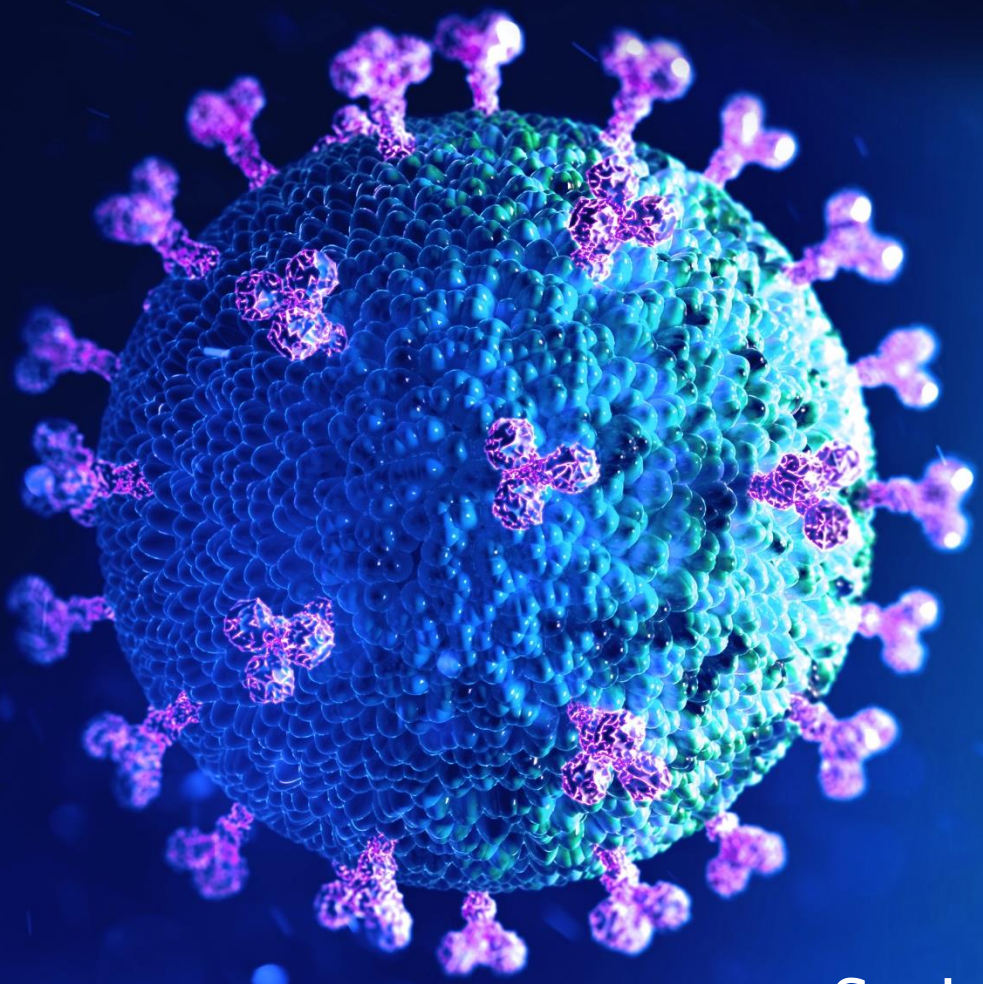
Coronavirus Disease (COVID-19)

Information for Teachers of Students With Visual Impairments



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Coronavirus Disease (COVID-19) Information for Teachers of Students With Visual Impairments

This document addresses topics found in the National Health Education Standards:

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Standard 3: Students will demonstrate the ability to access valid information and products and services to enhance health.

Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.

(Joint Committee on National Health Education Standards, 2007, p. 8)

Expanded Core Curriculum Areas Addressed:

- Compensatory or Functional Academic Skills
- Independent Living Skills
- Orientation and Mobility
- Self-Determination
- Social Interaction Skills
- Assistive Technology

COVID-19

COVID-19 is a respiratory infection caused by the novel coronavirus (SARS-CoV-2). The virus emerged in late 2019 and spread globally, causing a pandemic in the United States and throughout the world. Coronaviruses are a large family of viruses that cause the common cold as well as more severe illnesses, such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). According to the World Health Organization, these viruses can infect both humans and animals.

Symptoms of COVID-19 include fever; coughing; shortness of breath and other breathing difficulties; loss of taste and smell; diarrhea, vomiting, and nausea; and ranges from mild to severe respiratory illness. People with pre-existing conditions, such as cancer, chronic pulmonary diseases, asthma, heart disease, and even diabetes or advanced age, can become severely ill from COVID-19, sometimes leading to death. A person can carry the coronavirus that causes COVID-19 and not show any symptoms.

Activity: Creating a Model of the Coronavirus

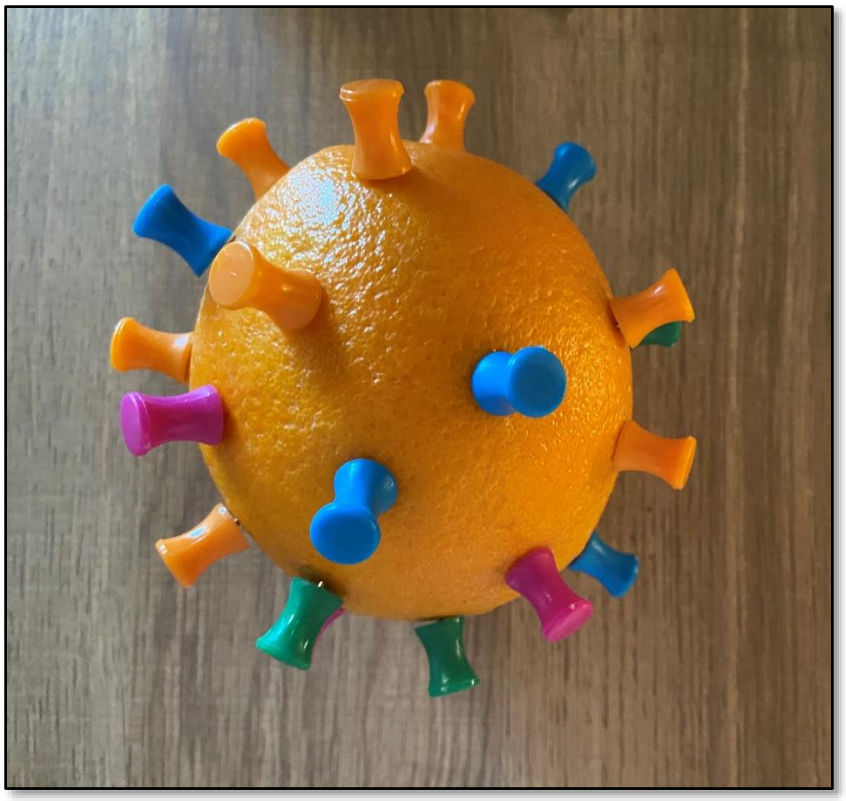
Teachers and students create a tactile representation of the coronavirus that causes COVID-19.

MATERIALS

- Orange
- Pushpins

DIRECTIONS

1. Use the orange as the center of the virus.
2. Place pushpins randomly around the outside of the orange. Please note that the color and type of pushpin do not matter.
3. Allow students to explore the model and describe what they observe.



Photograph of a model of the coronavirus made from an orange and pushpins

PRINT A 3D MODEL OF COVID-19

1. Download the free Coronavirus STL file using the following link from Thingiverse: https://www.thingiverse.com/thing:4225988/files.
2. Open the STL file in the software package appropriate for the 3D printer used to print the model.
3. Prepare the file for 3D printing on the 3D printer from within the software package used to open the STL file.
4. Print the prepared file on the 3D printer using the software package.

Photograph of a 3D-printed model of the coronavirus

Additional Resources that Explain the Coronavirus (SARS-CoV-2)

"Coronavirus: How to Teach Kids About COVID-19" from BrainPOP
https://www.youtube.com/watch?v=GoXxmzKdick

"COVID-19 presented by Elizabeth Cox" from TED-Ed Lessons Worth Sharing
https://www.youtube.com/watch?v=D9tTi-CDjDU

Transmission of COVID-19

Person-to-person transmission of the coronavirus takes place via droplets that are produced when an infected individual coughs, sneezes, or even talks. Most often, the virus is transferred from an infected to a healthy individual through close contact when droplets carrying the virus directly reach the nose, mouth, or eyes; or through physical contact, such as a handshake. When an infected person coughs, sneezes, or talks, they expel large droplets that carry the virus; these droplets can travel approximately

6 feet (Rodriguez-Palacios et al., 2020). Small droplets that also carry the virus are aerosolized and can travel 20-26 feet (Bahl et al., 2020). Airborne coronavirus plumes survive in the air for up to 3 hours, but the concentration of viruses decreases quickly, with one-half of the amount remaining after the first hour (van Doremalen et al., 2020).

NOTE: In all activities described in this document, teachers and students should follow current CDC COVID-19 guidelines with regard to wearing masks and social distancing whenever possible.

Activity: Transmission of COVID-19

This activity examines how COVID-19 is transmitted from person to person through a cough or sneeze. Students test how far droplets from a simulated "infectious" spray scenario can be ejected.

MATERIALS

- Spray bottle
- Large print or tactile ruler, meterstick, or measuring tape
- A writing device to record results
- Paper towels
- Pencil
- Optional: APH Quick-Draw Paper

DIRECTIONS

PART I: How far can droplets travel?

1. Fill up a spray bottle with water. Test the spray bottle over a sink; set the nozzle so that it produces a fine mist with medium-sized droplets in your hand. Once this spray pattern is set, do not change it. (You may need to prime the pump between steps and/or activities).
2. One student sits on the floor with the spray bottle placed in front of them. Another student stands directly in front of and facing the seated peer. The spray bottle on the floor is pointed at the legs of the person standing in front of the seated student. NOTE: If wearing pants, the standing student should roll the pant legs up.
3. The seated student sprays one complete spray. Wait 30 seconds for droplets to complete their trip. The student standing describes what they felt. Did they feel a lot of droplets? Where did the droplets

land? Record these observations. Use a paper towel to wipe away any water droplets on the legs of the standing student.

4. Next, the standing student takes one step back. The seated student remains where they are and does not move the spray bottle. Again, the seated student sprays one complete spray. After 30 seconds, ask the standing student to describe what they felt, making note of where the droplets landed. Record the observations, including the change of distance between the seated student and the standing student using an adapted length-measuring device. Use a paper towel to wipe away any water droplets on the legs of the standing student.
5. The standing student continues the process of moving one step backward until they no longer feel any water droplets sprayed on their legs.
6. Measure and record the final distance between the seated student and the standing student, using the adapted length-measuring device.
7. Discuss with the students how the droplets felt with each movement backward. What conclusions could be made from the recorded data?

PART II: How far can droplets travel when coughing or sneezing at different angles?

1. Using the same spray bottle as in Part I, angle the spray bottle with the nozzle up (to about 10 degrees), using a pencil propped under the bottle on the same side as the nozzle. Create an observation document and record the findings under the heading "Angle Up."
2. Again, the student seated on the floor sprays water on the legs of the student standing directly in front of and facing them with one complete spray.
3. Follow the procedure as outlined in Part I, noting the change in location of the traveling water droplets on the legs of the standing student and the change in distance traveled by the standing student.
4. Repeat this same procedure with the spray bottle angled down, using a pencil to prop the bottle on the side away from the nozzle. Record your findings in the observation document under the heading "Angle Down."

DISCUSSION

1. Which spray-bottle orientation (flat bottle, angled-up bottle, or angled-down bottle) allowed the water droplets to travel the farthest?
2. If the spray-bottle represented a person sneezing, would you want to be directly in front, angled up, or angled down from this person?

Optional: Students may choose to spray the water at different distances onto a piece of APH Quick-Draw Paper and then use their hands to feel the swelled paper. Students can compare how the paper felt when sprayed at from different distances and angles.

Results: Oral and nasal microdroplets travel pretty far from our mouths! If we sneeze with our faces upward, droplets spread even farther! Try to angle your head down when you sneeze or cough!

Additional Resources to Discuss Sneezing and Disease Transmission

"The Physics of the Sneeze" from Nature Video
https://www.youtube.com/watch?v=bFxgVkslD-k

"All About Sneezes!" from SciShow Kids
https://www.youtube.com/watch?v=zVmzQuxlfw8

Preventing Airborne Transmission of COVID-19

The best way to prevent close contact and airborne spread of the coronavirus is to wear a cloth or surgical face mask and maintain a physical distance of at least 6 feet away from another person. Face masks are most effective when they are worn by everyone. If both infected and non-infected persons wear face masks and keep physical distance, the risk of transmission during the encounter is minimal. Face shields made of clear plastic are effective and can further reduce the risk of transmission, but they should always be worn with a mask. Proper ventilation of indoor spaces is important to prevent airborne transmission. The risk of transmission is reduced during outdoor activities.

Activity: Determining 6 Feet for Social Distancing

This activity helps students to recognize the spatial layout of social distancing.

MATERIALS

- Large print or tactile ruler, meterstick, or measuring tape
- Tactile marker, such as a rock or tactile tape

DIRECTIONS

1. Ask students how far away from their own bodies 6 feet is, and how they would determine this.
2. Ask students to stand in a stationary position. The instructor states they will clap their hands as they move away from the students and for the students to announce when they think there is 6 feet between themselves and the instructor.
3. The instructor begins clapping their hands and starts to move backward, stopping when the students think they are 6 feet away. The instructor places a tactile marker at that point.
4. The instructor measures the distance between the students and the tactile marker.
5. If the measurement is not 6 feet in distance, the instructor walks with the students from their starting place to a point 6 feet away.
6. Discuss with the students how they could determine 6-foot distancing in the future. What indicators could they use to ensure that people are 6 feet away from them? (e.g., number of cane lengths, number of arm lengths, number of steps, distance-measuring app on smartphone, etc.). Practice making 6-foot measurements with students, including using ideas generated during discussion.

Activity: Exploring Airborne Transmission of COVID-19

In this experiment, students determine how fabric prevents the ejection of macroscopic (visible) droplets during a cough or sneeze, and how some droplets can get past a fabric barrier and reach another person or a surface.

MATERIALS

- 1 spray bottle
- 1 empty cereal box
- 2 pieces of fabric approximately 5 inches square (e.g., old cotton shirt, scrap cloth, or other textile pieces)
- Scissors
- Object to be used as a weight (e.g., flatware or a soup can)
- Large print or tactile ruler, meterstick, or measuring tape
- Paper towels
- Optional: APH Quick-Draw Paper

Three photos of materials for transmission experiments. Left photo: empty cereal box with a window approximately 4 inches square in size cut out on both sides of the box; center photo: cereal box, spray bottle, two pieces of fabric, scissors, and tape; right photo: cereal box with fabric covering one of the box's cut-out windows.

DIRECTIONS

1. Cut two windows approximately 4 inches square on both of the wide sides of the box, approximately 6 inches from the bottom. The spray bottle nozzle should be at the level of the windows when the bottle and box are standing on the floor.
2. Tape a single layer of fabric over one of the windows.
3. Secure the box in an upright position by placing heavy objects, such as flatware or a soup can, inside.
4. Place the cereal box directly in front of a standing student with as little

space as possible between them and a student seated on the floor facing the standing student. If the standing student is wearing pants, they should roll the pant legs up. The side of the box with the covered window should face the standing student and the toes of the standing student should touch the box. The seated student places the spray bottle on the floor with the nozzle pointed to spray through the cloth-covered window of the box toward the legs of the standing student. If the bottle is too tall, angle the bottle so the stream is as close to horizontal as possible, or raise the box with a sturdy object such as a book.

5. The seated student gives one complete spray (you may need to prime the pump), making sure to wait 30 seconds to let the droplets fall. The standing student describes what they felt. Did they feel a lot of droplets? Where did the droplets land? Record these observations. Use a paper towel to wipe away any water droplets on the legs of the standing student.
6. Next, the standing student takes one step back. The seated student remains seated, and the water bottle and box stay in place. Again, the seated student gives one complete spray. Ask the standing student to describe what they felt, making note of where the droplets landed. Record the observations, including the change in distance between the seated and standing students. Use a paper towel to wipe away any water droplets on the legs of the standing student.
7. Continue the process of the standing student moving one step backward until they no longer feel any water droplets on their legs 30 seconds after each complete spray.
8. Measure the distance between the seated student and the standing student using an adapted length-measuring device and record.
9. Discuss with the standing student how the droplets felt with each step backward. What conclusions can be made from the recorded data?

Optional: Students may choose to spray the water through the box with the cloth at different distances onto a piece of APH Quick-Draw Paper and then use their hands to feel the swelled paper. Again, students can compare how the paper felt when sprayed at different distances.

Save the box for use in the next experiment.

Results: Microdroplet spray is reduced by a cloth barrier. Most macro-droplets are contained by the face mask, but some droplets get through. This is why it is important to keep a minimum of 6 feet distance between individuals. Because some droplets get through cloth coverings and land on surfaces, it is important to wash your hands and avoid touching objects to prevent the spread of illness!

Additional Resources on Transmission of the Coronavirus

"COVID-19 PSA. How to Stop the Spread" from BrainPOP
https://www.youtube.com/watch?v=RX3LgoW2Y_Q

"How Contagious is COVID-19? (Transmission, Spread, and R0)" from Neural Academy
https://www.youtube.com/watch?v=RzW9UUmImVA

Transmission of Coronavirus via Objects

The coronavirus can also be transmitted by touching an object or surface with the virus on it and then touching the mouth or eyes before washing hands. This is known as fomite transmission. The coronavirus can survive on surfaces, such as door handles, cardboard boxes, tables, utensils, and other shared surfaces. The best way to prevent fomite transmission is handwashing. Washing hands with soap and water for at least 20 seconds and refraining from touching the mouth, nose, and eyes reduces the risk of getting sick from the coronavirus and many other infectious diseases. Hand sanitizer containing at least 60 percent alcohol is effective against coronavirus but only on clean hands.

Depending on the type of the material, the coronavirus can survive and remain infective on surfaces for up to 3 days. It survives on copper for up to 4 hours, on cardboard for up to 24 hours, and on plastic and stainless steel for at least 72 hours (van Doremalen et al., 2020). Frequent cleaning and sanitation of surfaces is important to prevent transmission.

COVID-19 Safety During Daily Activities

Grocery shopping. You will encounter other people during daily activities, such as grocery shopping. There are several ways to protect yourself in these instances. Use hand sanitizer before entering the store and after you finish shopping. Wipe the shopping cart handle with a disinfectant wipe (or something similar) and wear a mask. Maintain at least 6 feet of physical distance from other people during the shopping trip. The biggest risk for COVID-19 transmission is being near individuals who carry the virus. Avoid aisles with other shoppers. Come prepared with a list and spend the least possible amount of time to complete your shopping. Avoid touching produce when in the fruit and vegetable sections of the store. Touch only the foods you intend to purchase. Do not come to the store if you are symptomatic. Instruct students to bring a trusted friend with them to help with shopping. Ensure that the invited friend is not symptomatic, wears a mask, and maintains 6 feet of physical distancing. Instruct students that if they choose to use a shopping assistant at the grocery store to be sure to ask if the assistant is wearing a mask and is symptom free, and to ask that they maintain 6 feet of social distance. Either have the shopping assistant choose the product needed or ask that they inform the student as to the location of the item needed.

Take-out food and delivery. There are currently no reports indicating that take-out food or drive-through access lead to increased illness. To minimize the risk, wash your hands and use hand sanitizer after handling food packaging. Food delivery presents a low risk as long as the restaurant practices a no touch/no interaction policy. However, if physical distancing is not practiced during delivery, then the delivery may present a risk of transmission of the coronavirus.

Additional Resource About Produce Safety

COVID-19 produce safety information from The Ohio State University's Fruit and Vegetable Safety Program
https://producesafety.osu.edu/covid-19

Activity: Spreading Germs

This activity demonstrates how germs are spread and how our bodies are protected against them.

MATERIALS

- Microbe models (bacterium and/or virus)
- Spray bottle filled with water
- APH Quick-Draw Paper
- Handwashing video

DIRECTIONS

1. Teachers explain that microbes are very tiny living things that can cause disease. There are different kinds of microbes, such as bacteria and viruses, that can be spread from person to person via body fluids, such as mucus from a sneeze. If disease-causing microbes, also known as germs, come in contact with body openings, such as the eyes, ears, nose, mouth, cuts, sores, or any injury to the skin, illness is possible.
2. Students fill clean plastic spray bottles with water. Students spray the water to feel the effect of the moisture spreading in all directions. Students spray the water onto a piece of APH Quick-Draw Paper and then use their hands to feel the swelled paper where the water was sprayed over it.
3. Teachers and students discuss how germs can be spread from person to person. Teachers evaluate examples provided by students.
4. The teacher leads a discussion with students about ways to reduce the risk of spreading germs by being responsible (e.g., wearing a mask, covering your mouth and using facial tissue when coughing and sneezing, washing hands, and using hand sanitizer, etc.). Emphasize the importance of hand hygiene after use of public handrails, mass transit, and so forth.
5. Students cover the spray nozzle with facial tissue to demonstrate how spreading germs can be prevented when the mouth or nose is covered.
6. Teachers and students practice coughing and sneezing into elbows and/or sleeves.
7. Students watch one of the following handwashing videos.
    - "WHO: How to handwash? With soap and water" from the World Health Organization (www.youtube.com/watch?v=3PmVJQUCm4E)

- "Wash Your Hands" from CDC-TV (www.cdc.gov/cdctv/healthyliving/hygiene/wash-your-hands.html)

This activity is modified from Healthy Kids: Keeping Safe, Disease Prevention for Elementary Students, Curriculum – Grades K-5, which was published by the Oregon Department of Education. This material may be reproduced for educational purposes without permission of the Oregon Department of Education.

Activity: Effectiveness of Face Masks to Prevent Virus Transmission

Using a spray bottle filled with a "germ solution" (e.g., diluted yogurt or soil-water mixture), germs are captured on gelatin growth plates. The goal of this experiment is to determine how many macroscopic and microscopic droplets containing germs can cross a 1-layer and 2-layer fabric barrier.

Time Needed: 48-72 hours

MATERIALS

- 1 spray bottle
- 1 oz. soil, yogurt, or other cultured food, to make a germ-simulating solution
- Cereal box with two cut-out windows from the Exploring Airborne Transmission of COVID-19 activity
- 6 shallow plastic or metal containers (well-cleaned jar covers, tuna fish cans, yogurt container lids, etc.) at least 2 inches in diameter, or cupcake liners
- 1 tsp sugar
- 1 cube beef or chicken bouillon
- 2 packets plain gelatin, ¼ oz each
- 1 cup water
- 12 oz glass container and microwave oven, or pot with lid to use on stovetop
- Clear plastic zipper bags
- Three pieces of fabric approximately 5 inches square (e.g., old cotton shirt, scrap cloth, or other textile pieces)
- Intact cereal box or same size plastic storage container

- Tape
- Clean face mask

DIRECTIONS

PART I. The day before the activity, prepare the gelatin germ-growth plates.

1. Mix 1 cup of water, 1 tsp sugar, and 1 bouillon cube in a microwaveable measuring container and heat in the microwave oven for 2 minutes.
2. Stir well when done, and then heat for 2 more minutes. Leave the mixture inside the microwave to cool for about 5 minutes.
3. Alternatively, over medium-low heat, bring the water, sugar, and bouillon cube to a low boil while stirring; boil for at least 2 minutes. Cover with a tight-fitting lid and turn off the heat. Allow the mixture to cool for several minutes.
4. Put on your face mask and re-wash your hands to avoid contaminating your growth plates!
5. Slowly add two packets of gelatin powder to the cooled mixture while stirring.
6. Carefully pour the mixture into shallow round containers or cupcake liners about ½ inch deep. You should get at least six growth plates. Immediately place poured gelatin plates in a covered container or plastic bag and leave unsealed to allow moisture to escape. If you are using a plastic zipper bag, do not allow the bag to touch the top of the gelatin plates.
7. Place in a cool location to solidify overnight (fridge or cool oven). Plates must be cool prior to testing. DO NOT touch the prepared gelatin with your fingers because this will contaminate it. Prepare at least four gelatin growth plates for Part IV, and two extra plates for each additional type of cloth you want to test. Store in a sealed plastic bag until use to prevent the surface from drying.

Photos of gelatin germ-growth plate preparation. Left photo: items needed to make the growth mixture including water, sugar, gelatin, and bouillon; right photo: prepared growth mixture being poured into cupcake liners (NOTE: other containers can be used as described above).

PART II. Prepare the germ solution.

1. Add approximately 1 oz (about 2 tablespoons) of yogurt, kefir, or soil to about ½ cup of warm water. Gently mix until well combined.
2. Put this solution into a clean spray bottle labeled "GERMS." This solution now contains harmless germs to serve as living indicators that show how a face mask prevents microscopic droplets from spreading after a sneeze or cough.

PART III. Prepare the test boxes.

1. Use the cereal box with windows from the Exploring Airborne Transmission of COVID-19 activity but remove the cloth from the box and set it aside.
2. Prepare a germ-growing container in which you will place the gelatin germ-growth plates after they are sprayed. Use either an intact cereal box or a clean plastic storage container covered with a large plastic zipper bag.

PART IV. The Experiment: Comparing the effectiveness of 1 layer vs 2 layers of cloth

1. While conducting the experiment, wear a face mask so you do not accidentally contaminate the plates. DO NOT touch the prepared gelatin in the growth plates with your fingers—this will contaminate it!
2. Prepare four gelatin growth plates to test the effectiveness of cloth face masks. Label the plates #0 (no cover), #1 (1 layer), #2 (2 layers), and #3 (the face mask you have been wearing). You will test two layers of cloth first.
3. Cover one window of the cereal box from the Exploring Airborne Transmission of COVID-19 activity with two clean layers of cloth, using tape to keep them in place.
4. Turn the box flat so that the cloth-covered window faces upward. Place plate #2 in the box, under the covered window.
5. From about 5 inches away from the cloth, at about a 45-degree angle, spray TWICE into the window. Wait 30 seconds for microdroplets to land, and then carefully take the plate out of the test box and place it into the germ-growing container—be sure not to touch the gelatin!
6. Remove the cloth pieces from the box. Wipe the test box with tissue and dispose of the tissue but save the box for the rest of the experiment. Use a clean fabric piece for the next step of the experiment.
7. Repeat steps 2–6 using:
   - 1 layer of cloth (plate #1)
   - Your own face mask (plate #3)
   - No cover (plate #0)
8. Close the germ-growing container and leave it in a warm place where it can stay undisturbed but observed for a few days (on top of the refrigerator works well).
9. Dispose of the box, used cloth, and tissues carefully. Clean the working area and wash your hands thoroughly!
10. Check the gelatin plates after 24-48 hours. Remember to wear a clean face mask and wash your hands before checking the plates. Count the number of spots (colony forming units) that have formed on each plate. Do NOT touch the surface of the plates!

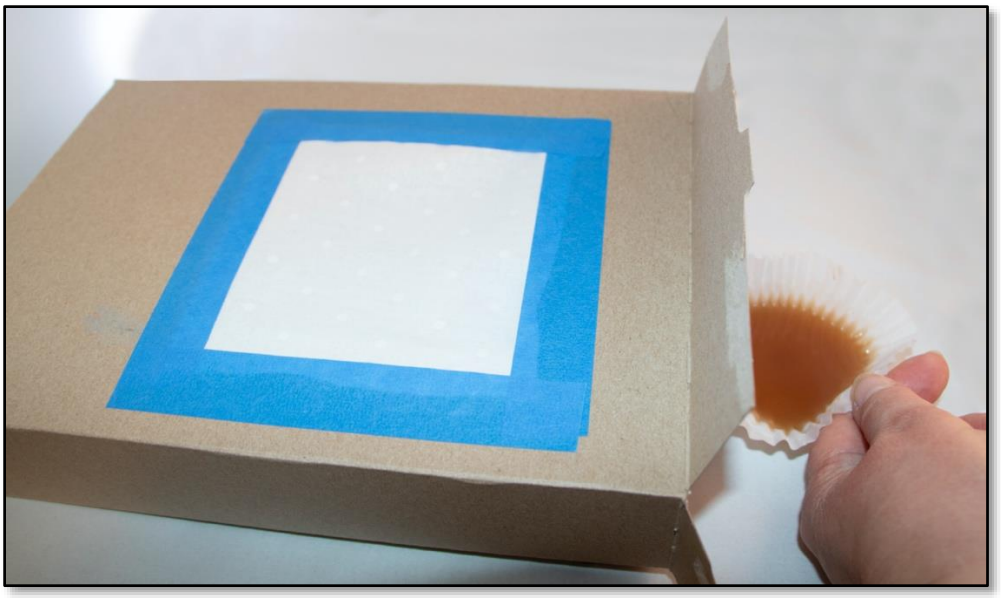


Photo shows germ-growth plate being placed inside the experiment box, under the fabric.

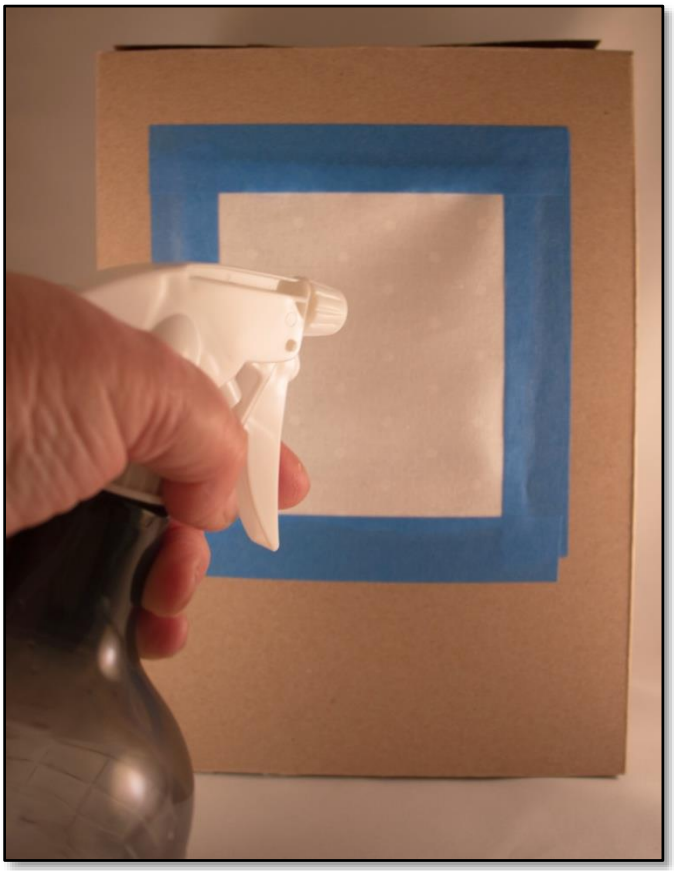


Photo shows solution being sprayed through the fabric and onto the plate.

Photo shows the germ-growth plates being placed in a container covered by a plastic zipper bag for incubation.

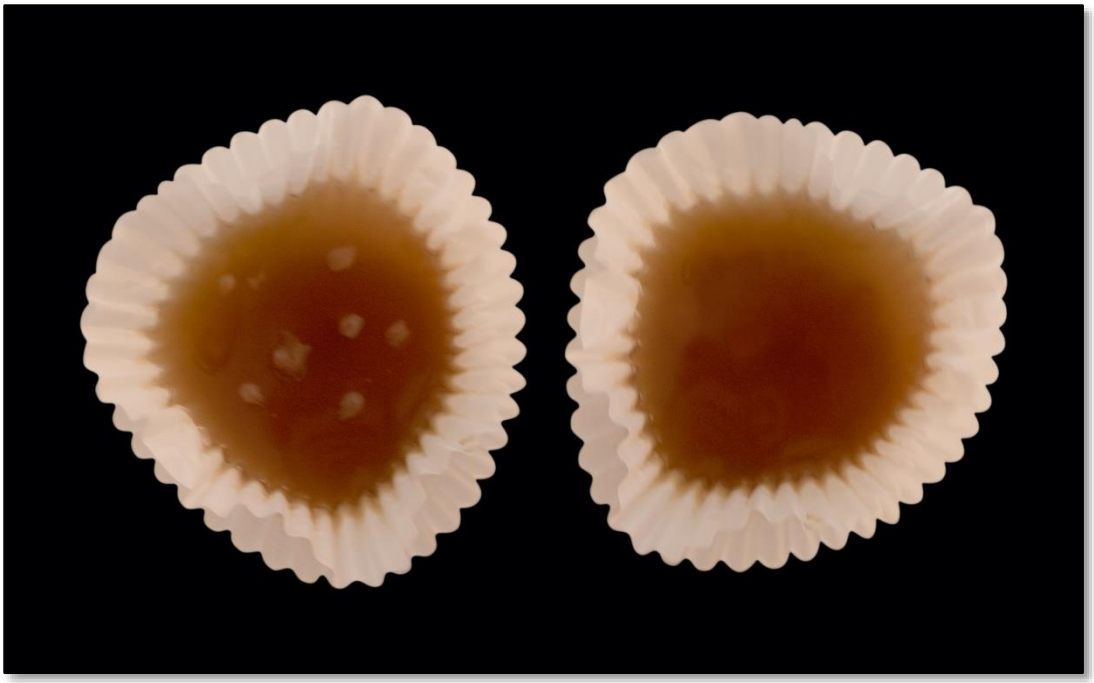


Photo shows growth plates after 24-48 hours. Colonies (small white patches) have grown on the surface of the left plate, representing single droplets that reached the growth plate surface. Students can count how many droplets reached the germ-growth plate surfaces after travelling through a fabric cover or without a barrier. No colonies have grown on the plate on the right.

PART V. Finish

1. After 24 hours, ask the students to observe the growth plates and describe what they see. Consider encouraging students to use self-determination skills with the Be My Eyes® or AIRA® app services to describe the surfaces of the germ-growth plates. Another way to complete this observation is to take a photo of each dish, print the photo onto capsule paper, and run the paper through a PIAF® machine for an instant tactile graphic. A peer or a teacher could also describe the image to the student. This first observation comprises the baseline data.
2. Observe the growth plates again in another 24 hours (total of 48 hours). Make observations using the same method chosen for step 1.
3. Record the observations: How many colonies appeared on each growth plate? Ask students to calculate the area of each germ-growth plate.
4. Students answer the following questions:
   - What did you observe?
   - Was one layer of cloth effective in preventing germ transfer?
   - Were two layers of cloth equally or more effective than one layer?
   - Can one or two layers of cloth contain all the germs produced by simulated sneezing?
   - Was the face mask better than no cover at preventing germ transfer?

Results: One layer of cloth should help contain germs, but it is not the best. Two layers of cloth are even better! Even with two layers of cloth, not every single droplet is trapped in the face mask. It is therefore very important to maintain distance, wash your hands, and practice good hygiene. Since germs in microdroplets are trapped in your cloth face mask, it is important to wash it regularly.

Sharing Knowledge With Others

Encourage students to share the knowledge they learned in these activities with their peers and others. Students can brainstorm ways in which to communicate the importance of wearing masks, social distancing, and handwashing. Examples include making videos, posters, and presentations,

as well as other student-generated ideas. The more people who understand COVID-19 transmission and preventative measures, the better.

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Glossary

Aerosol: a substance that can travel through the air with no liquid. A tiny portion of a human sneeze becomes an aerosol.

Colony forming unit: an estimate of the number of viable (reproducing) bacteria in a sample; a cluster of reproducing bacteria that is large enough to see with the unaided eye.

Droplet: a substance carried in a tiny volume of liquid in which surface tension defines the shape. Most of a human sneeze is composed of droplets.

Epidemic: widespread occurrence of an infectious disease in a community.

Face mask or face cover: any piece of cloth placed over the mouth and nose to prevent spread of respiratory infections.

Medical or surgical mask: personal protective equipment that meets specific manufacturing standards; reduces the spread of infections among healthcare workers and patients.

Pandemic: infectious disease that is prevalent across many communities.

Virus: a particle as small as 20 nanometers (a nanometer is 1×10^{-9} meter) that can enter and infect living cells. Viruses that cause disease typically infect specific organisms (hosts) and multiply using host cell resources.