bitesizeactivities

Safer with Science: Masks

Activity Description

In March 2020, COVID-19 was detected in people in the United States, and we find ourselves living amid a pandemic. A pandemic occurs when a disease or sickness spreads over a large region, like a whole continent or the entire world. COVID-19 is caused by the coronavirus, specifically by the SARS-CoV-2 virus, which is highly contagious and spreads via respiratory droplets. Respiratory droplets are those little bits that fly out of your mouth when you breathe, speak, sing, cough, or yell.

Masks are just one tool that we all can use to help reduce the spread of COVID-19. By wearing a mask, you are protecting yourself by covering your nose and mouth. This means that those little droplets sneezed out by a person no longer land on surfaces, instead they land on your mask. By wearing a mask, you significantly reduce the number of respiratory droplets that get into the air, as we are going to demonstrate in this activity!

COVID-19 and pandemics are serious topics and can be scary, but understanding how respiratory viruses spread and what action we can take to reduce our risk can help make it less scary.

Materials

- Flashlight or Laser Pointer
- Spray Bottle or Mister
- Water
- Variety of Face Masks
- Paper Towel, Fabric pieces, or other materials to test (optional)
- Serving Tongs (optional)
- Jar or Cup (optional)

Preparation and Safety

Make sure that your spray bottle or mister only has water in it - no harsh chemicals or chemical residue! When misting water, the floor or surrounding area may become wet or slippery. Watch your step! Be careful not to shine the flashlight or laser pointer directly into the eyes of people or pets.

Procedure

1. Try out your spray bottle or mister into an area in front of you. This is your simulated "sneeze." Can you see the mist or droplets?
2. Now, try shining a flashlight or a laser pointer above or beside the space you are spraying from and then spray again. Do the droplets show up in the light? If you are having trouble seeing the droplets in the light beam, you may want to find a darker location for your experiement.
3. Now set up your mask so that you can "sneeze" or spray into it with the spray bottle.
4. Shine the beam of light or the laser into the area in front of the mask, and then "sneeze" by spraying into the mask. Do you see many droplets coming through the mask into the light or only a few? How does this compare when you spray with no mask?
5. Try out a "sneeze" into vareity of other masks or other materials you have collected to test. You could try spraying into a paper towel or a tissue. You could try layering materials. Which materials work better than others at keeping the "sneeze" in? Are there any other materials that stop the spray from getting through the mask?

NOTE: There is a video that goes with this activity. If you would like ideas or are having any trouble with the steps, check out the video linked below.

Extensions and Adaptations

- Draw your favorite character from a book, tv show, movie, or video game wearing a mask. Create a story about this character and imagine how they feel about wearing a mask.
- Design your own mask based on the information that you collected during your sneeze experiment. What materials would you use? Would you make your mask your favorite color or add a fun pattern? Be creative and make it a mask that you would enjoy wearing!

Safer with Science Video

Lab@Home Safer with Science - Masks by the Museum of Life and Science