New School Year/New Opportunities

Settling into new routines and a new school year can be stressful and exhilarating at the same time. In the middle of perceived chaos and uncertainties, remember that a new school year opens new opportunities to spark curiosity and encourage STEAM exploration with students. The DoIT STEAM Newsletter aims to provide ideas, but **we need your feedback.**

Innovative exhibits at the Tech Prairie STEAM Expo at the 2022 Illinois State Fair showcased areas such as quantum information science, aerospace engineering, and the solar eclipse - topics that may be developed further as DoIT plans for the annual event in 2023. These collaborations also enable the creation of possible events and activities throughout the year.

As a state agency, DoIT wants to advocate for STEAM initiatives that support your work. We have created a **6-question brief survey** to gather your feedback. Please participate at: https://forms.office.com/g/V7swQjkchm or email:DoIT.STEAM@Illinois.gov to share ideas that may help guide our developments. Stay curious and passionate!

Let off some STEAM with these fun activities!

◊ **K - 4**
NASA | What Number Am I Thinking Of?

◊ **5 - 8**
STEM DuPage | STEM Starters

◊ **9 - 12**
U of I Colleges of Engineering & Education | Groundwater Education

Educator's Corner

STEAM resources for in-person, hybrid, remote learning, and professional development

- Shedd Aquarium Educator Resources

- Illinois EPA | Environmental Pathways | Where does my food waste go?

- ISU Center for Mathematics, Science and Technology Smart Grid for All

- MIT Technology Review: A Chicago City Sensor Project Goes Global

- Scholarship360 | Top STEM Scholarships

- IEPA | Environmental Education Materials

- BNSTEM | Workplace Connection

- IMSA | Teaching Resources

- Illinois State Board of Education Computer Science Fact Sheet

- SIUe | STEM @ Home

- Titlemax | Engineering Games and Projects

NEWS & EVENTS

2022 Tech Prairie STEAM Expo

DoIT hosted its second annual Tech Prairie STEAM Expo at the Illinois State Fair from August 17—21. More than 45 exhibitors participated, interacted with K-12 students, educators, and visitors, and shared their technologies on the STEAM domains. Roughly 2,500 people joined us this year.

Check out videos and pictures from Expo activities, including done racing, eSports competition, presentations, and more on the **2022 DoIT STEAM Expo website**!

Do you have any suggestions for the next year's STEAM Expo? Click **here** to contact us.
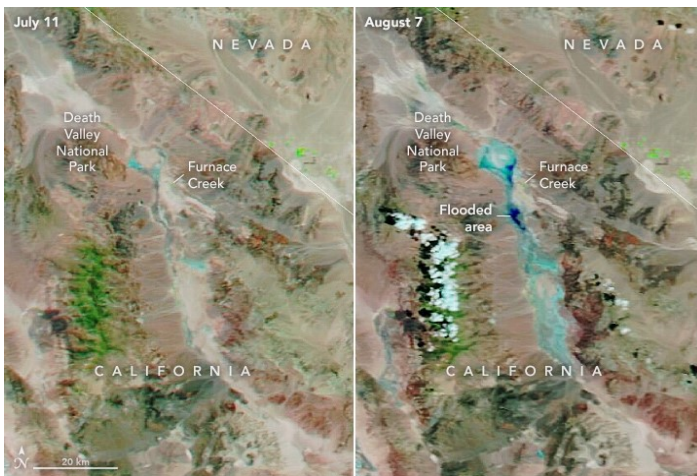
Death Valley Flash Flooding

July 11 - August 7, 2022

"In early August 2022, flash floods soaked Furnace Creek in Death Valley, the driest place in North America. In just three hours on August 5, a thousand-year rainfall event dropped 75 percent of the local average annual rainfall, which is just under 2 inches (5 centimeters). Flood water washed debris over roads, swept away and buried cars, knocked a water facility offline, damaged buildings, and stranded about a thousand visitors and staff in Death Valley National Park."

Houston We Have a Podcast | Back to School

"From Earth orbit to the Moon and Mars, explore the world of human spaceflight with NASA each week on the official podcast of the Johnson Space Center in Houston, Texas. Listen to in-depth conversations with the astronauts, scientists and engineers who make it possible.

On *Episode 254*, Mike Kincaid reviews the many different ways that students and teachers can get involved with NASA throughout the school year and ahead of Artemis I. This episode was recorded on August 3, 2022."

NASA's Perseverance Makes New Discoveries in Mars' Jezero Crater

*"The rover found that Jezero Crater's floor is made up of volcanic rocks that have **interacted with water**."*

"Because the crater held a lake billions of years ago, they had expected to find sedimentary rock, which would have formed when sand and mud settled in a once-watery environment. Instead, they discovered the floor was **made of two types of igneous rock** – one that formed deep underground from magma, the other from volcanic activity at the surface."
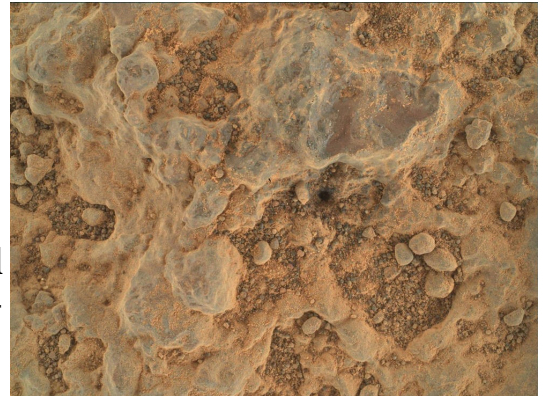
Sat. September 10 | 11 am - 1 pm | Online

Women's Environmental Leadership Lecture Series - I Was A Kid: Mapping Paths to STEM/STEAM

Smithsonian

Join writer, artist, and comics creator **Karen Romano Young** of "I Was a Kid," in an exploration of how the intersection of science and the humanities can be a powerful tool in providing pathways into environmental advocacy and leadership through capturing the histories and voices of the people engaged in efforts to steward and safeguard Earth's eco-systems.

Wed. September 14, 2022 | 3:30 pm – 4:30 pm

Use Tynker's FREE NASA Projects to Hook Students on Coding

LEARNING **TECHNOLOGY** CENTER of ILLINOIS

Tynker's NASA projects are a great way for **teachers and students to try coding together**, regardless of their experience level. In this session, participants will try out 9 of Tynker's latest NASA projects and learn how to:
– Help students craft their very own Mission Patch!
– Guide students in creating pointillism art based on new James Webb telescope photos.
– Facilitate students creation as they program a Lunar Rover

NEWS & EVENTS Cont.

Thur. September 15 | 12 pm—1 pm | Online

IDEA Webinar | Universally Accessible: How to take full advantage of Chromebooks and Google Workspace for Education Accessibility features to personalize learning for all

"We'll spotlight the accessibility features available in Google Workspace and Chromebooks (ChromeOS) to build awareness of the features, while showcasing examples & resources to help participants use these tools to personalize instruction for all learners."

Fri. September 16 | 8:50 am - 2 pm | Online

Explore digital literacy during a one-day professional learning opportunity

Presenters will share "views on how to best integrate this new literacy into instruction across subject areas and grade levels. With this knowledge, educators will be better able to guide their students toward becoming productive, ethical, and empathetic digital citizens – both as consumers and as creators."

Wed. September 21 | 8:30 am - 2:30 pm

Drones in the Classroom

"As drones continue to grow in both popularity and functionality, businesses are rapidly expanding their uses of unmanned aerial vehicles. As we look for new ways to prepare our students for the changing workforce economy, we can look at adding drones to our curriculum. Bringing unmanned aerial vehicles into our schools and classrooms can provide an engaging opportunity to teach our students real-world skills. This workshop will provide an introduction to drone terminology, safety issues, legal concerns, requirements, and drone options. **Participants will be provided a DJI Trello EDU drone for attending the workshop which is included in the cost of the session."**

NEWS & EVENTS Cont.

Sat. September 24 | 8 am - 12:30 pm | EIU
EIU Rural School Initiative | Technology in Education

"The aim is to bring together educators to share ideas and experiences with curriculum, pedagogy, and implementation, related to bringing computational thinking to schools."

Sun. October 2 | 10 am to 4 pm
University of Illinois | College of Veterinary Medicine Open House

Thousands of people attend Open House, which has informative booths and exhibits throughout the veterinary campus, including in **the Large Animal Clinic, the Basic Sciences Building, and the Clinical Skills Learning Center**. Most booths are open throughout the day.

Sat. October 8 | 9:30 am to 2:30 pm
Museum of Science + Industry Chicago | Science Works

In conjunction with Hispanic Heritage Month, Science Works will feature dynamic speakers, hands-on activities and one-on-one discussions. Youth and their families can discover what interesting jobs the **STEM fields** have to offer, see how to turn their passion into a career, and get advice on pursuing a future in STEM.

Sat. October 15 | 10 am to 4 pm | NIU
### *NIUSTEAM | STEM Fest 2022*

STEM Fest is a celebration of all things science, technology, engineering and math. This free event is held each year in October on the campus of Northern Illinois University and features **more than 100 exhibits, speakers, and demonstrations** designed to inspire and engage guests of all ages with opportunities for STEM learning. It is one of the largest free family events in northern Illinois.

STEAM Resource Spotlight

The Art of Architecture

"From pyramids to cathedrals to skyscrapers, architecture reflects the societies and cultural values it originates from. As the built environment expands, the role of architects and architecture in realizing goals of sustainability, along with human aspiration, only increases in importance."
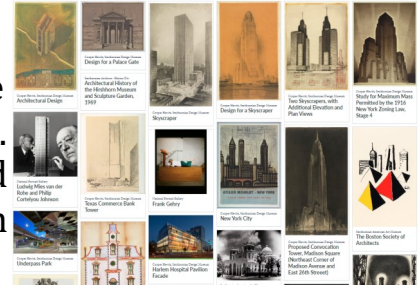
Discover STEM in 30

"STEM in 30 is an Emmy-nominated program for **middle school students** produced by the Smithsonian's National Air and Space Museum. These 30 minute episodes are great for classroom use. New episodes are released every month, featuring hands-on activities, explanations of aviation and space topics aligned with national standards, and interviews with experts from the Museum and beyond."

Learning to Code with NASA Data

"The new Microsoft Learn modules are based around the Python programming language, with names like 'Plan a Moon mission by using Python pandas.'" Margaret Price, principal strategist at Microsoft, noted "the reason they chose Python is because not only is it one of the easiest computer languages to learn, but it's also in wide use among researchers to write programs ranging from data science to artificial intelligence tasks."
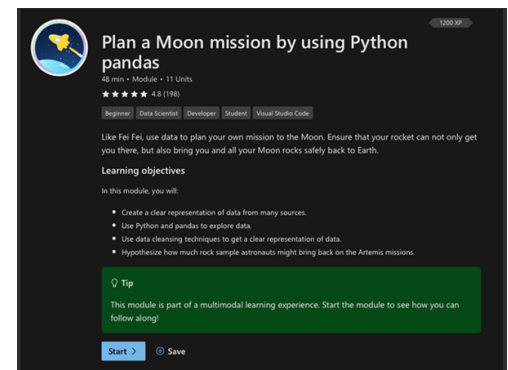
The Artemis Generation Returns to School as NASA Returns to the Moon

"Students and teachers of all levels and backgrounds are invited to get involved with NASA's missions and opportunities through NASA's Office of STEM Engagement. Whether you're looking for ways to engage with Artemis, study Earth's climate, try some hands-on STEM activities, or explore our resources for educators, we have the tools you need to start your NASA STEM adventure."

The 'A' in STEAM

"Arts foster scientific success" -Dr. Temple Grandin

This series is dedicated to showing how art and creativity play a crucial role in our society on its own and even within the STEM fields. There's a great deal of artistry that goes into our favorite products and media we consume that make our lives easier, or at least a bit more enjoyable, and teach us valuable lessons about history.

Street Art Painting in the City

"Beyond Walls" by Saype in Rio de Janeiro, Brazil

"The giant eco responsible landart paintings by Saype were created on the Estàcio favela (825m2) and Copacabana beach (1.500m2). These two artworks were created using natural pigments made out of charcoal and chalk. "Beyond Walls" global project aims to links more than 30 cities over the world to promote the message of togetherness."

Luca Buvoli's art explores COVID spacetime

"In a recent exhibit, the artist wove fantasy and physics to illustrate the temporal funk of living through a pandemic."

"Early in the COVID-19 pandemic, when New York City went into lockdown, artist Luca Buvoli found himself reimagining Albert Einstein's ideas about time."
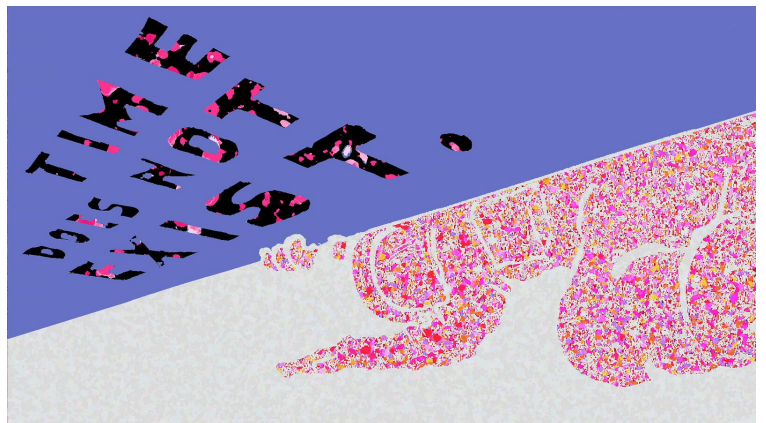
🌐 www.illinois.gov/doit-steam

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✉️ Please submit STEAM ideas, comments, or questions using our contact us form.