Master Activity List 2018

Biomedical Engineering

Plasma Play Pit: Do you know what's in your blood? Come stick your hands into a tub full of things that represent the blood that runs through your body and learn more about what's inside!

Prosthetic Party: Build a prosthetic leg using various ordinary materials, and then test your design to see how it would perform.

Protect that Pill!: Go behind the scenes of the chemical world as you develop and test your own unique pill coating to withstand the perils of the digestive system.

Protein Production: Come build a protein chain and learn about what they do in the body!

Sounds All Around: Try your hand at medical devices and see if you can design the best hearing aid!

Chemical Engineering

Color that Filter!: Come see particle separation in person! You will draw a picture and watch water spread across it, causing the colored particles to spread based on their size.

Cornstarch Monster: Create a cornstarch monster using a non-Newtonian fluid and sound waves. The stress of the sound waves will make your cornstarch monster come alive as the liquid turns to a solid!

Disappearing Glass: Make some glass ~disappear~ and learn about how rates of refraction change wih different materials!

Steady State: Use a device that chemical engineering students use in their labs in order to understand steady state systems. See the difference between continuous, batch, and semi-batch processes and the effect they have on production!

Computer Engineering

Inside A Computer: Take a peak inside a computer and see all of the components and what they do!

It's Lit: Come wire a circuit with an LED and resistor on a breadboard! Program an Arduino to turn the LED on and off!

Electrical Engineering

Riding the Waves: Come pick your favorite song and see how sounds waves look, and analyze all the properties of waves!

Basic Logic Control: Explore the basic logic control of a circuit! Sketch your design and then see the circuits in action!

Wigglebot Robot: Ready to design a robot? The Wigglebot Robot is a motorized contraption with maker legs that create interesting designs on paper – while it wiggles!

Build a Magic Motor: Using everyday objects, we can explore how power from a small battery can create a magnetic field to keep a coil of wire spinning!

Industrial Engineering

Non-Stop Sub Shop: Build "sandwiches" and see just how important directions, communication, and process are! See how to improve the process and make the best "sandwich!"

Save the Morning: Come see how enviornmentally-friendly your morning routine is! Learn how to make your routine more efficient and see how you can save resources!

Grocery Shop Flop: Combining ergonomics and maximizing efficiency, learn how to limit stress on your body and minimize shopping time at the grocery shop!

Toyota Lab Make & Skate: Explore the assembly line process by building a skateboard! Find ways to improve the process by making assembly easier and increasing efficiency!

Mechanical Engineering

Build a Tower: Work together, with a limited number of spaghetti and marshmallows, to build the tallest tower possible in under four minutes!

Communication Challenge: Can you properly construct the Rube Goldberg machine while someone else provides you instructions? Put your technical communication skills to the test!

Float-a-Boat: Design and construct a floating device and see how much weight can be supported before the “boat” sinks. Watch the leaderboard to see if your team ends up on top!

Judo Bots: Carefully select a bot after looking through multiple designs. Use it to duel against another team's bot. Did you make a wise selection?

Liquid Sand: Sand? Water? Come watch sand take on the properties of water, as it is aerated with compressed air!

Microelectronic Engineering

Sunprint Photolithography: Come draw a design on transparency paper, and watch it develop onto photo paper under UV light!