Minnesota Mission Log



Newsletter: Fall 2017

Great American Solar Eclipse 2017 Viewing Party

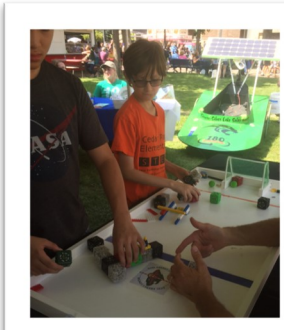
August 21, 2017 — The Challenger Learning Center of Minnesota partnered with the Dakota County Galaxie Library to host a Solar Eclipse Viewing Party in Apple Valley, Minnesota on August 21, 2017. It was an amazing turnout with over 300 people attending the event. Everyone graciously shared the eclipse glasses donated to us by NASA's Jet Propulsion Laboratory. We had some great views of the eclipse before the clouds rolled in just after the peak!

Before the eclipse, we had a short presentation from Dr. Peter Mendygral from the University of Minnesota and Cray Inc. Dr. Mendygral has a PhD in Astrophysics and shared with us more about what happens during a solar eclipse and why it is so rare to see a TOTAL solar eclipse! A big thank you to NASA's Jet Propulsion Laboratory, the Dakota County Galaxie Library and Dr. Mendygral for making our Solar Eclipse Viewing Party a great success! We are already looking forward to the next US solar eclipse in 2024! Mark your calendars now!

Dakota County Library
Come to know

MN State Fair STEM Day 2017

The Challenger Learning Center of Minnesota was honored to be asked back for the 8th annual Minnesota State Fair STEM Day on August 24, 2017. This year we brought our Cubelet Robotics which were a huge hit with kids and adults alike! A big thank you to our board member, and six-time NASA astronaut, Commander Curt Brown for taking time to hang out at our booth, sign autographs and engage the kids with our robotics.



If you are not familiar with this event, it is always the first day of the Minnesota State Fair. It's a one day event that features over 30 STEM organizations with hands-on activities and interactive demonstrations including robots, rocketry, computer coding and more designed for children of all ages.

Challenger Learning Center of Minnesota

P.O. Box 22435
Eagan, MN 55122

Phone: 612-743-8611

info@challengermn.org
www.challengermn.org

challengermn
@challenger_mn

www.challenger.org
(National)

Solar Eclipse 2017	1
MN State Fair STEM Day 2017	1
STEM Inspired Holiday Gift Guide	2-3
In The News	4
Family Science Experiment: Dancing Corn!	4

STEM Inspired Holiday Gift Guide

Top STEM Gifts for 2017… (in our opinion!)

We at the Challenger Learning Center of Minnesota have spent many hours watching kids play with these incredible toys and can highly recommend any of them for your science-loving boy or girl. Prices start at $13 and are listed in no particular order as they all rank pretty high on our list!

- **PowerUp® 3.0 Paper Airplane Drone - Smartphone Controlled** see it here
  - Bring homemade paper airplanes to life! Build one of the recommended paper airplanes (instructions included) and then attach the smart module to the airplane. Download the free app on your phone and start flying! Tilt your phone left or right to steer the airplane. The range is about 180 feet with a battery life of about 10 minutes of flying time. Selling price is $49.99.

- **LEGO Women of NASA** see it here
  - This incredible LEGO set makes a great gift for little girls with big dreams—or any NASA enthusiasts! These flew off the shelves when they went on sale on November 1st, but will hopefully be back in stock before the holidays. The selling price is $24.99 but watch out for scammers trying to sell it for much more while they are temporarily out of stock. Currently still available at the LEGO Store at the Mall of America.

- **Pop Bottle Science** see it here
  - This super fun science kit has 79 easy hands-on science experiments and projects to keep a child a busy all winter long! We love that each experiment is fully explained to help the child understand the scientific principles involved. Kids can create exploding volcanos or create tornados right inside the bottle. They can also investigate buoyancy, inertia and weather, among many other fun science phenomenon's. Selling price is under $13.00!

- **Modular Robotics Cubelets** see it here
  - If you stopped by our booth at the AirExpo or the State Fair STEM Day this summer, you probably played with our amazing Cubelet robotics. Many parents asked about these fun magnetic robotics, so we thought we would add them to our Holiday Gift Guide. These snap-together robot blocks use magnetic forces to create unique robots that have different behaviors based on how they were put together. There is no wrong answer! There is even a Bluetooth cubelet for more advanced learners where they can program it via Blockly visual programming—attach the Bluetooth cube to your robot and watch it perform as your programmed it! These are not cheap, but they grow with your learner. Individual cubes start at $26.95, or get a 12 cube starter pack for $299.95,

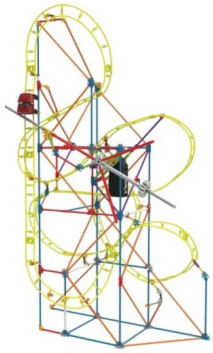
STEM Inspired Holiday Gift Guide

Top STEM Gifts for 2017 Continued...

- **LEGO Chain Reactions Craft Kit by Klutz** see it here
  - LEGO worked with 11 year old students to help design this amazing kit—so you know it's going to be good! There are instructions for 10 chain reaction machines—build each one separately or put them all together for one huge chain reaction! If your kids have learned about Rube Goldberg machines in school, they can now build one of their own. We've seen this kit create hours of fun for kids and we highly recommend it. LEGO elements included, but you still need additional LEGO pieces. Selling price is under $16.00.

- **Dance Code featuring Disney Princess Belle by Hasbro** see it here
  - This is our only holiday gift recommendation that we have not personally tried, but you can be sure it's on our wish list! The reviews so far have been outstanding. Kids can create choreography for the Belle doll through coding and bring the doll to life! The doll is connected via Bluetooth to a smart device that has the Dance Code app (free app) on it. Through very colorful, visual drag and drop programming, kids can create dance steps for Belle to perform. Aside from dancing, the doll can speak over 100 phrases or perform a number of pre-programmed dances. Selling price is $99.99 on Amazon.

- **K'Nex Building Sets**
  - **100 Model Building Set** - K'Nex offers a lot of great building sets, but this is 100 building sets in one! The snap-fit pieces are easy to put together and your child can make unique creations that actually move using wheels, rotors, wings and more. Age recommendation is 7 to 12 years old. This set sells for around $49.99. see it here



  - **Roller Coasters** - We especially enjoy K'Nex roller coaster sets with motorized tracks. There are many to choose from, starting around $24.99. Multiple sets can be put together to form larger roller coasters as well. The roller coaster sets are usually good for ages 7 and up as well. Example: see it here

How Can You Help?

> Visit our website for more information and contact us to learn how you can get involved.

> Sign up for an individual or Family Membership, or consider a donation - information on the website: www.challengermn.org/membership.html

> Help us get the word out!

Challenger® LEARNING CENTER MINNESOTA

"Education is the most powerful weapon which you can use to change the world."

-Nelson Mandela

In The News

Cassini Ends Mission With Dive Into Saturn

After 20 years in space, and 13 years orbiting around Saturn, Cassini ends its incredible mission by purposely crashing into Saturn's atmosphere on September 15, 2017. We learned a lot about Saturn and it's moons from Cassini's historic mission. The photos that came back from Cassini over the years are stunning. You can take a look at some of them here.

Courtesy: NASA

In April 2017, Cassini was placed on an impact course that lasted for five months. Cassini passed between Saturn and it's rings with many daring dives over a series of 22 orbits. This was called the Grand Finale, and it brought unparalleled observations of the planet and its rings from closer than ever before.

SpaceX's Massive Falcon Heavy Rocket Aims for December 29th Inaugural Launch

Insider sources say that Falcon Heavy aims to launch on December 29th, with static test fires starting around December 15th. If successful, the two side booster rockets of the Falcon Heavy should return to land at Cape Canaveral, while the center rocket would land at sea on a drone ship. Falcon Heavy will become the most powerful operational launch vehicle currently available, and it will likely retain that title well into 2020, when NASA's Space Launch System is scheduled for its first launch.

The Falcon Heavy was initially thought to be the powerhouse vehicle to get humans to Mars. However, SpaceX recently announced that they are scraping the Falcon Heavy Mars missions to build "vastly bigger ships", a more powerful rocket called the BFR. The Falcon Heavy will stay in business for the foreseeable future as it already has customers lined up with waiting payloads, it just won't be taking humans to Mars.

Thanksgiving Family Science Experiment: Dancing Corn!

Looking for something fun to do with your family during Thanksgiving? This dancing corn experiment is a fun way to learn about density and chemical reactions.

You will need:

- Water
- Vinegar
- Corn kernels
- Baking soda
- Food coloring (optional)
- Large clear drinking glass or jar

Experiment:

- Place the glass on a cooking sheet to minimize the mess. Measure 1 cup of water and 1 cup of vinegar - pour both liquids into the glass.
- Add 1-2 drops of food coloring to water/vinegar mixture if desired.
- Add just enough corn kernels to cover the bottom of your glass with one layer of corn kernels (no more than 1/8 C of kernels).
- Add 1 tablespoon of baking soda into the glass. Be ready… this part can get a little messy!
- Watch the corn dance! When your corn is done dancing, just add more baking soda and they will start dancing again!

What's Really Happening?

First: When the baking soda combines with the vinegar, it creates a chemical reaction to form carbon dioxide gas. This gas creates a lot of tiny bubbles.

Second: Those tiny bubbles of carbon dioxide gas attach to the surface of the corn kernels. These bubbles greatly increase the volume of the kernel, but do not create any additional weight. The result is that the overall density of the kernel is lowered. Because the density of the surrounding liquid is greater than the density of the corn kernel, it can now float upward since it's lighter! Once the carbon dioxide bubbles pop, the kernel will settle back down to the bottom until more bubbles attach to it.