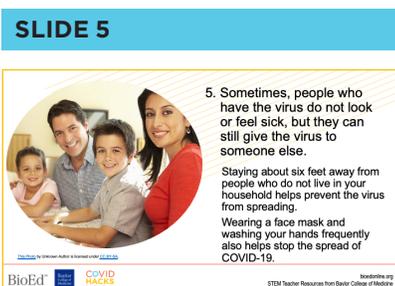
Explain that scientists have learned the virus that causes COVID-19 is spread through person-to-person contact. Virus particles contained within tiny droplets of saliva and mucous are released into the air when people talk, shout, laugh, sing, cough or sneeze. Ask, *Why do health experts recommend that we keep a distance of six feet apart?*



Direct students’ attention to the image and explain that scientists have found that droplets from a sneeze, cough, talking etc. can travel about six feet in air.



Ask, *Where can these droplets go?* Into the mouths, noses and eyes of others! Once a virus enters the body, it can infect a person’s respiratory system and can cause illness.



Remind students that some people infected with the virus may not look or feel sick. It might take several days for them to develop COVID-19 symptoms, but they still may be able to pass the virus to others during this time. Some people develop few or no symptoms, but they also can spread the virus. This is why it is important to wear a mask and practice physical distancing when around other people who do not live in your household. These steps help to prevent disease.

■ EXTEND

3. After the slideshow say, *We know that COVID-19 is spread through person to person contact. Physical (or social distancing), which means keeping at least 6 feet from others, is one way to limit the spread of the virus. What does 6 feet look like if you can't measure it?*
4. Explain to the class that they will use household items to see just how far apart they should stand from others?
5. Project the student page and review the instructions together. You, the teacher, can assign due date for work completion.

■ EVALUATE

6. Have students describe how they used alternative units of measurement to estimate six-foot distances. Or, if they complete this portion of the activity as homework, have students make a drawing or have someone at home take a photo of their unique non-standard measures.
7. Conduct a discussion with students about ways in which they can maintain their social contacts but remain physically distant. Accept all answers. Possibilities include seeing others outdoors at a safe distance or meeting using video calls or conferencing.

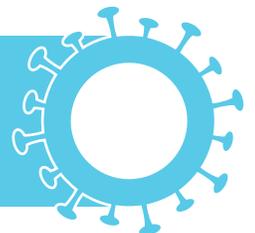
THE SCIENCE

According to the CDC, COVID-19 spreads mostly among people who are in close contact. “Close contact” usually means being within six feet of another person for longer than 15 minutes. The virus that causes COVID-19 spreads when an infected person coughs, sneezes, laughs, talks or sings. These actions spray tiny, invisible droplets of saliva or mucous into the air. The droplets can contain virus particles which, in turn, can land in the mouths, noses or eyes of people nearby. New studies have found that people who are infected can spread COVID-19 even if they are not experiencing symptoms. This is why it is important to maintain an appropriate physical distance from people not living in your household, and to wear a face covering (mask) over your mouth and nose. In general, it is safest to avoid crowded places and gatherings where it may be difficult to maintain physical distancing.

■ RESOURCES

- Scientific American. Human Body Ratios.
<https://www.scientificamerican.com/article/human-body-ratios/>.
- Centers for Disease Control and Prevention (CDC). Social Distancing.
<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html>.

The COVID-19 infection has made “social distancing” a common phrase. It means that we should keep a “physical distance” of at least six feet from other people. Why six feet? That is the typical maximum distance that tiny respiratory droplets travel in the air after someone sneezes, coughs, talks or sings.



COVID HEALTHY ACTIONS, COMMUNITY KNOWLEDGE AND SCIENCE

■ A SCIENCE-BASED CURRICULUM FOR THE COVID-19 PANDEMIC

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How Close Is Too Close?

Assignment



OVERVIEW

COVID-19 spreads through droplets that are sent out into the air when an infected person talks, coughs, sneezes, sings or laughs. Some of these droplets can travel as far as 6 feet away.

It's possible for someone to be infected with the virus that causes COVID-19 and not feel sick. That's why it's important to keep a safe distance of about 6 feet from other people who do not live in your household.

How far is 6 feet?

PART 1

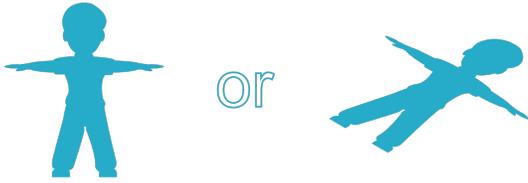
USING NON-STANDARD MEASURES

1. Using a ruler or measuring tape, mark off a 6-foot line on the floor. Use a piece of tape or a sticky note to mark the beginning and ending distance you measure.
2. Look around the classroom, house, yard or garage to find non-standard objects that you can use to measure distance. For example, *how many spoons does it take to mark off 6 feet?* Measurements must be made using only one kind of item (for example all spoons).
3. Use the items to mark out a 6-foot distance. If you're doing this at home, make a drawing or have someone take a photo of your unique form of measurement.
4. Now you know how far 6 feet is. During the COVID-19 pandemic, it's important to keep a distance of about 6 feet from people who do not live in your household. *How can you use this information to keep a safe distance from others if you are in a group?* Let's see how using our arms might help.

PART 2

ESTIMATING 6 FEET

1. Stand (or lie down) with your arms stretched out horizontally (from your sides), as shown in the illustration below.



2. Ask someone to measure the distance between the middle fingertip on one hand all the way across to the middle fingertip of the other. This is called your “arm span.”
 - *What is the measurement?*
3. If your arm span measures 4 feet:
 - *How much farther would you need to stand to keep a safe distance from other people?*
4. Knowing your arm span can help you estimate what 6 feet looks like!

FUN FACT

Did you know that your arm span is about the same measurement as your height?