

## Home Explorations: Pandemic!



Would you like to do an exploration at home that could inform you about the Covid-19 pandemic? Follow the directions below to test materials that people are using to make protective masks.

### Protecting Yourself

Wear a mask or don't wear a mask? What have people said about this issue? What does a mask do and can it protect you from a microbe? In this exploration we can test various materials to determine their quality for filtering particles.

### Materials Required

- Vacuum cleaner with hose attachment
- Black sock or piece of black material
- Paper towel, coffee filter, and other materials
- Cornstarch, Talcum Powder, or Flour

### Procedure

1. Place some corn starch on a plate or dish on the floor. (The good thing about this exploration is that when you are done you can just clean up the mess with the vacuum!)
2. Put a black sock or other black material over the end of the vacuum hose.
3. Cover the black sock with the filter you want to test. This simulates breathing in air and particles.



4. Turn on the vacuum and suck in some corn starch or other powder. It should look like this when you are finished. Notice the corn starch on the paper towel pressed against the sock.

5. Now, remove the paper towel or other test filter and carefully examine the black sock.



6. Try a variety of filters with your system: 1 sheet of paper towels, 2 sheets, 3 sheets. Is there a difference in how much corn starch gets through? Make a data table to record your results.

### Questions

- What material kept out the most particles?
- Would it make a good filter to keep out a bacteria or a virus? (Remember these particles are much smaller than the powders we used.)
- How would you test a mask to see if it were truly effective?

### Discussion

There are various approaches for making an effective mask. You might read this article for helpful insights:

<https://sites.google.com/a/eou.edu/stem-stories/mask-article-2>

### Going Further

Would you like to do other explorations related to the pandemic or other Home Explorations? Check out our website at:

[go-stem.org/home-explorations](http://go-stem.org/home-explorations)

This resource brought to the community by:



**What is GO-STEM?** GO STEM is a regional partnership that values STEM learning, prepares youth for successful STEM careers, and builds pathways and pipelines to meet workforce needs.

**What is STEM learning?** STEM stands for Science, Technology, Engineering, and Mathematics. STEM Education is an approach to teaching and lifelong learning that emphasizes the natural interconnectedness of the four separate STEM disciplines. The common element of problem solving is emphasized across all STEM disciplines allowing students to discover, explore, and apply critical thinking skills as they learn.

**What does GO-STEM do?** The staff and partners of the Hub provide and support for professional development and coaching for pre-K-12 teachers and those delivering informal education in the community, opportunities for teachers to work in STEM industries to gain knowledge of STEM careers, regional youth programming that encourages students to take STEM leadership roles, and community engagement to communicate the place and potential STEM has in shaping the future.

**Want to know more about how you can help spread the word about STEM in Eastern Oregon?** Browse our website at [go-stem.org](http://go-stem.org) You can also contact us through email at: [go-stem@eou.edu](mailto:go-stem@eou.edu)



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