Minnesota Mission Log



Newsletter: Spring/Summer 2018

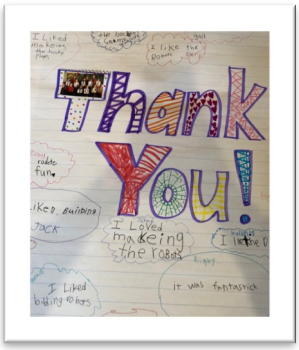
Community Outreach: Check out what we've been up to!

After School Robotics Workshops

Because of your generosity and support we are able to carry out our mission of education and inspiration while we are in the fundraising stages of bringing a Challenger Learning Center to Minnesota. Over the last year and a half, we have gone out to many after school programs with our robotics, focusing mainly on schools that have limited access to additional STEM resources. With our Cubelets and Spheros, we introduce students to robots and how they are used in today's environment, including how robots are currently roaming the surface of Mars and surveying the solar system. We also talk about careers in robotics including engineering and software programming. We then give the students engineering challenges and have them build their own robots to complete the challenges. To sponsor a future robotics workshop for a school or scout troop please send us an email at info@challengermn.org.

Students building robots with Cubelets.

Students programming a Sphero robot.



Girls in STEM Talks

In other community outreach, our Executive Director, Kasey Herzberg, has a passion for sharing her story to inspire young girls to follow their dreams. Kasey is an Aerospace Engineer has been asked to speak at many Girls in STEM talks over the past couple of years where she focuses on encouraging girls to continue to explore their passion for STEM subjects. She talks about STEM careers and notable women in those fields and what different education and career paths may look like. One of her favorite quotes is from the book "Grit to Great" where she reminds young women that "98% of the world's most successful people do not possess the "IT" factor (genius IQ or amazing talent) – they possess the "GRIT" factor (Guts, Resilience, Initiative, Tenacity)". Keep reaching for the stars!

Girls in STEM luncheon for 8th graders.

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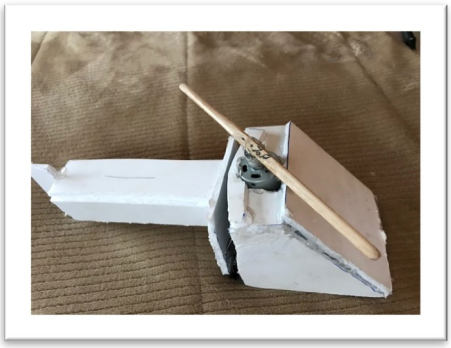
Community Outreach: Check out what we're up to!	1
STEM Spotlight: Young Inventors Corner	2
STEM on a Stick! STEM Day at MN State Fair 8/23	2
Family Science Experiment: Giant Bubbles!	3
In the News: Massive Dust Storm Threatens Mars Rovers	4
In the News: Story Time From Space	4

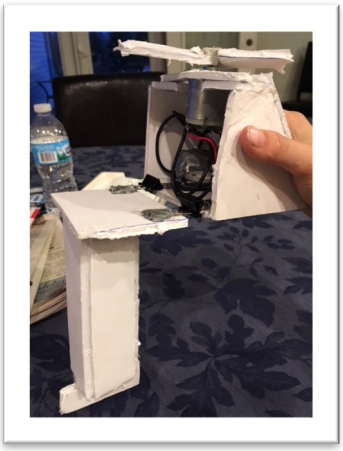
STEM Spotlight:
Young Inventors Corner

Homemade Helicopter

We love when we get mail from future innovators! Check out this cool helicopter that one of our followers made from parts from an old sewing machine, foam board and a hot glue gun!



"I started with a 9 volt motor my grandpa and I fished out of an old sewing machine. I got thinking and then decided what to do with it , I would construct a helicopter. Why did I decide to build a helicopter? Because my family has many pilots including my father who currently flies a helicopter. My mom had to go to Target so I asked her to grab a foam board. Once we got home I got a large table, a hot glue gun and a scissors and I got to work.



First, I made three identical squares and cut the corners off two to make a slant. I glued them together next made foam window and glued that on to the slant after that I made a top but drilled a hole big enough to put the motor in. Now I'm finished with the cockpit I just need to add the back but I need hinges and a tail to add to the back. For the tail I made a rectangular prism and added a styrofoam tail rotor. I put the hinges on so I had easy access to the motor and battery.

From the motor I ran the positive wire through the switch and then connected it to the battery. As for the negative it just went to the battery. If I were to redo this experiment I would add skies to a larger cockpit and have a working tail rotor." - Triston (age 11)

Great job Triston! Do you have a cool invention or project you'd like to share? Send it to us at **info@challengermn.org** and you could be featured in an upcoming newsletter.

Upcoming Events:

MN State Fair STEM Day 2018—August 23, 2018

We have been invited back for the 9th annual STEM Day at the MN State Fair on Thursday, August 23, 2018! Come build robots with our Cubelets robotics and check out over 30 other booths with hands-on STEM activities as well as live stage shows all day long. We will be located in Dan Patch Park. STEM Day runs from 8 am to 5 pm and there is no cost for this event beyond your admission ticket.

Family Science Experiment

Giant Bubbles!

Blowing bubbles in the summer is always fun, but what if you could make GIANT bubbles!? Using this easy homemade recipe below you can wow all your family and friends with giant bubbles this summer.

You will need:

- 6 cups water (tap water if fine, but use distilled water if you have it on hand)
- 1/2 cup blue Dawn dish soap
- 1/2 cup corn starch
- 1 tbsp baking powder
- 1 tbsp Glycerin (found at Walmart, Walgreens, etc.)
- Straws and yarn (for the wand)

Make the wand:

- You can either buy a giant wand from the store or make your own.
- To make your own, take two straws and a length of yarn that is about 6 to 8 times longer than the length of one straw. Thread the yarn through the straws and tie a knot - and your wand is ready! (See picture above)

Experiment (Bubble Solution):

- Dissolve corn starch in the water mixing it very well.
- Stir in the dish soap, baking powder and glycerin. Be very careful not to create a lot of bubbles (froth).
- Allow your mixture to sit for at least an hour. Stir occasionally to get the corn starch off the bottom.
- The corn starch may not all dissolve completely (some may settle to the bottom) but that's ok - it will not affect the quality of the bubbles.
- Bubbles may need a little help getting air into them, so after dipping your wand in the solution, hold your arms high in the air and walk backwards, forcing some air into the bubble so it breaks free from your wand.

Note: Weather makes a big difference in how well your bubbles will work. A cloudy day works best as sunny days can dehydrate your bubbles very fast, causing them to pop. Also, the more you play with the bubble solution the silkier it will become. Don't get discouraged if your first few pop!

The Science Behind Bubbles:

The outside and inside surfaces of a bubble consist of soap molecules. A thin layer of water lies between the two layers of soap molecules (think of it like a water sandwich with soap molecules for bread). They work together to hold air inside. A bubble gets its color from light waves reflecting between the bubbles outer and inner surfaces. The distance between the layers gets smaller as the water evaporates, making the colors change. Bubbles can also reflect what's around them - do you see your face reflected in a bubble?

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!

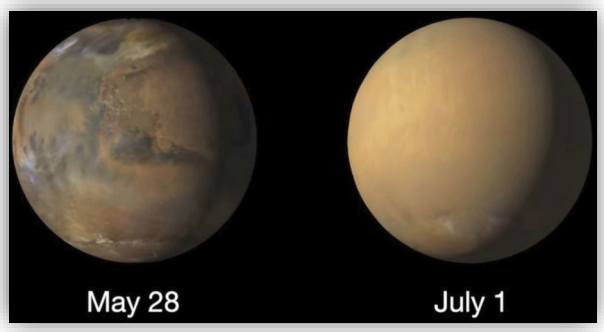
Challenger LEARNING CENTER MINNESOTA

"Learn from today, live for today, hope for tomorrow. The important thing is not to stop questioning."

-Albert Einstein

In The News

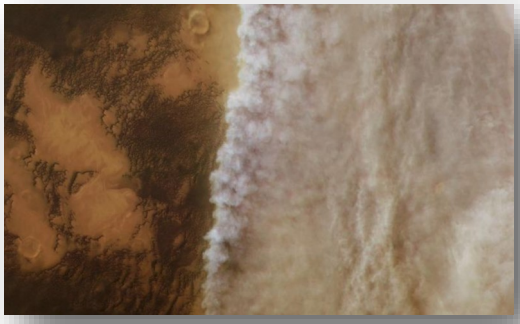
Massive Dust Storm on Mars Threatens Opportunity Rover



Credit: NASA

A massive dust storm is currently engulfing almost the entire Martian planet and NASA scientists say this is one of the largest weather events they've ever seen on Mars. The dust storm was first spotted by the Mars Reconnaissance Orbiter (MRO) on May 30th and by June 20th it had gone global. The storm is not estimated to clear until at least early September.

There are currently two rovers roaming the surface of Mars. The Opportunity rover arrived in 2004 and is solar-powered. The newer Curiosity rover arrived in 2012 and is nuclear-powered. The solar-powered Opportunity has been silent for weeks, unable to recharge its batteries because of all the light-blocking dust in the air. NASA scientists believe that the rover has put itself into a sort of hibernation, and they are cautiously optimistic that Opportunity will power up and call home when the dust clears. Because Curiosity is nuclear-powered, it is largely unbothered by the dust. It continues to perform tasks and send data back to Earth.


Credit: ESA/DLR/FU Berlin

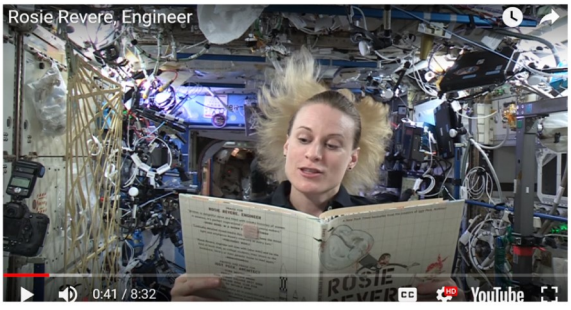
But where does all the dust in that storm come from? According to a new study, researchers now think they have identified the main source of Martian dust - a giant volcanic gash across the planet's surface called the Medusae Fossae. While local and regional dust storms on Mars are frequent, only a few of them develop into a global phenomena. These storms usually occur every 3 to 4 Martian years (equivalent to 6 to 8 Earth years) and can last for several months.

Check out this cool picture to the right of the Martian dust storm front rolling in near Utopia Planitia, near the northern polar ice cap of Mars.

Story Time From Space

Want an astronaut to read a bedtime story to your child, or a book to your classroom? Check out 'Story Time From Space' where astronauts aboard the International Space Station read popular children's books. There are 13 books in their video library with more to come! Our favorite is 'The Incredible Intergalactic Journey Home', but they are all out of this world! Share this with other parents and teachers you know!

http://storytimefromspace.com/



Credit: Story Time From Space