



January 2023 / Vol. 25

STEAM NEWSLETTER



THE OFFICIAL NEWSLETTER FOR THE ILLINOIS DEPARTMENT OF
INNOVATION & TECHNOLOGY (DoIT) STEAM EDUCATION GROUP



Happy New Year !!!

Welcome to 2023! As we celebrate a new year, we look forward to new adventures and journeys. We hope that you enjoy the resources we share in our monthly DoIT STEAM newsletter. We appreciate your feedback on ways that we can be of more service to your work in STEAM education. You can connect with us through multiple avenues listed at the end of this newsletter.



Credit: Hongxu Jin (Kim)

In 2023, we plan to host our 2nd annual Quantum Webinar in April and the 3rd annual STEAM Expo at the Illinois State Fair in August. We are also working on development of an educational resources searching tool which will allow users to search for STEAM resources by location in Illinois. We welcome everyone to join our events for education and fun and look forward to collaborating with you in the new year!



Let off some STEAM with these fun activities!

◊ K - 4

[OK GO SANDBOX | Surrounding Sounds](#)

◊ 5 - 8

[NASA | A Guide to Climate Change for Kids](#)

◊ 9 - 12

[NASA | Wetlands Curriculum Unit](#)

Educator's Corner

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

- [NASA | Climate Science STEM Toolkit](#)
- [Royal Society of Chemistry | 14 Ways to Teach Sustainability in Chemistry](#)
- [Royal Society of Chemistry | Women in Chemistry](#)
- [CYARK | Lesson Plans](#)
- [DiscoverE | STEM Activities](#)
- [National Gallery of Art | Teaching Resources](#)
- [WGU | Remote Teaching Resource Center](#)
- [NASA | Make and Code a Light-Powered Device](#)
- [Code.org | Professional Learning for All Grade Levels](#)
- [PBS | Human-Centered Design Principles for Educators](#)
- [KQED Tech | Making Infographics to Inspire Learning](#)
- [E-TRIALS | IES Grant Competition \(Math | Key Dates: 1/26 & 2/23\)](#)

NEWS & EVENTS

NASA, Moog SureFly Test Aircraft Noise

"NASA is taking a leading role to help integrate new types of [Advanced Air Mobility](#) aircraft like air taxis and delivery drones into the sky, helping emerging markets to safely develop an air transportation system that moves people and cargo between places previously not served or underserved by aviation. NASA is working with private sector developers of electric vertical take-off and landing (eVTOL) aircraft, like Moog Surefly, to study the levels of noise they make."



Image Credit: NASA

Why aren't all black bears black?



Credit: Unsplash/CC0 Public Domain

"Sometimes a name is just a name. Take bears, for example. In Yellowstone National Park, black bears outnumber their brownish-colored grizzly bear cousins, and in coastal areas of the Pacific Northwest, if someone says "brown bear," they mean grizzly bear. But not all brown bears are grizzly bears. American black bears (*Ursus americanus*), which one would logically assume are, well, black, actually come in a range of colors, including brown (also known as cinnamon), blond, or bluish-gray. Others have coats that are a mixture of several colors. So, how do you tell a cinnamon-colored *Ursus americanus* from its brown (grizzly) *Ursus arctos* cousin?"

Two Exoplanets May Be Mostly Water, NASA's Hubble and Spitzer Find

"A team led by researchers at the University of Montreal has found evidence that two exoplanets orbiting a red dwarf star are "water worlds," where water makes up a large fraction of the entire planet. These worlds, located in a planetary system 218 light-years away in the constellation Lyra, are unlike any planet found in our solar system."



Credits: NASA, ESA, and Leah Hustak (STScI)

NEWS & EVENTS Cont.

Thu. January 5 | 3:30 pm - 4:30 pm | Online

CS & STEM Networking Meeting



“Teachers, administrators, and curriculum stakeholders are invited to attend, as well **CS & STEM** educators of all experience levels and at all grade levels. Whether you’re just starting out or interested in taking your district’s CS & STEM program to the next level, this networking group will help you achieve your goals.”

Tue. January 10 / 24 | 9:30 am - 11 am | Online

Press “Start” on your District’s Esports Program



There are **two time options** open to register: [January 10](#) or [January 24](#).

“This multi-hour session will focus on the background knowledge needed to initiate a successful esports program, including:

- Game and league options
- Current trends in esports
- Coaching tips and strategies
- Hardware/software needs and recommendations
- Streaming and broadcasting options
- Potential costs”

Thu. January 12 | 6 pm - 7 pm | Online

Explore Space Tech: Landing Heavy Payloads on Other Worlds



“With the Artemis I mission, NASA is one step closer to returning astronauts to the Moon and eventually sending them to Mars. Given the projected mission length of as much as five years round-trip for a human mission to Mars, it will be necessary to send equipment and supplies ahead of time. In this webinar, we’ll explore development of a new generation of decelerators capable of delivering heavier payloads and humans to the Martian surface. Relevant instructional resources will also be included.”

NEWS & EVENTS Cont.

Thu. January 12 | 5 pm - 6:30 pm | Online



Teen STEM Café: The Science Behind America's Football

"Join us at the DeKalb Public Library on January 12, from 5 to 6:30 pm, with NIU Associate Professor Mike Eads, to learn the science behind America's football... Learn how the force exhibited on the playing field has changed over the years. Are players bigger, faster and stronger than they used to be? Does any of that matter?"

NASA | Contest Deadline: Tue. January 17

Power to Explore Student Challenge



"The Power to Explore Student Writing Challenge is open to students in kindergarten through 12th grade in U.S. public, private, and homeschooled. Entries (maximum 200 words) will be accepted between October 12, 2022 and January 17, 2023 ...

This 200-word writing challenge inspires learning about how Radioisotope Power Systems help us explore the extremes of our solar system and to celebrate students' own unique power."

Wed. January 18 | 8:30 am - 3 pm | ROE 34



STEM Series: Coding and Robotics Playground

"During this workshop, we'll also explore what lies ahead for computer science learning and careers. After taking a peek at several emerging technologies, we'll focus in on the new Illinois Computer Science Standards, including methods for aligning the tools you tried in this workshop with a new or existing computer science curriculum. You'll walk away with hands-on experience, links to curriculum, and ideas for implementation specific to your grade level." This workshop will last 6.5 hours, and participants will gain 5.5 PD hours.

NEWS & EVENTS Cont.

Wed. January 18 | 1 pm - 2 pm | Online  Smithsonian

Migration Pitstops

“What is migration and why do some birds migrate? Explore a few key habitats for migratory birds and learn more about their annual journeys.

Grade/Learning Level: K-5”



Wed. & Thu. | January 18 & 19 | Online



K-12 Data Privacy & Cybersecurity Conference

“Over two days, attendees participate in hands-on demonstrations, panel discussions, and presentations led by local, state, and national experts.

The goal of SecurED Schools is to improve the security posture of school districts. We know that the global pandemic fueled digital transformation and technology adoption in school districts across our country. With increased reliance on technology to empower learning comes increased risk, and PK-12 technology and education leaders increasingly understand the vulnerability of their networks and data.”

Thu. January 19 | 1 pm | Online



Smithsonian

NHSA and the Zoo in the Classroom: Cats of All Kinds!

“‘Cats of All Kinds’ is one of three virtual field trips to the National Zoo developed in collaboration with the National Head Start Association as part of the ‘Get a Head Start with the Smithsonian’ project. These high-energy music and movement programs are designed to engage young children and support their teachers in engaging students with early science.”

NEWS & EVENTS Cont.

Thu. January 19 | 9:30 am - 2 pm | ROE 28



What Does Computer Literacy Look Like in your Classroom?

"Starting in the 2022 school year, schools will be responsible for educating their students in computer literacy per the new computer science standards developed by ISBE. In this session, we'll explore what computer literacy is, the K-12 Computer Literacy Knowledge and Skill Continuum, and how you can bring computer literacy into your classroom. We will explore how both new tools and some you may already know can be utilized to fulfill these standards!" This session will last 4.5 hours, and participants will gain 4 PD hours.

Thu. January 26 | 11:30 am - 2:30 pm | Chatham, IL

Ball Elementary STEAM Field Trip



"Join your fellow STEM educators as we tour Ball and Glenwood Elementary's STEAM classes and hear from current STEAM coaches on how they incorporate STEAM into a variety of K-6 classrooms. Q&A time will follow the tour, as well as an open discussion on the challenges associated with establishing and maintaining a successful makerspace."

Thu. January 26 | 6 pm | Online



Explore Space Tech: Supercomputing @ NASA

"In the early days of NACA and NASA, human computers completed by hand the mathematical calculations necessary to advance the Agency's aeronautical, space and Earth science research work. As portrayed in the movie, *Hidden Figures*, their work eventually gave way to ever more powerful computers. In this webinar, we'll explore various ways in which modeling and simulation with high-performance supercomputers are essential to NASA mission success. Relevant instructional resources will also be included."

STEAM Resource Spotlight

NASA EXPRESS Newsletter Sign-up

"Subscribe to the NASA EXPRESS newsletter to get the latest NASA STEM opportunities delivered to your inbox every Thursday.

It's an easy way to stay up-to-date on internships, challenges, professional development, and more. Learn about the latest NASA STEM resources and find ways to make STEM connections to NASA missions and milestones."



AACT Classroom Resources

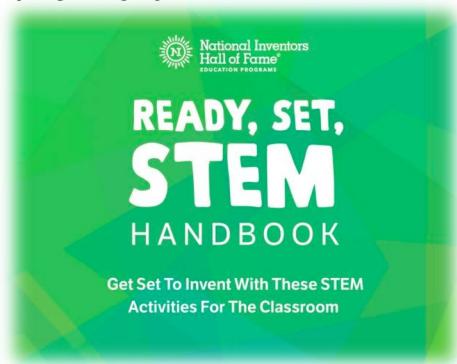


"AACT strives to provide teachers of chemistry with the best teaching resources. Most of the Classroom Resource Library is made up of content from great teachers who created and shared their own work. Currently there are over 1,000 classroom resources available in the library for K-12 teachers of chemistry to use in their classrooms."

Give Students the Gift of Invention

- *STEM Learning Resources for Any Learning Environment*

"Our STEM Handbook is a great resource filled with free and accessible activities for educators to use in the classroom. It also can be used to provide to parents to use for at-home STEM fun. Best of all, these activities embrace social-emotional learning (SEL) principles and allow children to tap into their natural curiosity through the act of play."



Spotlight on STEM

EducationWeek ▶ "The Education Week Spotlight on STEM is a collection of articles hand-picked by our editors for their insights on how innovative technologies and initiatives can increase engagement in science, the benefits of teaching coding skills to young learners, how a NASA supported program is preparing students for STEM careers, how to support the STEM proficiency of Indigenous students, and more."

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.

PORTRAITS: Real People, Real Stories



"Art, biography, history and identity collide in the third season of Portraits, from the Smithsonian National Portrait Gallery. In this special season, we offer a series of virtual visits to the Gallery for all our listeners forced to hunker down during the coronavirus pandemic. Join director Kim Sajet as she chats with curators, historians, and thought leaders about their favorite portraits, and reveals the real people behind the art."

Symmetry Magazine: Finding art in astrophysics technology

"LSST Camera images provide the inspiration for artist Lennart Lahuis's 'Astromelancholia.'

Throughout his artistic career, Lennart Lahuis has found inspiration in the collision between technology and nature, and in the idea that over a long enough timespan, all art is impermanent ...

His latest piece, titled "Astromelancholia," takes inspiration from both an impressive piece of technology—the world's largest digital camera—and an unstoppable process of nature—the passage of time."

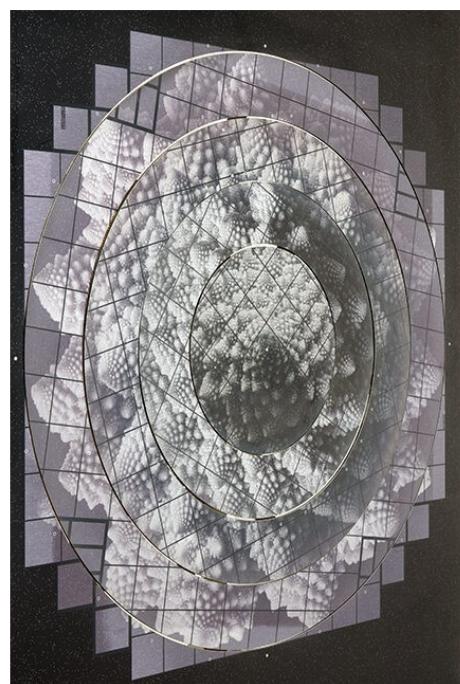


Photo courtesy of Lennart Lahuis

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