

*The DuPage Regional Office of Education STEM Team is here to provide you with STEM news, learning opportunities, and resources.*



# STEM News You Can Use...

*October 2021 Edition  
How can we support you this year?*

## NEWS

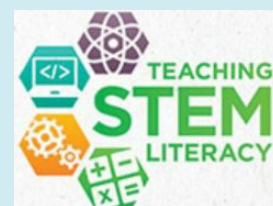
### November 1 - Last Day to Enter the STEM Website Challenge

Winners will be randomly selected from successful challenge entries. Take a look at the [prize list](#) with more prizes to be added after November 1. Challenge information is posted on the lower left side of the [main page](#).



### Why STEM Literacy Is Critical for Our Students

Providing an engaging and equitable STEM education is important to develop more scientists and engineers while increasing race and gender diversity in the field. STEM education also contributes to the development of a STEM-literate citizenry. Learn more about [classroom ideas](#) that can assist you in your STEM literacy efforts.



### (W)holistic Science Pedagogy: Teaching for Justice

Access to quality science and math instruction remains a civil rights and social justice issue, particularly for students in marginalized communities and schools where stereotypes fuel low expectations for academic achievement and success. (W)holistic Science provides an insightful [framework](#) for teachers.



### Creating Opportunities for People with Disabilities in STEM Careers

Encouragement and support are key for individuals to enter and succeed in STEM careers. [Learn about possible steps to help address this need](#). If you are looking for examples of STEM professionals with physical or learning challenges, consider these:

- [Annie Jump Cannon, Classifier of Stars](#)
- [Temple Grandin, Animal Scientist](#)
- [Ralph Braun, Engineer](#)
- [Geerat Vermeij, Paleoecologist](#)
- [Richard Mankin, Entomologist](#)
- [Farida Bedwei, Computer Scientist](#)
- [Wanda Díaz-Merced, Astrophysicist](#)



## EVENTS

### Civic Online Reasoning in the Science Classroom - November 5, 2021

The DuPage ROE is pleased to host this free session. Join Dr. Joel Breakstone, Director of the Stanford History Education Group, to learn how to improve students' abilities to evaluate scientific information on the internet and incorporate Civic Online Reasoning in the classroom. Social studies teachers, science teachers, and librarians will particularly benefit from this session. [Register](#) to join in person or participate via an on-demand webinar for PD credit.

**Promoting Equity, Diversity, and Inclusion through Science and STEM - November 2021**

NSTA is hosting the four-part miniseries. Registration and information [here](#).

### **2022 Robert F. Tinker Fellows Program**

This program aims to promote innovation, creativity, and cross-disciplinary conversations in educational technology for STEM teaching and learning. This year's theme focuses on inclusion, equity, and access in STEM education. Proposals should address educational technology-related approaches in one or more of the required topics. **Applications are due 12/1/2021.** Learn [more](#).

### **NSTA - Applications Open for the 2021-2022 Awards Program**

NSTA is now accepting applications for its [2021-2022 Awards Program](#) honoring K–12 teachers, principals, professors, and other education professionals for their outstanding work and achievement in science and STEM education.

### **NGCP Webinar: Girls STEAM Ahead with NASA - November 3, 2021**

Learn about free resources from [NASA'S Universe of Learning](#) and hear how facilitators incorporated them into their own [Girls STEAM Ahead](#) with this NASA event. [Join the conversation](#) to share best practices, ask questions, and learn how NASA's Universe of Learning team can best support your efforts in engaging your audience with the science of astrophysics. (11 am Pacific/2 pm Eastern)

### **Computer Science Symposium - January 14, 2022**

Join your peers for this [one-day, virtual gathering](#) that will feature presenters from around the state who are excited to share CS teaching experiences in multiple grade levels. Attendees will also have the chance to obtain proven curricular resources.

### **Virtual STEM Competition for Grade 6-9 Students - Registrations due January 12, 2022**

Student teams identify a community problem and investigate the problem through the use of scientific inquiry or design a solution through the use of the engineering design process. [Read more](#).

## **RESOURCES**

### **Vernier Celebrates 40th Anniversary with Technology Awards!**

As a "thank you" for your hard work and dedication to inspiring students, Vernier is awarding 40 educators with \$1000 in Vernier technology. [Applications](#) are open through November 5, 2021.

### **Greenlight for Girls**

This online portal compiles resources for kids, not just girls, although that is the focus, including videos, podcasts, websites, and more. Explore the [website](#).

### **Still Looking for Some Ghoulish Fall Activities?**

Check out the Science Buddies [Newsletter](#).

### **Spark 101 Resources**

- [STEM Skills Videos](#) - Real world challenges show students what it's like to work in the STEM field. Each 10-minute video features industry professionals who walk students through a problem they face on the job. Students can work independently or as a group to recommend a solution.
- [Career Snapshot Videos](#) - One minute videos for students to see what it's like to work in the aerospace, construction, data analytics, healthcare, and cybersecurity industries. Each is available in Spanish and English.
- [STEM Rockstars](#) - Spotlights young professionals from diverse backgrounds who are working to make a difference in science, business, medicine, engineering, and technology, with answers to questions about their career paths.
- [Engineering Design Challenges](#) - For K-8 students. Includes lesson plans, assessments, and slides for each challenge. Contact [education@learningundefeated.org](mailto:education@learningundefeated.org) for more information if needed.

### **STEM Trunks**

The DuPage Regional Office of Education has in stock several STEM Trunks available for loan to

your school for two weeks at a time. The Trunks target a wide variety of topics and age levels, with most being easily adjusted to your needs. The trunks come complete with all materials, and many come with teacher guides and suggested activities. Learn more by emailing Mary Biniewicz at [mbiniewicz@dupageroe.org](mailto:mbiniewicz@dupageroe.org).



Send suggestions, comments, and requests to  
Dr. Mary Biniewicz, [mbiniewicz@dupageroe.org](mailto:mbiniewicz@dupageroe.org).

DuPage ROE STEM Website  
[www.stemdupage.com](http://www.stemdupage.com)



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(WOCinTech/Flickr)

## EdCamp: How to Run Yours Virtually

Michael Gaskell shares several steps his school used to move toward [virtual edcamps](#), including choices for teachers and breakout rooms to increase engagement.

## Teaching Math Through a Social Justice Lens

As racial inequity soars on the nation's radar, math teachers increasingly bring social justice questions into their classrooms. Read more from [Education Week](#).

## Major Upgrade to Fermilab Accelerator Complex Gets Green Light

Read about [Fermilab's plan](#) for building the PIP-II accelerator, a high-power, superconducting machine that will become the heart of the laboratory accelerator complex.

## Math Leaders Share Ideas for Remote Learning

A [new study](#) brings together ideas on making online learning better. Among the suggestions are providing consistent opportunities for sharing among teachers, searching for better tools, and lessening the digital divide for students.

## The State of STEM Talent 2020

[Take a closer look](#) at the last decade of progress in Illinois, which is a national leader in computer science. Other fields that intersect mathematics, computing, and business have seen significant growth but education in these growing areas is lacking for many Illinoisans.

## Upcoming Events and Opportunities

### Technology Center of DuPage Virtual Open House - January 28, 2021

Tour the facility, meet the teachers, and learn about the programs. [Click here](#) for more information about this virtual event.

### How Language, Race, and Culture Impact the Science Classroom - February 2, 2021

Join Bryan A. Brown (Science in the City) to [explore](#) how issues of race, language, and culture shape the outcomes of teaching and learning in science.

### California Academy of Science Distance Learning Programs

Enjoy free livestreams, nationwide, through the distance learning programs geared toward grades K-8. See the [February schedule](#).

### The Learning Technology Center of Illinois Workshops and Webinars

[Click here](#) to access a comprehensive list of workshops and other events. Registration costs vary; many are free of charge.

### Illinois Institute of Technology – 37<sup>th</sup> Annual STEM Expo - February 21-27, 2021

The DuPage Regional Office of Education STEM Team will join other STEM presenters involving students in online STEM activities for grade K-12 students as part of National Engineers Week. For more information, [click here](#).

### Chats with Change Makers - February 25, 2021, 11:00 am.

Watch Tiffany, the high school host, interview an electrical engineer, rocket scientist and astronaut. [Learn more](#) about the upcoming session and to access archived sessions.

## Resources

### Federal Aviation Administration (FAA)

The FAA aims to prepare and inspire the next generation of aviation and aerospace professionals and educate the public about its mission to maintain the safest, most efficient aerospace system in the world. Visit [FAA](#) for aviation-oriented STEM initiatives or contact Jonni Christian ([jonni.christian@faa.gov](mailto:jonni.christian@faa.gov)) to schedule an FAA Outreach Representative to speak with your students.

### Creative Ways to Assess Math Understanding

Traditional math assessments tend to provide a narrow gauge of student learning. Here's how some teachers are [going deeper](#).

### The Radium Girls (The Dark Story of America's Shining Women) - Kate Moore

Young women worked in factories painting radioactive glow-in-the-dark numbers on watches were told that the glowing radium paint was safe. Use this [book](#) (or excerpts) to integrate literacy, science, and social science standards into your science lessons. The movie version is/will be carried by several streaming services.

### How to Teach Coding and Robotics from Home

Coding and robotics can be taught while students remote learn. Here are a [few tips](#).

### Looking for a Good STEM Read?

NSTA released its list of [2021 Best STEM Books](#) for grades K-12. They focus on a variety of real-world issues such as vaccines, artificial intelligence, and women in science, which can be used to foster student interest in STEM topics.

### Tennessee's District Science Network Task Library

The Task Library is a collection of 11 classroom tasks spanning all grade bands and disciplines designed to measure student proficiency in today's science standards. Watch the [webinar](#) to learn more and access the materials [here](#).

### National Engineers Week - February 21-27, 2021

Start planning your engineering activities. Here are a few resources: [Discover Engineering](#), [Chats with Change Makers](#), [StarNet Libraries](#), [Teach Engineering](#), [National Science Foundation](#), [eGFI](#), [Try Engineering Toolkit](#), [Encouraging Young Engineers and Scientists](#), [Design Squad](#), [Siemens STEM Day](#), [STEAMsational](#).



## Black History Month

Celebrate and honor the innovations and advances made by African American mathematicians, scientists, technologists, and others in the STEM field. Here are some places to get started: [Live Science](#), [SciTech](#), [Buzzfeed](#), [Varsity](#), [Biography](#), [Orlando Science Center](#), [Math & Movement](#), [Mashup Math](#), [How Stuff Works](#), and [Nature](#).



## Emerging Technology Can Improve Online Math Engagement

Thoughtful content and emerging technologies lead teachers to successful online classes. [Read more](#).

## Cultivating Interests and Competencies in Computing

A new report from the National Academies of Science, Engineering, and Medicine describes ways authentic STEM experiences help students develop interest and competencies in computing, with "particular attention to approaches and experiences that promote the success of children and youth from groups that are typically underrepresented in computing fields. See the [summary](#) or access the full report [here](#).



## Mission Unstoppable

The CBS educational/informational series has been picked up for a second season, which started in January. The show is part of the CBS Dream Team, It's Epic program block and centers on diverse female STEM professionals as role models. The program airs at 11:00 am on Saturdays.

## Upcoming Events and Opportunities

### Facebook Live Career Connections Chat - February 16, 2021; 5:30 pm

Join Dr. J'Tia Hart, nuclear engineer at Argonne National Laboratory, as she talks about her interest in increasing minority participation in STEM in this [Facebook Live](#) presentation, courtesy of the Carnegie Science Center.

### Mission to Mars Student Challenge - Scheduled Landing - February 18, 2021

NASA's Jet Propulsion Lab has created a STEM [toolkit](#) for K-12 educators and families that focuses on the scheduled landing of the Mars Perseverance Rover on February 18. [Watch the touchdown live](#) and lead students in designing and building their own mission to Mars with guided plans featuring standards-aligned STEM lessons and activities, plus live stream Q&A's with experts and opportunities to share student work worldwide.

### Illinois Institute of Technology - 37<sup>th</sup> Annual STEM Expo - February 21-27, 2021

The DuPage Regional Office of Education STEM Team will join other STEM presenters involving students in online STEM activities for grade K-12 students as part of National Engineers Week. For more information, [click here](#).

### DiscoverE Celebrates Engineers Week!

Check out DiscoverE's library of [STEAM activities and video challenges](#) you can use to engage students in engineering at home and online!

### Presidential Award for Excellence in Mathematics, Science Teaching (PAEMST) - March 1, 2021 Due Date

Know someone worthy of being considered for the nation's highest honor for teachers of science, technology, engineering, mathematics, and computer science? Hurry!!! [Nominations](#) for 7-12<sup>th</sup> grade teachers close on March 1, 2021.

### What Is Social Justice in the Science Classroom - March 6, 13, 20 and 27, 2021

Join NSTA for this [four-part, interactive, virtual miniseries](#), jointly hosted by the Association for Multicultural Science Education (AMSE) and NSTA's Committee on Multicultural / Equity in Science Education. \$70 for members; \$85 for nonmembers. Early bird rates available.

### Virtual Aviation Day for Educators - March 26, 2021

Want to know more about aviation, aviation careers, and how to integrate aviation concepts into your curriculum? [Register](#) for this event, sponsored by IMSA and Scott Air Force Base.

## Resources

### Lions, and Tigers, and Dragons, Oh My!

[Raising Dragons](#) offers a collection of learning activities that most often use materials found around the house. While many are geared toward younger learners, many can easily be adapted and made more rigorous with a little thought. Consider doing a [snow volcano](#)!

### Your Digital Footprint: Data and Energy Use

Cell phones and laptops use energy to charge their batteries. But did you know that sending emails, texts, and Snapchats requires more energy? This [video and sample discussion questions](#) will help your students investigate digital data and energy consumption.

### At Home Science

Whether you are teaching in the classroom or virtually, Learning Undeclared has posted [30+ video experiments](#) using items found in most homes.

### Connecting Mathematics and Science through Literature and Storytelling

In this recorded [webinar](#), explore how literature and storytelling paired with mathematics and science create an incredible opportunity to make connections for students. Using children's literature and storytelling to connect math and science helps build positive identities, guides students as they make sense of the world, and provides occasions to experience joy, wonder, and beauty across these subjects.

# STEM News You Can Use...

VISIT THE DUPAGE ROE STEM WEBSITE AT <http://stemdupage.com/>



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## Women of Color Lead Gender Equality in STEM Education

[Research](#) suggests surprisingly encouraging trends among African American and Latinx AP students that could translate to insights for increased gender equity in other STEM contexts.

## Advertising Changes in Kids' Games

A federal court granted final approval of [class-action settlements](#) in which Disney, ViacomCBS, and ad-tech companies have agreed to limit collection of personal data and behaviorally targeted ads for kids under age 13.

## Earth Week Is Here but Celebrate Throughout the Year!

Use some of these resources to explore how we can contribute to the overall health and well-being of our earth and environment: [National Environmental Education Foundation](#), [Climate Change and the Mosquito Population](#), [Biodiversity](#), [Earth Day](#), [NASA](#), and [Tinkerlab](#).

## 1871 Acquires Naperville's hub88

1871 is acquiring [intellectual property assets and programs](#) of hub88, a technology hub for entrepreneurs and innovators. Hub88 offers virtual and co-working/event space at Nokia's former campus in Naperville. 1871 also will continue the [hub88](#) mission to support and encourage our next generation of innovators.



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## Upcoming Events and Opportunities

### DuPage Regional Office of Education Offers Unfinished Learning Professional Learning Opportunities

Are you looking for ways to effectively address unfinished learning based on the Illinois Priority Standards? Sign up for one or more of the following seminars to explore powerful resources and tools that will help you make informed and intentional instructional decisions.

[MATH K-2](#), [MATH 3-5](#), [MATH 6-8](#), [SCIENCE K-5](#), [SCIENCE 6-8](#), and [SCIENCE 9-12](#)

### California Academy of Sciences

Check out these future sessions and recorded programs offered by the CAS for [educators](#) and [students](#).

### STEMCON – April 23-25, 2021

STEMCON is a public outreach event designed to inspire and educate K-12 students in the fields of science, technology, engineering, and mathematics. This [family-friendly event](#) encourages scientific discovery through hands-on activities and demonstrations while providing the opportunity to learn about scientific careers from actual researchers, industry representatives, and STEM educators.

## Resources

### Concord Consortium

Bring out your students' inner scientist with scientifically accurate [models and activities](#), aligned to NGSS standards.

### New York Hall of Science

Explore this [comprehensive list](#) of resources for STEM educators.

### Mind Research Institute

Through ongoing research, the Institute investigates key questions about learning, mathematics, and how the brain works. This work results in ideas about unique and effective learning environments for students and teachers. Consider some of the activities on their [website](#).

### DuPage Regional Office of Education Offers Mini Grants to Support STEM Activities and Programs in Grades 5-8

If you have the programs, we may have the funds! Career exploration software and materials/supplies for STEM programs in your public school or district may qualify for grants of up to \$1000. Email [mbiniewicz@dupageroe.org](mailto:mbiniewicz@dupageroe.org) to learn more.



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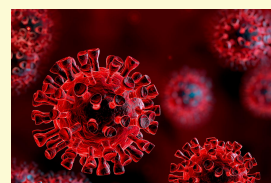
# STEM News You Can Use...

*September 2021 Edition  
Welcome Back!*

## NEWS

### How the COVID Delta Variant Spreads So Quickly

The delta variant appears to be twice as transmissible as other variants thus far. [Learn about the contributing factors](#) and gain insights about how to use this information to help students understand.



### Is Data Science the New Coding?

There's been a big push in recent years to get students coding, with emphasis on word processing and typing skills. Now there's a movement to bring data science into classrooms. Read [more](#).



### Algebra I - A Turning Point

Read the [case study](#) to learn more about preparing students for the gatekeeper math course.

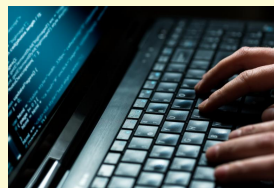
### Using ELL Strategies in the Science Classroom

Science vocabulary can be a barrier to learning science. Learn how [ELL strategies](#) can help students get a better grasp on that.



### Influencing Perceptions of STEM Through Reading

Authors discuss the possibility of [shaping student perceptions](#) of STEM careers by presenting them with examples of others who fill these roles.



### Many Illinois Students Not Receiving Critical Computer Science Education

Illinois high school graduates are entering a workforce in which 80% of current jobs require some level of computing knowledge but many may not be prepared. [Insight from Illinois News Bureau](#).

## EVENTS

### Student After-school STEM Workshops Return

After a year of revamping, these student workshops will again be available. Email Mary Biniewicz, [mbiniewicz@dupageroe.org](mailto:mbiniewicz@dupageroe.org), to request information.

### Calling All DuPage Educators!

We invite you to explore the DuPage ROE STEM [website](#) for loads of STEM information, including resources you can use in your classroom and with families or just to have some fun. Because of the invaluable work you do with and for DuPage children, we will be offering some great prizes in our Website Challenge to be posted on our site **September 15**. Check out the website now and, again, later in the month to enter the Challenge.

### Illinois Science Teaching Association Conference - October 11, 2021

Join other science and STEM teachers to engage in professional development and networking. The ROE STEM Team plans to facilitate at least one session and we look forward to seeing you there! To learn more and register, click [here](#).

### ICTM Annual Conference - October 16, 2021

The 2021 conference will be a half-day, virtual conference. Click [here](#) for details.

## RESOURCES

### Summer Olympics - STEM Learning Opportunities

Look to these [NBC Learn videos](#) to help you introduce students to women in STEM who work with U.S. Olympic and Paralympic athletes. Want more information about women who combine their STEM careers with sports? Check out these for starters.

- [Mission Unstoppable: Training with the U.S. Women's National Team](#)
- [Mission Unstoppable: Using Science to Make Sports Safer](#)
- [Yamilée Toussant Beach Profile Video](#)
- Kimberly Sass [Activity Sheet](#) and [Educator Guide](#)
- [This Is What a Scientist Looks Like: Monica Rho](#)

### DuPage ROE STEM Website

The STEM website, [stemdupage.com](http://stemdupage.com), now includes STEM starters and activities that can be completed in 30 minutes or less. And, we can even provide teachers with the activity supplies with sufficient notice! We invite you to take a closer look.

### Interested in Writing for Connected Science Learning?

Briefs (up to 750 words) and full-length articles (up to 4,000 words) are accepted for peer-review. Check out the [Submission Guidelines](#) and [Call for Contributions](#) to learn more.

### New Computer Science Teacher Endorsement Program Launches at University of Illinois

The program is designed to equip Illinois teachers with the foundational knowledge to teach existing computer science courses, develop their own courses, and integrate new technologies, all aimed at providing more equitable learning experiences in computer science. [Details from the Grainger College of Engineering.](#)

### The Secret Science of Sports

Why does a football spiral? How do some athletes jump so high? The answer is science! [The Secret Science of Sports](#) book helps kids ages 8-12 better understand concepts of science, technology, engineering, and math through the sports they love to play and watch. Teachers can also use the book as a great classroom resource.

### STEM Trunks

The DuPage Regional Office of Education has in stock several STEM Trunks available for loan to your school for two weeks at a time. The Trunks target a wide variety of topics and age levels, with most being easily adjusted to your needs. Many come with teacher guides, supplies, and suggested activities. Learn more by emailing Mary Biniewicz at [mbiniewicz@dupageroeorg](mailto:mbiniewicz@dupageroeorg).

### National Girls Collaborative Project

The vision of the National Girls Collaborative Project® (NGCP) is to bring together organizations throughout the United States that are committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM). [Numerous resources](#) can be tapped to help you encourage interest in STEM careers, including the [IF/THEN](#) collection.

### STEM Teachers, Are You Looking for Supplementary Classroom Materials?

A Northwestern student group will soon release a series of short videos entitled, "[A Day in the Life of a STEM-itist](#)" for middle and high school students. Every two weeks, the virtual, live Q&A panels will follow the videos. Contact [nu.stem.series@gmail.com](mailto:nu.stem.series@gmail.com) for more information!





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