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from: engineeringadventures@mos.org
to: You
subject: Dangerous Dust



3:08 PM

Hi engineers!

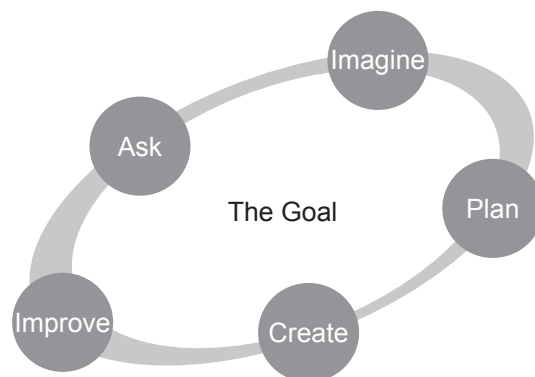
I talked more with our friend Maru, a materials engineer at NASA’s testing site in Antarctica. She let me know that engineers also have to think about dust-resistant materials when designing spacesuits. Maru said a dust-resistant material is any material that prevents dust from sticking to it.

It may not seem like much of a hazard to find dust in living and working spaces here on Earth, but dust from the surface of other planets and moons can be a big problem for astronauts. Dust can get into things in the spacecraft that need to stay clean and cause damage to the electronics and equipment inside. On top of that, the dust can be dangerous for the astronauts to breathe. Engineers need to choose materials that dust does NOT stick to so astronauts bring as little of it as possible into their spacecraft.

We sent you some materials so you can test how dust resistant they are. Try attaching one layer of these materials to both sides of your glove, test it out, and see if you think it would be a good choice for making a dust-resistant model space glove!

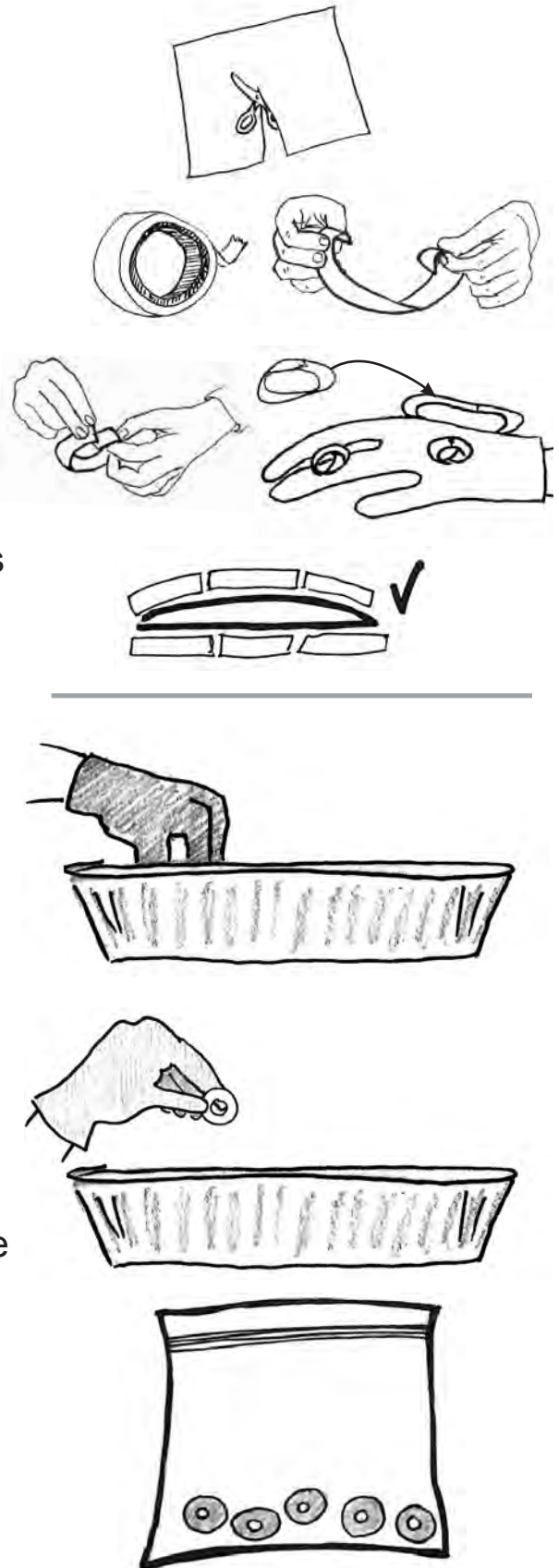
Talk to you soon,

Jacob





1. Cut your material.
2. Use loops of masking tape to attach **1 layer** of the material to **both sides of the glove**.
3. Open the plastic bag.
4. Use your glove to dig through the dust and find the 5 metal washers.
5. Use your glove to place the 5 metal washers into the plastic bag.
6. Use a paper towel to wipe off any extra dust from your glove.
7. Look at the palm side of your glove with the hand lens and black light to find the places that glow. How many areas have glowing dust?
8. Record your results in your Engineering Journal.
9. Reset the station for the next group: bury the 5 metal washers back in the sand and mix the sand using the craft stick.

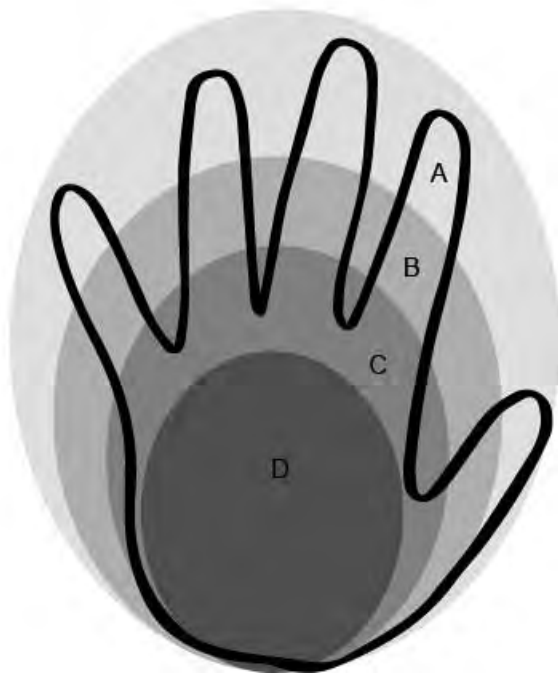





Directions:

Using the hand diagram below, find out how many areas of your glove’s **material** has glowing dust. (Example: There is glow powder in areas A & C, or a total of 2 areas, so it is “good” at protecting against dangerous dust.)

Is your material good at protecting against dust?



Not Good	Good	Great
4+ areas	2–3 areas	0–1 area

 **Did You Know?**
Dust on Earth is a mixture of sand, dead skin cells, tiny hairs, dander, pollen, dust mites, and minerals from space.

Test Results		
Test Material	Number of Areas	Is your material good at protecting against dust?

Reflect

Which materials were great at protecting against dust?

Why do you think these materials worked well?

