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Outreach Notes **P.13**



Upcoming Events:

1. Ohio Educators Summit / OTEEA Conference, October 21, 2026, River Valley High School, Caledonia, OH
2. ITEEA Conference, March 31 - April 3, 2027, Louisville, KY
3. National Robotics Challenge, April 15 - 17, 2027, Marion, OH

OTEEA webinars
[online archive](#)

OTEEA News,
Resources, and
Notes [online archive](#)

STEM is Elementary
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[STEM competitions](#)
[and more resources](#)
spreadsheet

[Link to OTEEA](#)
[membership form](#)

What Are Algorithms?

1440

An [algorithm](#) is a series of steps for completing a task. Broadly, this includes everything from the instructions in a recipe and the procedures used to solve mathematical problems to the software underlying search engines and the ways AI systems identify patterns in data ([view types](#)).

Colloquially, algorithms are associated with recommendation systems that provide users with personalized content based on their preferences, as seen in social media feeds.

Although algorithms have existed as long as routines, processes, and mathematics have, the term originated from Algoritmi, the Latin translation of [al-Khwārizmī](#), a 9th-century mathematician whose book "Al-Jabr" gave algebra its name. In 1843, English mathematician [Ada Lovelace](#)—considered the first

computer programmer—designed the first computer algorithm, which showed how a machine could perform a complex mathematical calculation. By 1936, Alan Turing proved that a machine could be designed to execute any conceivable algorithm, laying the foundation for modern computing ([watch explainer](#)).

Since then, algorithms have been developed to process data faster than can be done by hand, with complex systems able to automatically self-improve and become more efficient ([watch how](#)). Certain algorithms, such as those in hiring and lending, may reinforce existing biases because they rely on human programming or, in the case of machine learning, historical patterns in data ([algorithmic bias, explained](#)).

Learn even more by exploring all our findings on Algorithms [here](#).

Here's a sample of what we found ...

- You've been secretly training algorithms when you solve CAPTCHA puzzles. ([Read](#))
- YouTube's recommendation algorithm relies on over 80 billion daily pieces of information. ([Read](#))
- What do dynamic pricing algorithms consider when changing prices in real time? ([Watch](#))
- Navigation apps rely on an algorithm developed at a Dutch café in 1956. ([Watch](#))

Revolutions in Science: Discovery, Imagination, and the Future

Co-hosted by the National Academy of Sciences and the Smithsonian Institution

As the United States marked its 250th anniversary, the National Academy of Sciences convened scientific leaders, innovators, and emerging researchers to explore a central question: What discoveries will define the next 250 years?

Revolutions in Science: Discovery, Imagination, and the Future was a day-long symposium exploring the ideas, technologies, and people shaping the future of science. Facilitated by Heather Berlin of the Icahn School of Medicine at Mount Sinai, the program included keynote addresses, interdisciplinary conversations, and presentations on visionary research. Participants examined how scientific discovery drives progress, how public investment fuels innovation, and how the scientific enterprise can address the challenges and opportunities of the future. When we talk about self-driving cars, we aren't just talking about hardware and software. We are talking about the intersection of ethics, urban planning, environmental science, mathematics, sociology, and the very fabric of how our communities function. What if we stopped treating "coding" as an isolated skill and started seeing it as the engine that drives social equity and safer streets.

[Read more and watch video highlights](#)

The Culture of Yes: Why a 'Safe-To-Fail' Environment Is Non-Negotiable

The PAST Foundation, Annalies Corbin

When we talk about a "Culture of Yes," we aren't suggesting a classroom without boundaries or a "yes-man" approach to every student's whim. Rather, it is a stance of curiosity and possibility. Borrowed from improvisational theater, the core principle is "Yes, and..."

In a traditional classroom, a student's off-the-wall idea might be met with, "No, we don't have time for that," or "No, that's not in the curriculum." In a Culture of Yes, that same idea is met with affirmation: "Yes, that's an interesting angle. How could we connect it to the physics problem we're solving?"

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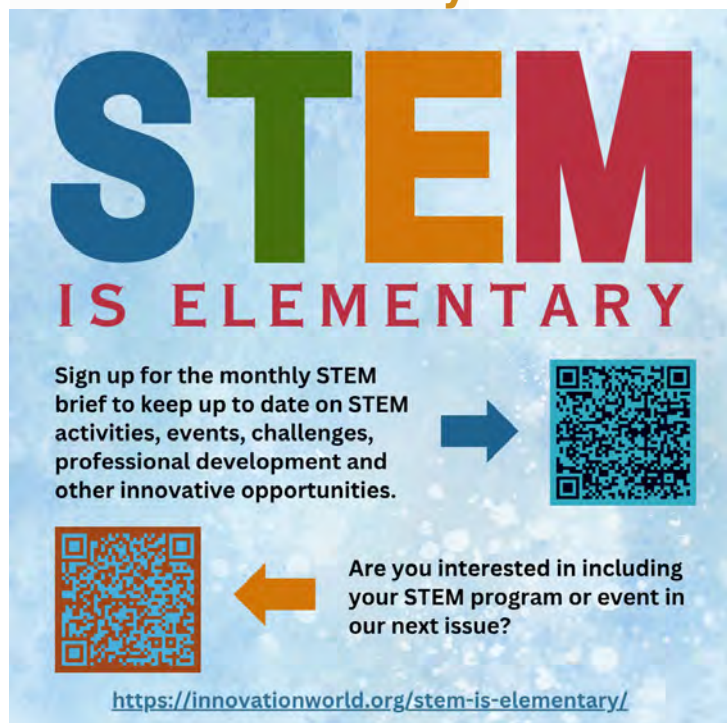
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[Read more](#)

Popular Science Articles

- [Arizona students design app that calculates least-sweaty walking route](#) - Cool Routes helps users find the coolest paths and reduce exposure to dangerous heat.

STEM Is Elementary



The July issue of STEM is Elementary is [available here](#).

NEO:STEM Now Newsletters



Building the Future of STEM in Northeast Ohio

Connecting schools, businesses, and communities to inspire curiosity, develop future-ready STEM skills, and open doors to new opportunities.

[Read July 15 Newsletter here](#)

Novel Engineering Book Suggestions

[Tufts Center for Engineering Education and Outreach](#)

We recently asked you to share the books that have worked best in your classrooms, and the

response gave us a wonderful list to pass along. Below are the titles teachers have tried and recommend.

- Ada Twist, Scientist (and series) by Andrea Beaty
- Amina's Voice by Hena Khan
- Anansi the Spider by Gerald McDermott
- City of Ember by Jeanne DuPrau
- Hatchet by Gary Paulsen
- Hello Ruby: Adventures in Coding by Linda Liukas
- How to Catch a Leprechaun by Adam Wallace (series: How to Catch...)
- Inside Out & Back Again by Thanhha Lai
- Mechanimals by Chris Tougas
- Mouse Paint by Ellen Stoll Walsh
- Mr. Archimedes' Bath by Pamela Allen
- Muncha! Muncha! Muncha! by Candace Fleming (author), G. Brian Karas (illustrator)
- My Father's Dragon series by Ruth Stiles Gannett
- Number the Stars by Lois Lowry
- Pop's Bridge by Eve Bunting
- Santa Bruce by Ryan T. Higgins
- Shiloh by Phyllis Reynolds Naylor
- The Boos That Changed the World by Barry Wittenstein
- The Boy Who Harnessed the Wind by William Kamkwamba & Bryan Mealer
- The Giver by Lois Lowry
- The Great Santa Stakeout by Betsy Bird
- The Green Book by Jill Paton Walsh
- The Lighthouse Keeper's Lunch by Ronda Armitage
- The Martian by Andy Weir
- The Snowy Day by Ezra Jack Keats
- The Wild Robot by Peter Brown
- Thinker Toys by Michael J. Nardone
- Trouble with Trolls by Jan Brett
- Whoosh! Lonnie Johnson's Super-Soaking Stream of Inventions by Chris Barton
- Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane by Kirsten W. Larson

Is your favorite not on the list, click the button below to add it!

[SHARE YOUR BOOK!](#)

Technology Connections - YouTube Channel

[Technology Connections](#)

Sample video: [Nobody understands the point of hybrid cars](#)

Bridges With Fascinating Backstories Across the US

[The American Facts](#)



Image: Steve Wrzeszczynski

America's bridges are more than just ways to get from point A to point B—they're monuments to human ingenuity, determination, and sometimes sheer stubbornness. Underneath their steel cables and concrete pillars lie history-making stories of tragedy, triumph, and political intrigue. Let's explore ten famous bridges whose backstories are as captivating as their engineering, revealing the human drama behind these iconic structures.

[Read More](#)

The STEM Pulse

June 26, 2026 issue

Sample articles

- How the Factory of the Future Reshapes Manufacturing | Boston Consulting Group
- Design Principles for Teacher Preparation | Learning Policy Institute & EdPrepLab
- Engineer the Future: The Arduino Educator Scholarship Sponsored by Qualcomm Has Launched!

[Read more](#)

STEM Next Is Testing a New Model for AI Learning in Afterschool. Early Results Show What Works.



Before they got involved in STEM Next's Opportunity AI pilot project in the fall, afterschool educators said they weren't sure where to start with using AI in their programs, much less teaching kids how to use it. Now, they're testing activities with students, exploring how to integrate career-connected AI learning in their programs, and sharing what works with other educators across their states.

This is an early look at what it takes to scale human-centered AI learning through afterschool.

[Read more](#)

Save the Date for ITEEA's 2027 Conference

Mark your calendar for the ITEEA 2027 Conference, coming to Louisville, Kentucky, March 31-April 3, 2027!

The Conference theme, *Taking the Reins: Guiding the Future of Technology and Engineering Education*, invites educators, leaders, and innovators to come together to shape what's next for T&E education.



ITEEA Call for Presenters

We can't wait to bring ITEEA's 2027 Annual Conference, Taking the Reins: Guiding the Future of Technology and Engineering Education, to Louisville, Kentucky, March 31–April 3, 2027. We have great news: **the call for presenters is now open!**

As you wrap up the school year, take a few minutes to think about the wins, breakthroughs, and creative solutions you could share. What is working in your classroom, district, program, or organization that would inspire or support other educators across the T&E community?

[Start Your Presenter Application](#)

Your peers are looking for practical ideas, proven strategies, and real-

Technology and Engineering Education News and Resources

Activities, Contests, Student Opportunities, and New Technologies

world examples they can bring back to their own students. You can guide the future of T&E education by sharing your classroom successes, lessons learned, and innovative approaches that make a difference.

Not sure if your idea is “big enough”? If it helped your students, strengthened your program, or solved classroom challenge, it may be exactly what other educators need.

- Professional Learning Sessions (30min, 45min, or 75min)
- Hands on, practical sessions focused on classroom-ready ideas, strategies, tools, research, and implementation.
- Apply by Friday, August 28, 2026

Now is the perfect time to start thinking about the classroom strategies, hands-on learning experiences, research, or program ideas you may want to share.

[Apply now](#)

Flyer at the end of this newsletter.

ITEEA STEM Sparks



Unlocking the Resume: Helping High School Students Build Their First Resume

Brought to you by Landed

One of the most common responses teachers hear when assigning a resume is:

“I don’t have anything to put on a resume.”

In reality, most high school students already have many experiences and accomplishments that belong on a resume. They simply have not learned how to recognize or describe them yet.

Teachers play a critical role in helping students identify, translate, and showcase these experiences.

Helping Students Recognize What Counts as Experience

Students often believe that resumes are only for paid jobs. However, resumes can include many types of experiences, such as:

- School Activities
- Academic Work
- Leadership Roles
- Volunteer Work
- Personal Responsibilities

Helping students understand that these experiences build transferable skills—such as teamwork, leadership, communication, and problem-solving—makes resume building more accessible.

[Read more](#)

ITEEA Recognition Programs

Recognizing the People and Programs Moving Our Profession Forward

Every day, technology, engineering, and STEM educators inspire students, strengthen programs, and shape the future of our profession.

Now it's time to recognize that impact.

ITEEA Award and Scholarship nominations are now open. Nominate a deserving colleague - or even yourself - for one of ITEEA's premier awards and professional recognitions.

Whether you're an experienced educator, an emerging leader, or part of a PreK–12 program, a university, or a school delivering exceptional STEM learning experiences, there's an opportunity to be recognized.

Awards & Professional Recognition

Program & Teacher Excellence Awards

Recognizing outstanding PreK–12 educators and programs at the elementary, middle, and high school levels.

Special Recognition Awards

Honoring ITEEA members whose contributions have strengthened the profession and the association.

Professional Designations

Recognizing members' professional achievements through the Distinguished Technology and Engineering Educator (DTE) and Emerging Leader (EL) designations.

Scholarships & Citations

Supporting future and current educators through scholarships and professional development opportunities.

Nomination Deadline: November 1, 2026

[View Awards & Submit a Nomination](#)

Recognizing Exceptional STEM Schools

The **ITEEA STEM School of Excellence Recognition Program** honors PreK–12 schools, colleges, and universities that provide exemplary technology, engineering, and STEM education.

Schools complete a comprehensive application demonstrating the strength of their integrative STEM program. Applications are peer reviewed.

Eligible Institutions: PreK–12 schools, colleges, and universities

Application Deadline: December 4, 2026

[Learn About STEM School of Excellence](#)

All recipients will be recognized during the **89th ITEEA Annual Conference** in Louisville, Kentucky, March 31–April 3, 2027.

Join colleagues from across the profession as we celebrate innovation, leadership, and excellence in technology and engineering education.



Kevin Sutton, EdD, DTE
2026-27 ITEEA President
International Technology and Engineering Educators Association (ITEEA)

The Kid Should See This

[The Kid Should See This](#)

Smart videos for curious minds of all ages

Here are some selected videos.

- [Shade vs Sun: Summer sidewalk temperatures in Tucson, Arizona](#)
- [How to attack \(and defend\) a medieval castle](#)
- [Sentinel-3: Europe's heatwave seen from space](#)
- [What does a world record firework look like from below?](#)

Who Empties Airplane Toilets? Meet the Airport's Oddest Workers

[Wandertrivia](#)

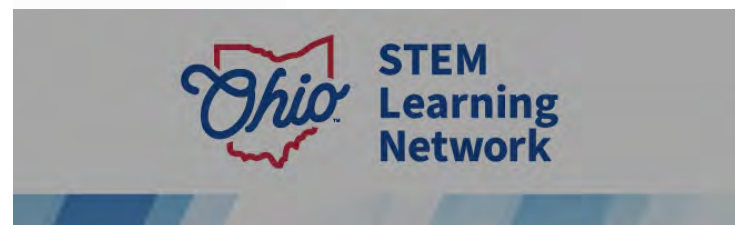


Image: ungvar

Airports are staffed by pilots, flight attendants, clerks, and baggage handlers — but that's only part of the workforce. Airports run on a smoothly coordinated routine featuring a cast of workers you've probably never heard of. There's a person whose job is to chase birds away from runways, experts who calculate the exact balance of an aircraft, and crews who inspect every inch of pavement for tiny hazards. The next time you're waiting at the gate, take a look out the window, and you'll spot one of these surprising airport professionals quietly keeping everything on track.

[Read more](#)

OSLN News



New This Year: OSLN STEM Education Grant Program

After funding 1,094 classroom STEM projects across Ohio over the past four years, the OSLN STEM Education Grant Program, funded by Battelle, is evolving to create even greater impact.

Beginning this year, grants will support schoolwide STEM implementation rather than individual classroom projects, empowering teams to build and sustain STEM learning across an entire building. Schools can apply through one of three pathways designed to meet them where they are in their STEM journey: Ignite STEM, Strengthen STEM, and Innovate STEM.

We've also shifted the application timeline later in the school year, giving school teams more time to plan, collaborate, and launch their STEM initiatives.

Applications open February 2 and close March 29, 2027. The Request for Proposals (RFP) and application preview will be available in January.

Interested in learning more? Join our virtual information session on February 17, 2027, from 2:00-3:00 p.m.

[Learn about the Grant Program and register for the info session](#)

#STEMmakesOhio Design Challenge

Ignite curiosity and innovation in your classroom with the Ohio STEM Learning Network's Statewide Design Challenge! Open to all K–12 schools, this annual challenge invites student teams to tackle real-world problems through hands-on design, testing, and iteration. Participants build critical skills like collaboration, resilience, and problem solving while exploring this year's question: *How can we rethink where and how we make things?* With ready-to-use resources, educator supports, and opportunities to showcase ideas at the state level, the Design Challenge is an engaging entry point for bringing authentic STEM learning to life. [Read more and complete the interest form.](#)

You Can't GPS Your Way to PBL: Why Backward Mapping Is the Real Teacher Shortcut

Annalies Corbin, PAST Foundation, Columbus, Ohio, USA.

In this first installment of our Backmap Series, we sit down with the core philosophy of educational

design. As we gear up for another school year, we're asking a bold question: What if we stopped planning for what we are doing on Tuesday and started planning for who our students will become by next June?

Together, we explore how to move beyond the "Activity Trap" and into a space of deep, intentional learning.

The Great Planning Paradox

Imagine you're setting out on a cross-country road trip. You hop in the car, turn the key, and start driving east. You have a trunk full of great snacks (the "activities"), a playlist of high-energy songs (the "engagement"), and plenty of fuel. But you haven't put a destination into your GPS. You're making great time, but you have no idea where you're going.

In the world of education, we do this all the time. We find a fantastic solar oven project on Pinterest or a "cool" robotics kit, and we build our week around it. We focus on the doing. But at the end of the unit, we look back and wonder: Did they actually master the standards? Did they solve a real-world problem, or did they just follow directions to build a box?

You can't GPS your way to high-quality Problem-Based Learning (PBL) if you don't know the destination first.

What is the Backmap?

The Backmap is a flexible, multi-day/week planning tool designed to help you reverse-engineer your curriculum. Instead of starting with "Day 1: Intro to Physics," you start at the very end of the quarter (or the term of the project you are planning). You start with the Problem or the Issue that students will be asked to solve.

By anchoring your planning in a real-world challenge, you create a natural "pull" for learning. Students aren't learning math because it's on page 42; they're learning math because they need to calculate the structural integrity of the bridge they are designing for their local community.

[Read more](#)



ITEEA Connections

This newsletter strives to present content and opportunities that reflect [ITEEA's Standards for Technological and Engineering Literacy \(STEL\)](#). Many resources including crosswalks, compendiums, articles, and presentations can be found at the [STEL](#) site.

This Week's Technology Tips

Travel Tech Secrets: 15 Must-Know Hacks From Frequent Travelers

[Transit Tomorrow](#)

Travel technology has evolved significantly, with industry experts revealing essential hacks that can transform your journey experience. This comprehensive guide presents 15 practical tech solutions to common travel challenges, from tracking luggage with Apple AirTags to securing better rates through VPN bookings. Drawing from the wisdom of frequent travelers and technology specialists, these strategies offer valuable shortcuts to enhance convenience, safety, and savings on your next adventure.

[Read more](#)

Summer Is the Worst Season for Your Phone Battery. Here's How to Get Through It

[CNET](#)

Summer is the season when most people's smartphone batteries take their biggest annual hit, and most of the damage happens in ways that don't feel like a big deal in the moment. A phone left on a car seat while you run an errand. A device charging on a hot nightstand. Thirty minutes of navigation in direct sun on a road trip. None of it feels catastrophic, and none of it is, until the cumulative effect shows up during September heat waves as a battery that holds noticeably less charge than it did in May. The steps that prevent that outcome are simple and the best time to start using them is before the damage has happened.

[Read more](#)

"People think that design is styling. Design is not style. It's not about giving shape to the shell and not giving a damn about the guts. Good design is a renaissance attitude that combines technology, cognitive science, human need and beauty to produce something that the world didn't know it was missing". — Paola Antonelli

Call for Presenters Now Open!



ITEEA 2027 Annual Conference | Louisville, KY March 31-April 3, 2027

Taking the Reins: Guiding the Future of Technology and Engineering Education

Are you ready to lead the field forward? ITEEA invites educators, leaders, and innovators to share their expertise and ideas at the 2027 Annual Conference. Help shape the future of technology and engineering education by presenting engaging, high-quality sessions aligned with this year's theme.

We're looking for sessions that:

- Inspire innovation in curriculum and pedagogy
- Highlight leadership and advocacy in T&E education
- Promote inclusive, human-centered learning
- Strengthen connections between education, industry, and communities
- Explore emerging and cross-cutting ideas

Step forward. Share your work. Help lead what's next.

Deadline: August 28, 2026



Apply Now

<https://tinyurl.com/ApplyITEEA27>

Learn More

<https://iteea.org/2027>





Whether you're a classroom teacher, teacher educator, student, advocate, or part of a school, district or state—ITEEA is your professional home for advancing technological and engineering literacy for all.

YOUR MEMBERSHIP INCLUDES:

- **Complimentary subscription** to ITEEA's *Technology and Engineering Education* journal.
- **Exclusive members-only newsletter** with tailored news, resources, and savings opportunities.
- **Registration savings** on ITEEA Conferences and events.
- **Awards and recognition opportunities** to highlight outstanding educators and programs.
- **Discounts on ITEEA publications and products** including standards and safety resources.
- **Insurance Perks** including incomparable rates on professional liability insurance starting at \$108/year for \$1 million in coverage.
- **Exclusive member access** to engage in year-round learning, networking, and career resources, including complimentary resume and open position postings.
- **Discounts on Engineering byDesign (EbD)** courses and Professional Learning byDesign (PLbD) trainings and workshops.
- **Exclusive savings on travel, concerts, movies, shopping, and more** through ITEEA MemberDeals.

MEMBER TYPES AND RATES:

INDIVIDUAL

- Professional \$95
- Student \$40
- Advocate \$40

GROUP

- Elementary School \$299*
- Middle/High School \$299*
- District/State \$549*

*All group memberships commence July 1 and conclude on June 30 of the following year.

Scan the QR code or visit:

www.iteea.org/membership



For more information:
www.iteea.org



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Bring STEM to Life!**