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## 2023 FACILITIES & CONSTRUCTION BRIEF



GREEN ROOFS  
EXPAND MINDS AND  
OPPORTUNITIES

—  
USING PARTICIPATORY  
DESIGN TO CREATE A  
STUDENT-CENTERED  
LIBRARY

—  
HOW ESSER FUNDS  
CAN HELP WITH  
HVAC UPGRADES

# BRINGING STEAM TO LIFE IN THE K-12 CLASSROOM

By John Peretz

WHAT IF YOU COULD APPLY CRUCIAL STEAM concepts in a way that engages students like never before? That was the goal when Inventionland Education created its K-12 curriculum.

In the Inventionland Innovation course, students work in small groups to find a problem and create an invention to solve it. It follows a real-world, proven, 9-step method used at Inventionland, one of the world's largest invention factories.

The course puts students in charge of their education, opening up a new world of creativity, innovation, and inspiration rarely found in other classes.

Along the way, students learn crucial soft skills like problem-solving, collaboration, and presenting. The course culminates with an invention contest, where students pitch their idea to



panelists.

The course allows students to learn new skills that prepare them for college, careers, and real life.

## **Authentic Industry-based Learning**

In addition to learning the process of innovation, students get valuable exposure to various STEAM careers such as engineering, structural package design, electronics, communications, and more.

In addition, Inventionland Education allows students to engage with working professionals through its virtual mentoring program.

## **Educator Perspectives**

According to Karen Garland, who co-teaches the Inventionland course at Grove City Middle School in Pennsylvania, "There's excitement from parents. Parents hear about these inventions. And when something gets home to the parent, and when parents say 'My child is talking about school at home?', that's a home run, especially in middle school."

Mr. Larry Connelly, Principal of Grove City Middle School, explained, "I have found over the last several years that it is probably the greatest program that we currently have in Grove City Middle School in terms of student engagement, student enthusiasm, and student outcomes for so many skills they learn along the way. Not many classes have that kind of enthusiasm leading into it."

Dr. Joshua Weaver, Assistant Superintendent of Grove City Middle School, states, "As far as the curriculum in this program and its connection to STEAM, it's truly impressive. In watching a



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student work with their peers and teachers in a cross-disciplinary approach in this building, the science is there all day long. Why should other schools get involved? This is a tremendous program that, compared to our overall school budgets, doesn't cost a lot of money and provides students with an experience that I think is difficult to create in other disciplines."

### **Student Outcomes: Actual Licensing Agreements**

In the past year, two eighth-grade students from Grove City Middle School (Mia Mertz and Madison Mulato) saw their invention earn a license to bring their product to market after participating in their invention contest.

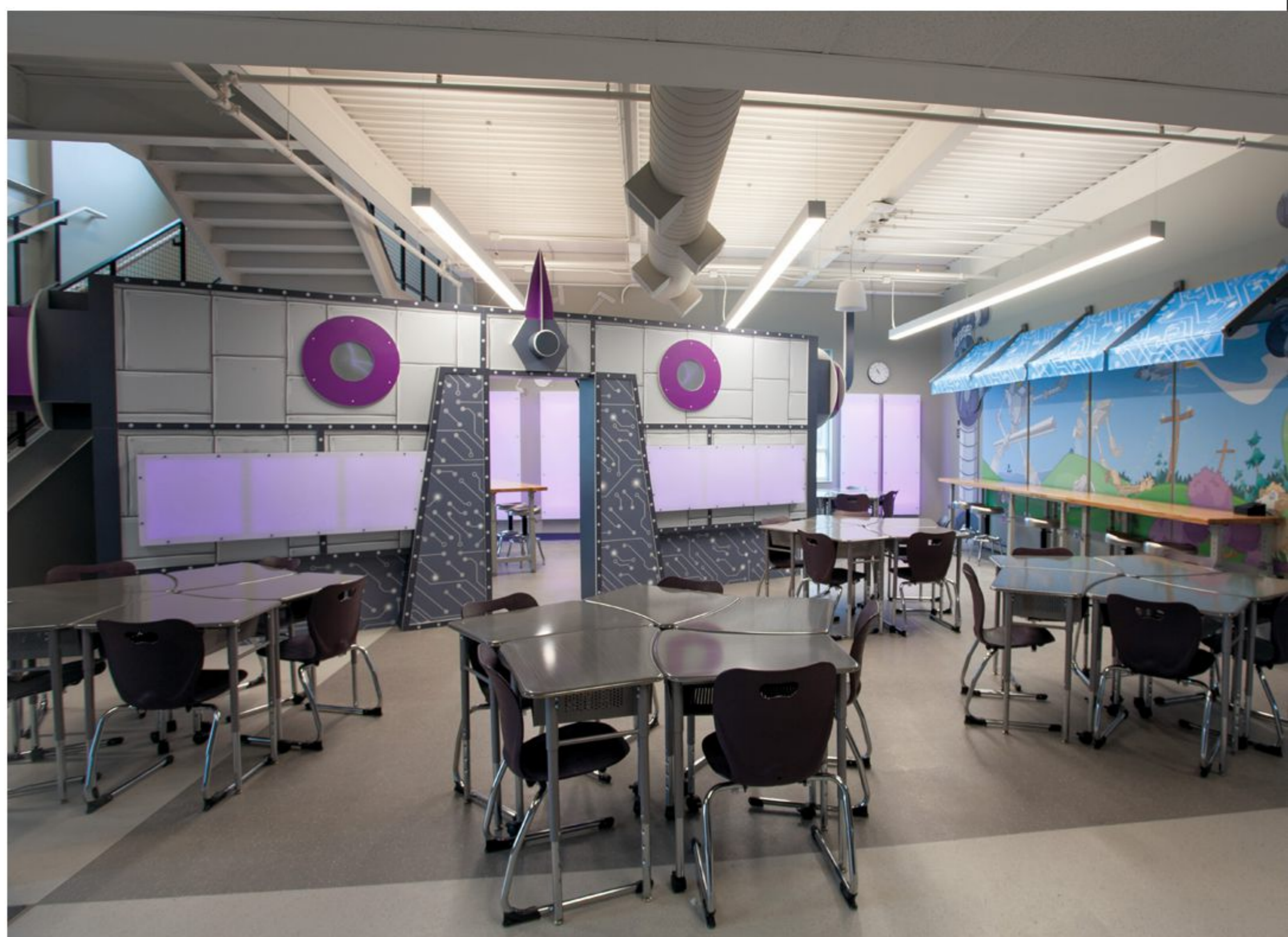
Likewise, a team of international Inventionland students from Jordan participated in the Youth Innovation Project and earned a licensing agreement for their developed product. It was co-sponsored by Amideast and the Jordan Ministry of Youth.

Both sets of products will be available for purchase in 2023.

### **Immersive Innovation Labs Bring it All Together**

Inventionland Education works closely with schools, designers, and architects to design, construct, and install award-winning

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Innovation Labs.

These incredibly creative, age-appropriate maker spaces are thoughtfully designed for STEM and project-based learning environments as a classroom within a classroom.

Innovation Labs can transform old, underutilized spaces or be used in new school construction. Inventionland Education works within your budget to create unique collaborative spaces with room for learning and making.

Examples include kindergarten Log Cabin sets, the Storybook Forest, Inventalot Castle, Chipper's Treehouse, Discovery Pirate Ship, Inventron Robot, Tiki Tech Bar, and Bright Ideaz High School Innovation Labs.

Inventionland Education continues to win prestigious awards for its Innovation Labs, including the Edison Design Bronze for work with the Seneca Valley School District. It was the first time an educational institution won an Edison award, joining other winners, including Steve Jobs and Elon Musk.

Recent work has also garnered awards from Spaces4Learning magazine for work with Berkshire Local Schools in Burton, Ohio. As their Superintendent, John Stoddard said, "It's hard to be creative when you sit in a grey box all day long."

### Professional Development for STEM and Maker Spaces

To augment its K–12 innovation curriculum and immersive Innovation Labs, Inventionland also has a complete set of professional development courses to educators involved in STEM,

maker spaces, and project-based learning.

This includes the popular three-day maker technology training to single Days of Innovation. Training also includes

topical workshops such as 3D printing, vinyl cutting, plasma cutting, laser cutting, electronic kits, prototyping with cardboard, stop-motion animation, video production, logo and package design, working with silicone, and prototyping with blue foam.

Deep learning goes well beyond the instruction manuals, providing educators with the skills to confidently instruct students on using maker machines safely in the

classroom. Professional development can be delivered in person or virtually.

### Moving STEM, STEAM, and STEMM Forward

Inventionland Education is a member of the elite leadership council of the STEM Education Council, along with other blue-chip companies, representing the broadest and most unified voice in advocating for policies to improve STEM education at all levels.

And recently, Inventionland joined the STEMM Opportunity Alliance, a new national initiative to provide equitable access to STEMM education to transform the STEMM ecosystem.

**John Peretz** is an education writer that focuses on immersive maker spaces and the STEM ecosystem in K–12 schools. His work has been featured in major publications and portals throughout North America.