Minnesota Mission Log



Newsletter: Winter 2018

Christa McAuliffe's Lost Lessons to Be Taught Onboard International Space Station

Coming Spring 2018 — Astronauts onboard the International Space Station will teach Christa McAuliffe's lessons that she had planned to perform aboard the ill-fated Challenger Space Shuttle mission. NASA, along with Challenger Center, are working together to film several of the lessons she would've taught aboard the Teacher in Space mission. NASA astronaut Joe Acaba and Ricky Arnold, both former classroom teachers, will film the lessons in orbit over the next several months as part of a series of "STEMonstrations". Some of the lessons include chromatography, liquids in zero gravity and Newton's laws.

Courtesy: NASA

The lessons will be filmed as part of NASA's 'Year of Education on Station', which takes advantage of the continuing presence of astronaut educators in orbit which began in September 2017 and will conclude in September 2018. Several of the lessons will be completed as originally planned by Christa and a few will be reimagined based on materials available aboard the ISS.

"As the living legacy of the Challenger crew, we are thrilled to work with NASA's educator astronauts to bring Christa's lessons to life," said Lance Bush, president and CEO, Challenger Center. "For more than 30 years, we have continued the mission of the Challenger crew, reaching more than 5 million students with our hands-on STEM programs. We are honored to have the opportunity to complete Christa's lessons and share them with students and teachers around the world."

Courtesy: Challenger Center / NASA

The videos will be released alongside corresponding classroom lessons and available on Challenger Center's website (www.challenger.org) beginning this spring. Follow along with the hashtag #TeacherOnBoard.

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Touching the future through STEM education.

In The News

SpaceX Launches Falcon Heavy Rocket—Makes History!

On February 6, 2018 SpaceX made history with the inaugural launch of its Falcon Heavy rocket, the most powerful U.S. rocket since NASA's Saturn V moon rocket. In addition, it had a very unusual payload- SpaceX CEO Elon Musk's personal Tesla Roadster electric car and a dummy called 'Starman'! Cameras mounted on the car live-streamed the Starman's journey for a few hours, giving us some unforgettable shots of Earth before going dark. But if you want to know where the first car cruising our Solar System is right now, you can check out the website: www.whereisroadster.com. To see the amazing video SpaceX put together to recap the entire mission check it out here!

Courtesy: SpaceX

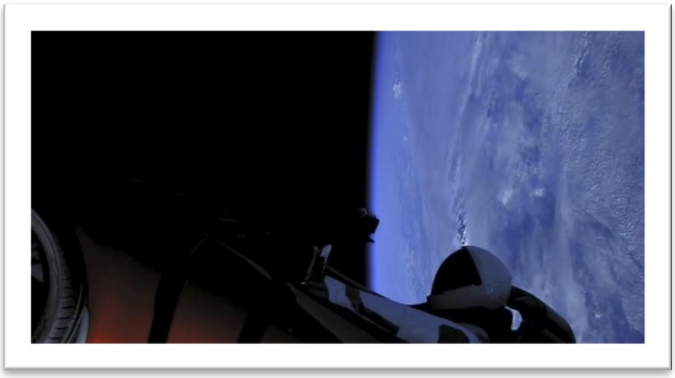
Courtesy: SpaceX

The flight went off almost exactly as planned. The two side boosters fell back to earth and landed simultaneously at Cape Canaveral. The third middle core was supposed to land on a drone ship in the Atlantic Ocean, but not all of the engines fired for landing and crashed only a few hundred yards from it's intended target.

The Falcon Heavy is basically a supersized version of SpaceX's Falcon 9, which has been ferrying cargo to the International Space Station for over 5 years. The Falcon Heavy is three Falcon 9's strapped together, creating three times the thrust of the Falcon 9 alone. With 5.1 million pounds of thrust, this rocket can take astronauts to the moon and even Mars one day. The Falcon Heavy opens up a whole new class of payload as it can launch more than twice as much payload as any other rocket in the world. But the next launch of the Falcon Heavy won't be for another 3 to 6 months, according to Elon Musk.

What's Next?

SpaceX has a number of ambitious goals for the next few years. The company plans to increase the pace of its rocket launches in 2018, which is already at more than one per month; start flying humans to the ISS and around the Moon; and finish developing and testing the BFR, which would pave the way for the company to achieve Elon Musk's goal of colonizing Mars. SpaceX will fly a demonstration mission of an empty version of it's human-carrying Dragon spacecraft using the Falcon 9 sometime mid-2018. If that test flight goes well, NASA astronauts could fly into space in a Dragon spacecraft aboard a Falcon 9 by the end of the year.



Starman Courtesy: SpaceX

St. Patrick's Day Family Science Experiment

Walking Rainbow!

St. Patrick's Day is a holiday known for leprechauns, rainbows and a bit of fun mischief. This post will share our favorite science activity that is perfect to get the kids ready for St. Patrick's Day.

You will need:

- six pieces of paper towels
- food coloring (red, yellow, and blue)
- seven clear cups or jars
- a spoon or stirring stick
- water

Experiment:

- Each of the seven cups will need its own paper towel. Fold and trim the paper towels so that they will rest easily into the cups.
- Line up the cups in an arc to resemble a rainbow.
- Fill cups 1, 3, 5, and 7 HALF WAY with water (we need to leave room to add food coloring and stir). Leave cups 2, 4, and 6 empty.
- Stir a few drops of red food coloring into cups 1 and 7. Stir a few drops of yellow food coloring into cup 3. Stir a few drops of blue food coloring into cup 5.

- Put a folded paper towel into each cup as shown to the right, so that one end of the paper towel is in a cup with colored water and the other end is an empty cup.
- You'll see the colored water almost immediately starts climbing up the paper towels. Carefully add more water to the cups with colored water so that they almost reach the top. Be sure to leave cups 2, 4, and 6 empty!
- Leave your cups to sit just like this for a couple of hours. When you return you'll have a rainbow!

What's Really Happening?

So what is making the water move through the paper towel, carrying the colors with it? It's a scientific process called **capillary action**! Just like water "climbs up" the roots of plants, the colored water in the cups climbs up the paper towels, against gravity. The paper towel is a very absorbent conduit, so the colored water is able to move through it very quickly. It then drips down into the empty glass. When the different colors mix together you see your final rainbow!

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

"You have brains in your head. You have feet in your shoes. You can steer yourself in any direction you choose."

-Dr. Seuss