

Masks Against COVID-19



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Word Bank

coronavirus

efficacy

pandemic

SARS-CoV-2

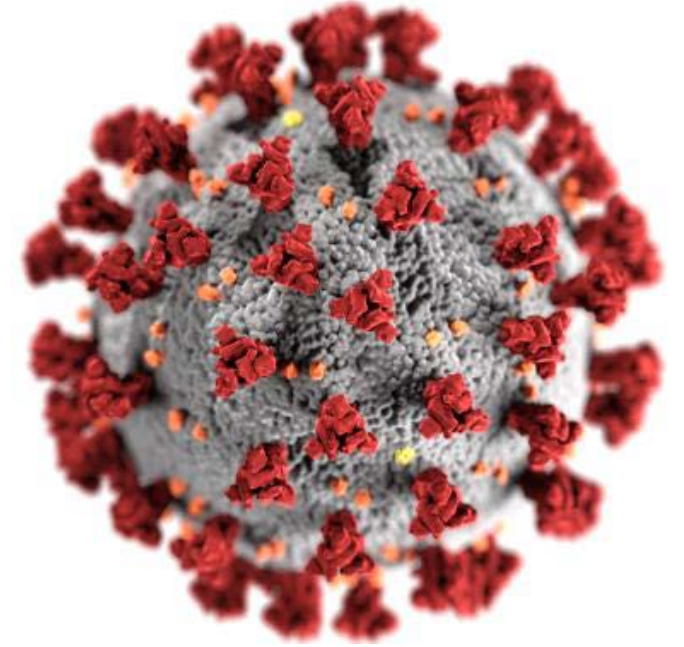
vaccine

variant

	how well something works; how effective something is
	the virus that causes COVID-19 disease
	a family of viruses characterized by a crown of spikes on the outside; includes respiratory diseases like MERS and SARS
	different forms of a virus that occur as a result of random mutations
	a disease outbreak that has spread over several countries or continents
	provides a trigger to help the immune system build immunity to a disease

Understanding COVID-19

- Coronaviruses are a type of virus with a crown of spike proteins sticking out
 - There are many types, including SARS, MERS, and viruses that cause colds
 - SARS-CoV-2 is the specific coronavirus that causes COVID-19
- COVID-19 causes respiratory symptoms but can also harm other parts of the body
- More than 4.5 million people have died from COVID-19 worldwide



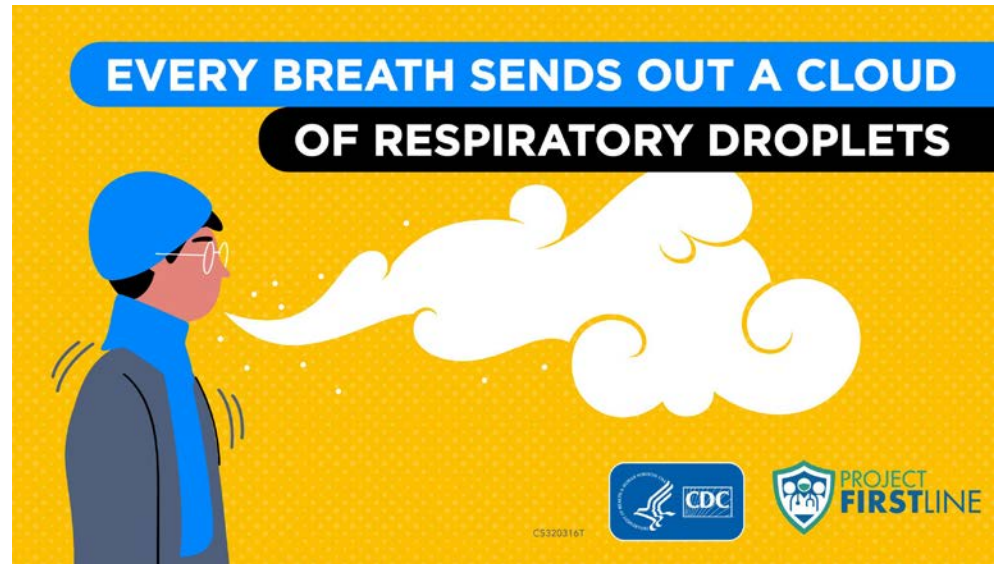


Think About It

1. How can wearing a mask help stop the spread of viruses?
2. Are some types of masks better than others? Explain your answer.
3. What are some steps you could take to protect yourself and your community from COVID-19?

COVID-19 and CDC

- COVID-19 spreads through respiratory droplets
- Masks block respiratory droplets produced while breathing, talking, coughing, and sneezing
- Many COVID-19 cases are asymptomatic; infected people may not know they are spreading the virus
- Staying at least 6 feet apart also helps slow spread



COVID-19 and CDC

- Cloth Masks
 - Must use tightly woven fabric
 - Nose wires improve fit
- Disposable Masks
 - Surgical masks
 - KN95 for individual use
 - N95 for healthcare professionals
 - Add cloth mask or mask fitter on top of disposable masks to improve fit

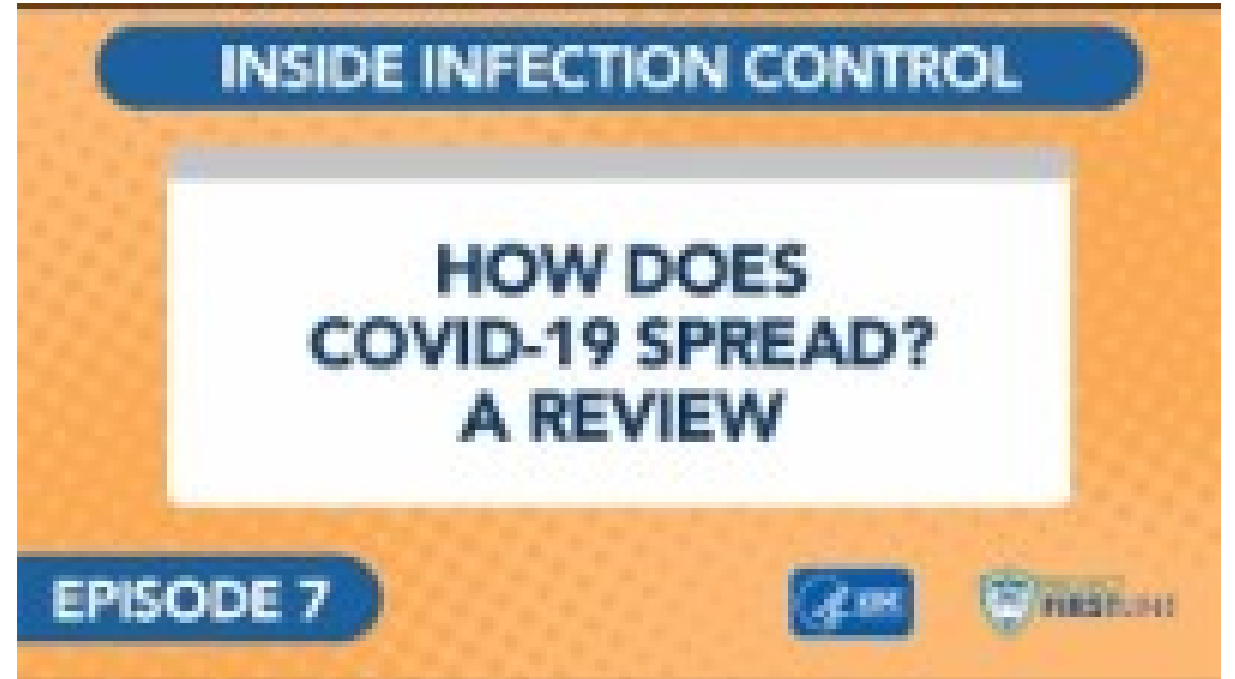




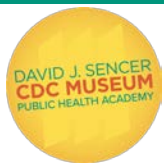
Think About It

1. What is the primary way that the SARS-CoV-2 virus spreads from person to person?
2. If a person's mask drops below their nose, what happens to their respiratory droplets?
3. What are some reasons that people might have to choose masks instead of vaccination to protect them from COVID-19?

From the
Expert



<https://youtu.be/1LZZz1yMGvY>





Think About It

1. According to Dr. Carlson, what are other ways besides respiratory droplets that SARS-CoV-2 can be spread from person to person?
2. What are some problems you have encountered while wearing a face mask that you might want to fix in your design?
3. As new variants of COVID-19 emerge, the efficacy rates of vaccines may decrease. How will this affect communities? How might we respond to this change?

Call to Action!

1. Test face masks.
2. Design a better face mask.
3. Share your findings.

Why do you think participation is important?

Give it a
Try

Use the Engineering Design Process



Define

Define the problem



Research

Do background research



Requirements

Specify requirements



Brainstorm

Develop solutions



Build

Build a prototype



Test

Test and redesign

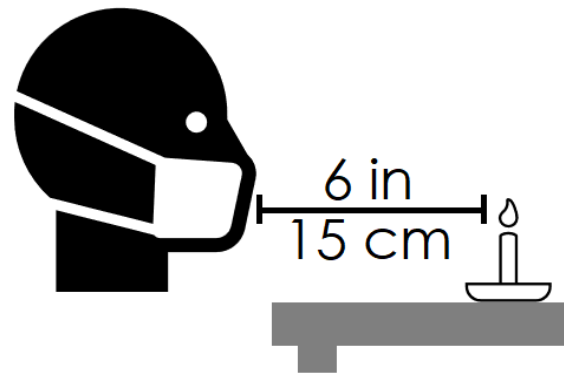


Share

Communicate results

1. Test Face Masks

- Get 6 masks made of different materials
- Light a candle 6 inches from edge of table
- While wearing each of the 6 masks:
 - Read a paragraph from a book
 - Sing a verse of a song
 - Try to blow out candle
- Record candle observations for each test



Give it a
Try

2. Design a Better Face Mask

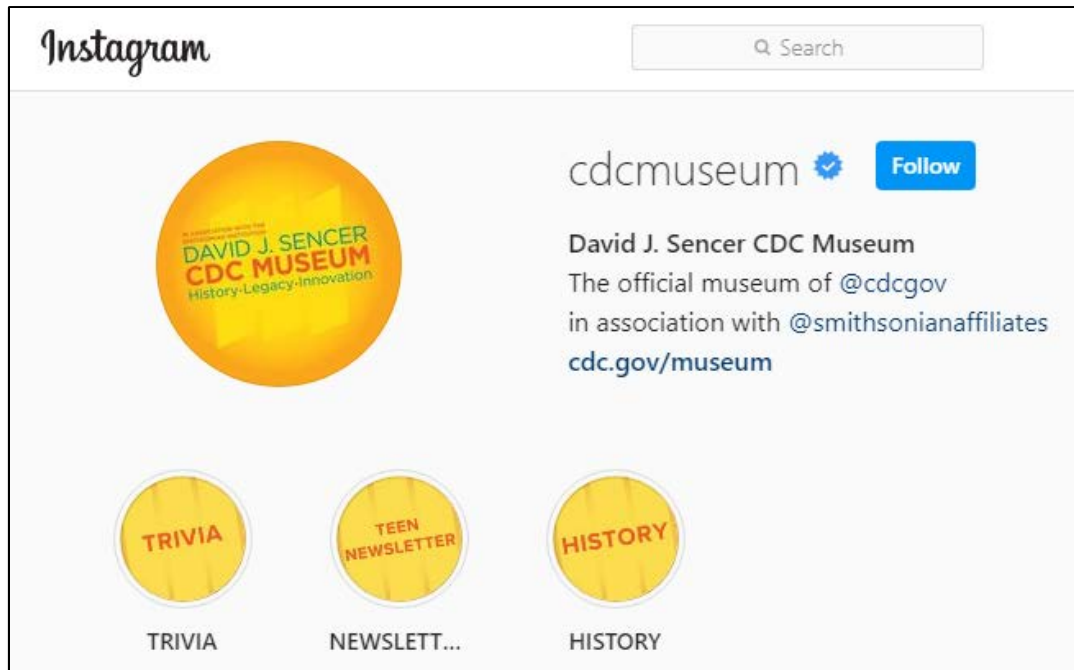
- Use the results of your experiment to design a mask that fits well, is comfortable, and is effective at stopping respiratory particles
- Test your newly designed mask



Give it a
Try

3. Share Your Findings

- Instagram @CDCmuseum



Give it a
Try

Questions?

