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## KID Museum Taps the Power of Youth and Creativity to Transform STEM Learning in the DC Region

Among the robots, rockets, and dazzling stage shows on display at this year's USA Science and Engineering Festival in Washington, DC, local students will present one of the most cutting edge innovations of all: a new approach to STEM learning that is having a transformative impact on the community's approach to STEM education — and most importantly, on the students themselves.

At KID Museum's booth in the Makerspace Pavilion, middle school students from Montgomery County Public Schools (MCPS) will present prototypes of inventions they have designed and built to protect the planet. And while the inventions themselves are impressive, the real story on display is their journey as inventors and makers — and the innovative district-wide program that has built student identity as STEM leaders of the future.

Coupling creative problem-solving and hands-on, "maker-based learning" with STEM, KID Museum and MCPS have partnered to provide powerful learning experiences that can't be found in any textbook, and are too often missing in our schools. In the 2017-18 school year, the museum and schools launched the first-of-its-kind, year-long program for middle school students structured around a community-wide invention challenge. Students developed technical skills in design, fabrication, electronics and coding during sessions at KID Museum, applying critical thinking and creative problem-solving to real-world problems. In the process, they drive their own learning and build confidence in their creative potential.

"At school, it's all about doing things on paper," says Milan, a 7th grade girl from Argyle MS who will presenting her prototype robotic bees (to help with the declining bee population) on April 6. "At KID Museum, you get to make what you imagine. We get to bring our projects to life."

The Challenge builds on a pilot program that demonstrated exceptional results compared to other STEM programs nationally. An evaluation conducted in partnership with Harvard University's PEAR Institute showed that KID Museum's Invention Programs for middle school students led to greatly increased STEM outcomes as well as improved social-emotional skills, exceeding national averages for similar programs in all categories. Among the most notable results: 93% of participants showed improved science interest (compared to national average of 80%) and 90% showed improved critical thinking skills (compared to national average of 78%).

"STEM alone isn't enough," says Cara Lesser, Founder and Executive Director of KID Museum. "This is about more than STEM, it's about giving kids a foundation for success in the future economy — and empowering them to make a difference in the world."

More than 500 middle schoolers are participating in the Challenge in the current school year, and KID Museum and the schools expect to expand significantly next year, including a pilot program for elementary school students. Professional development will also be vastly expanded in the coming year, providing educators with tools and training to support hands-on, maker learning in classrooms. These initiatives ensure that high-impact programming reaches kids countywide, and in particular, those traditionally underrepresented in STEM fields (girls, minorities, and children from low-income families).

Jack Smith, Superintendent of MCPS, explains: "Partnering with KID Museum is part of our strategy to ensure that every one of our kids is college and career-ready. KID Museum provides a unique opportunity for students in Montgomery County to experience the kind of high-quality, hands-on learning that is key to their success."

"The students who've been a part of this program are often the ones that fly under the radar." says Stephanie Seo, STEM Team Leader for Parkland Middle School, which has been a part of the KID Museum invention program for four years. "But here, in this program, they're given a chance to shine."

## **About KID Museum**

KID Museum is an independent, mission-driven nonprofit serving 55,000 people annually in its creative learning space, on-site at schools, and at community events. A national leader in maker-based education, the museum seeks to spark the creative potential of all children, and inspire the next generation of innovators. Core to its mission is ensuring that all youth, especially those who are traditionally underrepresented in STEM fields, have access to transformative learning opportunities that will pave the way for their future success — and the shared success of our community. For more information, please visit <a href="https://www.kid-museum.org">www.kid-museum.org</a>.