STEAM NEWSLETTER

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

CYBERSECURITY AWARENESS MONTH 2022 — SEE YOURSELF IN CYBER

October is Cyber Awareness Month

Immersed in a cyber environment, we should be aware of resources that can help manage cyber risks. Cybersecurity Awareness Month is intended to help people protect themselves and make smart decisions that we can practice at work, school, and home. According to the Cybersecurity and Infrastructure Security Agency (CISA), "this year's campaign theme — '*See Yourself in Cyber*' — demonstrates that while cybersecurity may seem like a complex subject, ultimately, it's really all about people." Governor Pritzker proclaimed October as Cybersecurity Awareness month in Illinois.

Under this theme, CISA and the National Cybersecurity Alliance (NCA) highlighted four key action steps everyone should consider: "**Enable Multi-Factor Authentication**," "**Use Strong Passwords**," "**Recognize and Report Phishing**," and "**Update Your Software**." The U.S. Department of Homeland Security shares useful resources on its website and the National Initiative for Cybersecurity Careers and Studies offers the "NICE Framework" to develop a cybersecurity workforce.

The Learning Technology Center of Illinois supports districts in fostering a secure learning environment by providing cybersecurity services, resources, and professional learning. The Learning Technology Center selected "43 security best practices that all districts should implement to comply with the Student Online Personal Protection Act."

CyberStart America (CSA) "gives students in 9th-12th grade free access to the world-renowned CyberStart game. Tackle four unique bases, each focusing on both offensive and defensive cybersecurity disciplines. Explore over 200 unique security challenges which you'll solve as a cybersecurity agent investigating criminal gangs. Get access to an extensive field manual featuring video demos, top tips and essential background information to help with challenges. Unlock a hidden interest, progress from novice to expert and demonstrate your skills to win scholarships." Registration opens on October 4th and students can play to April 4, 2023.

Let off some STEAM with these fun activities!

◊ **K - 4**
Kidzeum | Build a Birdhouse!

◊ **5 - 8**
OK GO SANDBOX | Making Upside Down & Inside Out

◊ **9 - 12**
OK GO SANDBOX | Illusions

Educator's Corner

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

professional development

- NOVA | Compelling Science Videos

- Smithsonian | Smithsonian Open Access

- Illinois EPA | Environmental Pathways | How does a bulb light?

- Learn Away | Curriculum Ideas | 100,000 Stars

- AAUW | STEM Packs

- Future Goals | STEM Course Online/Offline Resources

- NASA | Earth Data | Data Access Tools

- NASA | Artemis I STEM Learning Pathway

- Great Lakes Equity Center | Equitable, Responsive Education for All

- IDRA | Making Schools Safe Learning Havens for LGBTQ Students

- The Learning Accelerator | How do to set up a station rotation model

- Million Girls Moonshot | Teen Science Cafe

NEWS & EVENTS

NASA Releases Final Moon to Mars Objectives

Moon to Mars

"Following a successful Artemis I, NASA plans to send the first humans back to orbit the Moon with Artemis II no earlier than 2024, and to the lunar surface no earlier than 2025 on the Artemis III mission. NASA will use elements of Artemis to test systems and concepts for the journey to and from Mars. The follow-on Mars campaign will remain connected to the agency's sustained presence on the lunar surface by using the Moon as a testbed."

Battered by Hurricane Fiona, this is what a blackout looks like across Puerto Rico

"Hurricane Fiona has reached the shores of the Dominican Republic on Monday morning, after causing flash flooding, mudslides and an island-wide blackout in Puerto Rico. Island officials have said that some roads, bridges and other infrastructure have been damaged or washed away as a result of the downpour."

STEPHANIE ROJAS / AP

National Hispanic Heritage Month

"Hispanic Heritage Month (HHM) takes place September 15 to October 15 every year as a time to recognize and celebrate the many contributions, diverse cultures, and extensive histories of the American Latino community...

This year's theme was Building Prosperous and Healthy Communities:

Check out more news and events

September 15: Hispanic Heritage Month Kick-Off Day
Week of September 19th: Jobs and the Economy
Week of September 26th: Climate
Week of October 3rd: Education and Investing in HSIs
Week of October 10th: Mental Health and Wellness
October 15: Last Day of Hispanic Heritage Month"

NEWS & EVENTS Cont.

Tue. October 4 | 6 pm to 8 pm | Online

The Source for Learning | 3 Cool Tools for the Flipped Classroom | Free Webinar

"This model of instruction works well for blended classrooms where the emphasis is placed on student autonomy - allowing students to learn at their own pace …

As a result of this session, teachers will:
- Learn **flipped instruction basics**
- Explore **three tools** that can facilitate flipped instruction
- **Plan** for the use of flipped instruction in the classroom"

Tue. October 4 | 6pm | Online

Explore Moon to Mars: STEM Resources for the Artemis Generation

"The new Lunar Exploration program that will land the first woman and the next man on the surface of the moon is called the Artemis Program. To enable educators to engage students with the Artemis Program, **NASA has developed resources to engage students at all grade levels**." Join this free 1-hour webinar to explore these resources!

Sat. October 8 | 9:30 am to 2:30 pm

Museum of Science + Industry Chicago | Science Works

"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."

NEWS & EVENTS Cont.

Thu. October 13 | 4 pm | Online
Explore Earth: Level Up your Data Tools and Resources with NASA Earth Science Data Systems

"Join Elizabeth Joyner, NASA Earth Science Data Systems Community Coordinator, as she aims to demystify access to NASA Earth data. She will explore resources that help to facilitate the access and use of data for a range of transdisciplinary **Earth System Science** topics, including wildfires, tropical cyclones, extreme heat, sea level, agriculture, and more!"

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

"STEM Fest is a celebration of all things STEM. 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."

Tue. October 18 | 4 pm | Online
NASA STEM: Robotics for K-12 Learners

"NASA employees will describe how robots are preparing the way for humans to live and work on the Moon and on Mars someday. They will also explain the importance of introducing students to robotics and engineering at a young age to build up and reinforce a strong STEM pipeline. And they will also demonstrate several **NASA engineering activities and resources** that you can utilize in your STEM classrooms."

NEWS & EVENTS Cont.

Due | Mon. October 24 | 11:59 pm (PT)

NASA | TECHRISE STUDENT CHALLENGE

"From environmental research to developing technologies near the edge of space, schools are invited to join NASA in its mission to advance space exploration and enhance our knowledge of Earth."

Qualification: Students in sixth to 12th grade at a U.S. public, private, or charter school – including those in U.S. territories.

Challenge: "Team up with schoolmates and develop an experiment idea for this year's NASA TechRise flight vehicle – *the high-altitude balloon*!"

Sun. Oct 23 to Fri. Oct 28 | COD
COD STEM Week

Schedule:
- Sunday, Oct. 23 | Mole Day
- Monday, Oct. 24 | **Which STEM Career is Right for You?**
- Tuesday, Oct. 25 | **STEM Spotlight (junior and senior high school students)**
- Wednesday, Oct. 26 | STEM Student Life
- Friday, Oct. 28 | **Women in STEM Career Day (9th—12th grade girls)**

- **Wed. October 5, 2022 | 3:30 pm | Online:**
  Teaching Critical Digital Skills for School Success and Employability
- **Thu. October 6, 2022 | 3:30 pm | Online:**
  CS & STEM Networking Meeting
- **Wed. October 12, 2022 | 9:30 am | Online:**
  Light Up Your Makerspace & STEM Lessons!
- **Tue. October 18, 2022 | 8:30 am | Vernon Hills:**
  STEM Series: 3D Printing and CNC Carving for Beginners

LEARNING TECHNOLOGY CENTER of ILLINOIS

NEWS & EVENTS Cont.

🔒 Cybersecurity Education Events

Mon. October 3 | 3:30 pm | Online

Engage Students With Free Cybersecurity Resources from CYBER.ORG

"Tune in to discover how CYBER.ORG's curricula threads can be used to integrate cybersecurity learning into your lesson plans. A representative from CYBER.ORG will be on hand to introduce teachers to their **project-driven, hands-on curricula** and new, innovative ways to engage students in the classroom. Along the way, we'll also explore some of CYBER.ORG's other **free curriculum resources** as well as strategies for introducing students to potential cybersecurity-related career paths."

Wed. October 5 | 1:00 pm | Online

Be Connected: Cybersecurity Awareness Month - Sharing Awareness with Everyone

"We're highlighting a **handful of resources** you can use to bring everyone up to speed on cybersecurity. We'll also provide recommendations for initiating cybersecurity conversations with each group, based on the specific cybersecurity risks individuals in their role often face."

Wed. October 12, 2022 | 1:00 pm | Online

Be Connected: K12SIX Incident Response Runbook

"No one wants to deal with a cybersecurity breach … it's best to be prepared for the worst - and this resource might be your district's key to bouncing back when worse comes to worst. Join us as we **dig into this resource** and discuss how your district can **harness its recommendation** in the case of a cybersecurity incident."

Wed. October 26 | 3:30 pm | Online

Tips for Teaching Cybersecurity

"As cyber-attacks become more frequent and costly to businesses and school districts, the need to discuss cybersecurity has become even more pressing … Now is the time to get up to speed on cybersecurity and make a plan to keep our schools' **digital infrastructure safe**. Whether you're new to cybersecurity or a seasoned expert, this webinar is for you."

STEAM Resource Spotlight

Scratch

"Your students can use Scratch to code their own interactive stories, animations, and games. In the process, they learn to think creatively, reason systematically, and work collaboratively — essential skills for everyone in today's society. Educators are integrating Scratch across many different subject areas and age groups."

National Gallery of Art
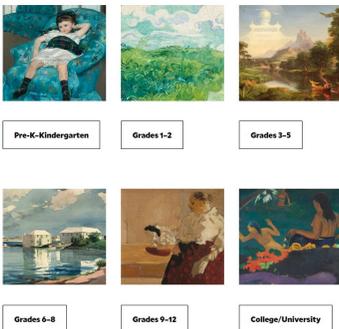
The National Gallery of Art provides lessons and activities on its website. The lessons are organized by grade level ranges and include areas such as Art and Math as well as Art and Science. Educators can utilize the resources to inspire students' interest in art and explore different domains of STEAM.

STEM Lessons From Space

"Have you ever wondered what kind of STEM activities occur on the International Space Station? Follow astronauts as they demonstrate STEM concepts such as Newton's Laws of Motion, surface tension, advances in technology and more.

Select a topic to go beyond textbooks, and use the videos and additional resources to supplement classroom activities."

CS Journeys

"Connecting what students are learning to the real world not only enables them to better understand and recall concepts but also excites and inspires them to continue learning.

Code.org has created easy-to-use resources designed to help you illuminate real-world connections and give students opportunities to explore different career pathways."

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.

Design thinking and the Disco-tracker

As part of a class on design thinking at Stanford University, a graduate student, Jannicke Pearkes, turned her research topic into an art installation resembling a giant disco ball. While studying particle physics at the Large Hadron Collider, "Pearkes spent the last few months brainstorming, designing and assembling an art project she calls the "Disco-tracker" for a class at Stanford's Hasso Plattner Institute of Design." Pearkes explained "The idea was to push your boundaries in terms of creative thinking about your research."

National Hispanic Heritage Month
Latinx Art and Artists

"Smithsonian collections reflect the rich diversity of Latinx art and artists ... Artists featured in the collection reflect the diversity of Latinx communities in the United States, including artists of Mexican, Puerto Rican, Cuban, and Dominican descent, as well as other Latin American groups with deep roots in the United States."

Visit the Smithsonian website to explore the creative Latinx arts and stories of Latinx artists.
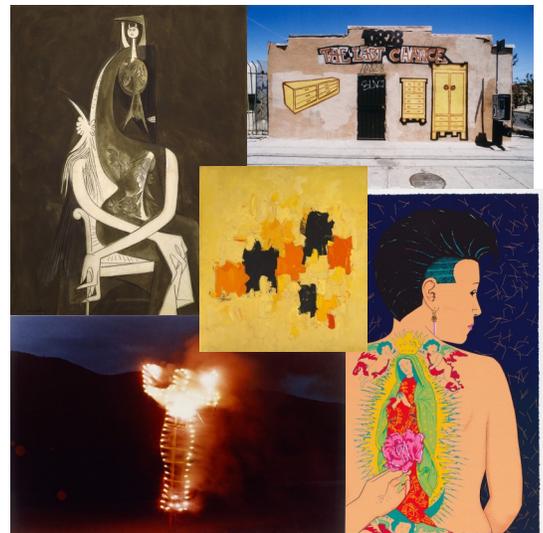
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