

YOUR DESERTED ISLAND MISSION:

Goal #1:

Make a hat to shade your skin from the sun, and to help keep you cooler while you work.

The last time you were in the S.T.E.A.M. Lab, we learned that the skin is the largest organ in the human body and that clothes were invented to wick away sweat to help us keep dry. We learned that this is what helps us to fight off germs-especially- -

FUNGI, Bacteria, and Viruses!

Remember-- you must have your hands free to work.

It's very important for humans to keep the 4 types of germs from invading our bodies and taking over the world!!!!

You'll be busy on the beach in the hot sun collecting sand and rocks to help you to design a water filtration system to keep germs--

—especially Protozoa, from entering your body!

Goal #2:

Make a prototype of an umbrella to provide a larger area of shade on the beach that won't blow away while you work.

In part 2 of this mission, we learned that engineers and inventors often look at nature to help them design better products. The study of materials and their properties plays a large part in the success or failure of your product.

While you were on the beach working in the sun, you discovered that you would need an umbrella to help shade a larger work area! Since the ocean breezes are pretty powerful, your umbrella must withstand a heavy breeze!

HOW CAN I DIG DEEPER?

Below are ideas for extending this mission beyond the activity & exploration which you just completed. You can find links to these on the S.T.E.A.M. Lab Website -> www.jedijill.com

Hat Extras:

- [End of Mystery Assessment](#) and [Answer Key](#)
- **Readings:** [Three readings](#) with comprehension questions.
- **Video:** Catch students' attention with a [song about materials](#).
- **Online Simulations:** Reinforce & expand on knowledge gained through hands-on experimentation
- **Activity:** If you liked making a hat, try [inventing a backscratcher](#).

Exploring the properties of materials with simulations doesn't substitute for hands-on experiments, but it can help reinforce & expand students' knowledge.

- [Tinkerball](#): Students experiment with different materials to get a bouncing ball to land in a cup.
- [Grouping materials](#): Students sort objects into the materials that they are made of.
- [Sorting materials](#): Students test objects and then sort them into categories.
- [Characteristics of materials](#): Students test whether materials are flexible, waterproof, transparent, and strong.

Umbrella Extras:

- [Paper Bag Kite](#): In this activity, students create simple paper bag kites, then experiment to find out how different features affect how the kites fly.
- [Fly a Leaf](#): In this activity, students experiment to find out which leaf shapes catch the most wind. Great for a windy day!