

INVENTION CONVENTION WORLDWIDE



Invention Convention Worldwide

Preparing Students with an Inventing Skill Set

Educators are tasked with preparing our children with the skills required for future success and ensuring they succeed in their own lives as well as members of society. This task becomes increasingly challenging as the future becomes more unpredictable. Technologies are advancing at an unprecedented rate, industries are disrupted while new ones are created, and we face a future of complex problems, from climate change to social injustice.

The STEMIE Coalition believes that empowering students with an inventing skill set is an increasingly effective way to for educators to accomplish these tasks. Along with STEM and entrepreneurship, the skill to invent is necessary to create the innovative, empathetic, and productive workforce that the future will demand. In response, the STEMIE Coalition looked for a way to make invention education accessible to all students and educators through a flexible model and broad geographic scope. This required reaching students in classrooms and beyond, and empowering a community of educators and local supporters.



The STEMIE Coalition supporting invention and entrepreneurship education for K-12 students and creating a community of practice through real-world problem solving.

Invention Convention At-A-Glance

- In-School & Out-of-School Program
- Launched in 2019
- 35 Events a year
- 120K+ students participate annually

In 2019, the STEMIE Coalition launched Invention Convention Worldwide, a global program that immerses students in learning through inventing. The program was created with the flexibility to work in various educational settings and structured to easily scale. Each year, more than 35 events are held around the world, engaging more than 120,000 student participants.

The Invention Convention Experience: Learning Through Invention

The Invention Convention is a K-12 educational program that immerses students in the process of inventing and celebrates their accomplishments through a culminating event, all while connecting them to a broader community of support and inspiration. Throughout the experience students learn critical skills, discover their potential and develop the skills needed to invent their future.



More than 500 award-winning K-12 inventors from across the world gathered at the Henry Ford Museum of American Innovation in Dearborn, Michigan, on May 30-31 to compete for top awards at The Henry Ford's Invention Convention U.S. Nationals.

The program is accessible to all students everywhere through a free, project-based curricula. The invention experience can be brought to life in a variety of ways, such as integrated into existing classroom learning and celebrated with a school-wide Invention Showcase, or as a STEM Club activity at an afterschool program that creates opportunity to compete in a regional Invention Convention competition. While the program is flexible, efforts are aligned around common principles that put students at the center of their own learning. The curricula follows the seven step Invention Process which includes Identifying, Understanding, Ideating, Designing, Building, Testing, and Communicating. All programs begin with students identifying a problem they want to solve, a critical step that makes the experience more personal and relevant, and culminates with an Invention Convention event where students display their inventions and, more importantly, the inventive skills they have learned along the way, such as critical thinking, creativity, empathy, and technical know-how.

Six Core Tenets of Invention Education:

- 1 **Context**
Invention Education Philosophy
- 2 **Empathy**
Real World Problem Identification, Definition, & Collaboration
- 3 **Problem Solving**
Prototyping, Tools, Techniques, & Documentation
- 4 **Continuous Learning**
Characteristics, Skills, & Mindsets
- 5 **Iteration**
Community of Feedback & Culture of Iteration
- 6 **Sustainable Innovation**
Entrepreneurial Exploration, Go-To-Market Evaluation, Intellectual Property, Economic Impact, & Sustainability

Environmental Sustainability & Diversity, Equity & Inclusion are the Foundation Core for Implementation

[Download the Invention Education Framework to learn more](#)

Past Invention Convention winners include a 4th grader who invented a Measuring Shovel, that enables users to measure the depth and width the hole they are digging while shoveling and a 10th grader who created a Fire Hydrant Alert System that uses an ultrasonic sensor that alerts drivers when they park too close to a hydrant. The goal is not the real market viability of the inventions themselves, but rather that the students have discovered their capacity to invent, unlocking their potential to create a brighter future for themselves and others.

Building an Invention Education Community

The Invention Convention's success and growth comes from developing a broad ecosystem to support invention education. The program is designed around a community support and affiliate model, that works together to develop curricula, offer resources and support, and grow the community. The Invention Convention curricula is open-access so essentially every K-12 student may have access to it. It is also aligned with Common Core and Next Generation Science Standards, ensuring that educators can integrate into their existing teaching efforts while meeting other teaching objectives.

"Invention Convention taught me not to limit myself. As kids, we have our imagination and ideas. We don't have to be an adult to change the world."

-Jianna Nichols, serial inventor, Ohio

Educators are key to the success of the Invention Convention program. The program is supported by professional development opportunities that teach the principles of invention education and provide educators with the tools to bring the Invention Convention to their students. These opportunities and other resources are provided by the STEMIE Coalition and Affiliate Invention Convention programs, and range from day-long workshops to online self-paced instruction. Educators also have access to a wide array of resources to help make implementation easy, such as curricular resources, videos, ideas and mentors.

Finally, culminating Invention Convention events offer an inspired place where this collective community of students, educators, supporters and other innovators gather together to celebrate invention and the possibilities it opens for students and society. While the future is uncertain, it's clear that when inspired and empowered people come together we can invent a better way forward.

Invention Convention Impact

- 35 events annually
- 120,000 students participate annually
- Over 57% of participants are female (since 2016)
- Over 25% of participants represent minority communities (since 2016)
- Approximately 500 students invited to participate in Nationals each year (since 2019)
- Over 58% of winners at Nationals are female (since 2019)
- Over 47% of winners at Nationals represent minority communities

Learn More about Invention Convention

Visit <https://inventionconvention.org>

"Every failure you learn something, and finally when you succeed it feels amazing. Try, try, try.... and keep trying."

-Lino Marrero, inventor of Kinetic Kickz, Texas

"Young inventors think of solutions to problems that could really improve someone's life."

-Jesse Bouchard, inventor of the ThermoCup, Maine