

Maker Ed

**ANNUAL
REPORT
2017**



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Letter From The Executive Director

Hello friends,

So often in non-profits or social change efforts the day to day is spent looking forward. What are the problems we have yet to solve? What is the impact we haven't had that we want to? With global political uncertainty, working to solve the challenges of teaching and learning feel ever more pressing... what is the world we are preparing students for? Even with the urgency that surrounds our daily work, it is important to pause and reflect on where an organization has been successful, and what it has accomplished.



Maker Ed marked its fifth anniversary in 2017, had numerous leadership and staff transitions, and yet maintained a laser focus on supporting the development and training of teachers and educators around the country. In addition to supporting teachers, Maker Ed has been collaborating with partners nationally to tackle the perennial challenge of assessment.

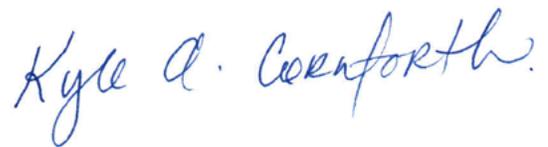
Whether it's called 21st century skills, social and emotional learning, or non-cognitive development,

a focus on skills like collaboration, communication, agency, curiosity, empathy, and problem-solving are increasingly touted (and backed by research) as the most important qualities employers look for. More importantly, in the current political context and the opportunities and challenges that come with globalization, we want to ensure a generation of students who are active in civic engagement, empathic, and passionate about creating a more inclusive and vibrant world.

It has been a big year of change for Maker Ed, and I am excited to share the work of our small and mighty organization. There are great strides that have been made in the training and support of teachers, building a community of maker-educators, and developing tools to measure impact.

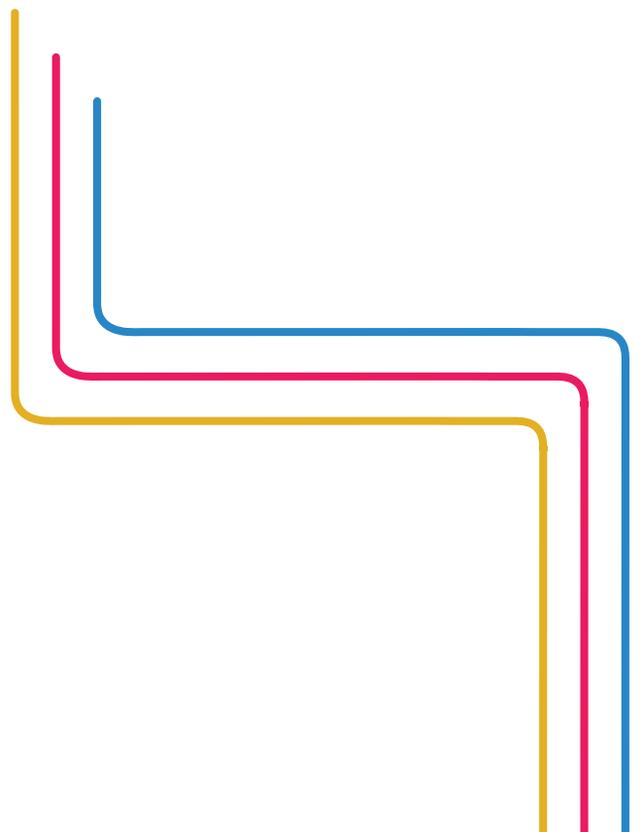
Please join me in reflecting on our accomplishments, with, as always, huge gratitude to our partners and funders, and especially the teachers around the country who are making our work possible. While we celebrate our accomplishments, we continue to look to the future. We will be launching a new strategic approach with programmatic and advocacy initiatives in 2018 and are working hard to refine our efforts to be a bold leader for innovation and growth in education.

Onward, as ever!



Kyle Cornforth

Executive Director



Maker VISTA

Through the generous support from the Corporation for National and Community Service, the Maker VISTA program focuses on overcoming poverty through maker education.



Maker VISTA members serve year-long in high-need communities across the nation to build capacity and impact through partnership development, volunteer facilitation, resource creation, educator training, and much more.

The marriage of service and making that the Maker VISTA program models continues to guide the intentional shaping of culture and practice at a variety of communities: elementary, middle, K-12 schools; colleges; libraries; and non-profits. The start of 2017 saw the Maker VISTA program continue to support 16 VISTA members at 11 sites in successfully completing a year of service to deepen the exposure and connection to making within more communities across the nation, our fifth programmatic year launched in August 2017 with 4 new Maker VISTA sites. Our VISTA members embarked on a journey leading them through discoveries one might experience while tinkering and iterating in a Makerspace or Wonder Workshop, such as, how can we encourage making in subjects like history and English?

How can we better question and stay vigilant with the language we use to talk about making?

How do we build sustainability into our programs when the day-to-day work is so demanding? Brimming with these inquiries and guided by Maker VISTA Site Supervisors (read: superheroes) teams of seasoned insiders and newcomers came together to invest collaboratively in shifting a community's practice towards being more learner-driven, while expanding opportunities for everyone in the community — students, parents, faculty and staff — to grow and learn together.

Through co-developing maker projects alongside history teachers to meet curriculum standards; adapting language to reflect cultural differences between rural and urban communities; prototyping daily practices to build little-by-little into sustainable systems, Maker VISTA sites have contributed to the capacity

of their local communities as well as within our larger maker community. In April 2017, the teachers involved in Maker Education/Project Based Learning at VISTA site Lighthouse Community Charter School decided to focus on the driving question, “How do we share our knowledge of health and wellness for others by producing, packaging, and marketing a product for a farmer’s market?”

In support of the teachers’ curriculum for this unit, Maker VISTA member Crystal Le reached out to the Agricultural Institute of Marin (AIM), a group that oversees a number of local farmers markets in the Bay Area. Crystal secured and coordinated a site visit and interactive assembly presentation to 150 2nd-5th grade students, where they learned how to set up their own farmer’s market stands, advertise their products, handle money and about seasonal fresh food. The students left the assembly with a greater understanding of how to run a farmer’s market and used what they learned from this presentation to inform the design and setup of their own stands at the first student-run Farmer’s Market in May 2017.



Making Spaces

In collaboration with the Children’s Museum of Pittsburgh and supported by Google, the Making Spaces program brought its first cohort of hubs on board for the 2016-2017 school year. Cohort 2 began its first year in the summer of 2017, kicking off the 2017-2018 school year. With 10 hubs as part of Cohort 1 and 5 hubs as part of Cohort 2, the program is proving to be a sustainable model for integrating making into schools. Our 15 hubs around the country—ranging across museums, libraries, districts, community-based organizations, and county offices of education—each provide support, aligned with a toolkit and train-the-trainer workshops we lead, to 5-10 schools in each of their regions.

Each school’s crowdfunding campaigns in 2017, resulting from a thorough visioning and planning process, brought in almost \$400,000 in new or shifted funding.

Making Spaces runs along a 2-year model, where year 1 is focused on vision and planning and year 2 is focused on implementation.

Our first cohort of 10 hubs had such successes and growth that a few hubs have leveraged the work to create new partnerships that will take them through 2020! Two of our Cohort 1 hubs—the Bubbler, as part of Madison Public Library in Madison, WI, and the Scott Family Amazeum, based in Bentonville, AR—had such successes and expressed need from their communities that they onboarded a new group of schools in the second year as well.



Maker Corps

Maker Ed's first and founding program, Maker Corps, completed its final season in 2017. Throughout its five years in existence, the Maker Corps program hosted a community of support and provided professional development to more than 800 program participants at 120 organizations across 21 states and 4 countries as they designed and developed maker-centered summer programming. Supported throughout its history by Cognizant, as well as, more recently, by Chevron, Maker Corps supported organizations in leveraging the fresh ideas and inspiration of Maker Corps Members, or summer makers-in-residence.

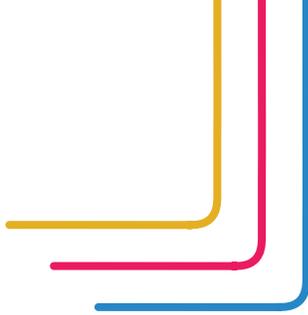
Over the past 5 years, the work of Maker Corps reached more than a quarter million youth and families through summer programming at educational organizations in communities all over the globe.

When we first started the work, maker education was nascent, and a large majority of our training and support connected to “getting started” activity and project ideas, material and equipment acquisition, facilitation of hands-on, learner-driven programming, and the integration into other organizational efforts. We grew alongside other fantastic organizations, museums, and innovative summer school programs. Since then, the landscape of maker education has shifted and evolved.

In the fifth and final year of Maker Corps, our support looked different: it focused on program evaluation, the arc of visioning and implementation, and sustainability. This reflected the nuances and changes in maker education as it evolves, coupled with the specific needs of our partners. The experience of Maker Corps has provided the foundation of our overall work, and we look forward to building on those learnings and iterating on them through our newest efforts!

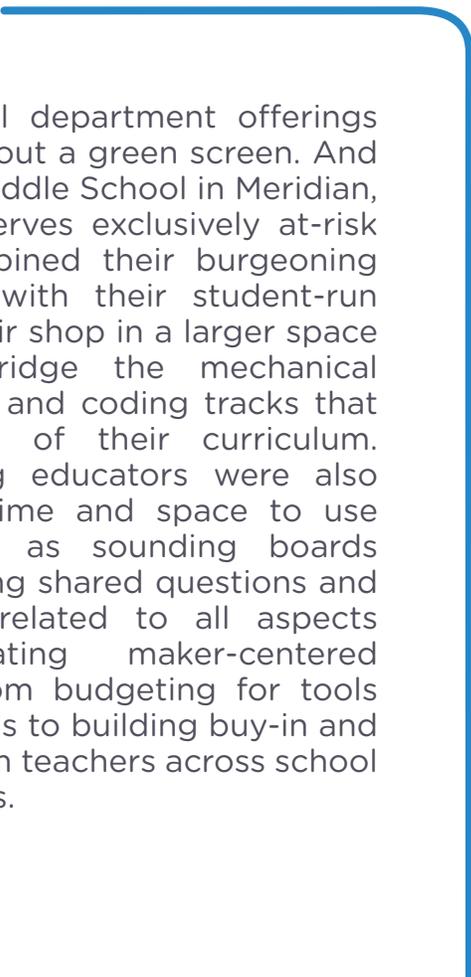


Special Projects



One of the most exciting things about working in the social change sector is the opportunity to try out new ideas for creating change. For Maker Ed, the past year brought many opportunities to explore projects that could help push our thinking and evolve our theories about what kind of work would have the most impact. This year, we worked in partnership with some incredible thought and funding partners, allowing us to train more teachers through Verizon's Innovative Schools program, to scale a program nationally for after school providers, and to respond to the needs and demands of teachers around the country through resource development. We are looking forward to integrating some of these explorations into the core efforts of our work in the coming year.

Verizon Innovative Learning Schools



In 2017, Maker Ed teamed up with Verizon's Innovative Learning Initiative to offer ongoing training and support to 50 classroom teachers, school librarians, instructional technology coaches, and principals representing 18 elementary and middle schools from across the United States as each plotted out spaces and programs for making on their campuses and in their classrooms. Combining a two-day in-person kick-off workshop with monthly support calls, Maker Ed thought-partnered with participating educators to shape visions and goals for maker-centered learning that responded to the unique needs of each school community. Dr. Martin Luther King Literary and Fine Arts School in Evanston, IL, for example, focused on expanding pre-existing

Audio/Visual department offerings by building out a green screen. And Pathways Middle School in Meridian, ID, which serves exclusively at-risk youth, combined their burgeoning maker lab with their student-run bicycle repair shop in a larger space to help bridge the mechanical engineering and coding tracks that define part of their curriculum. Participating educators were also given the time and space to use each other as sounding boards when tackling shared questions and challenges related to all aspects of integrating maker-centered learning, from budgeting for tools and materials to building buy-in and support from teachers across school departments.

Many schools, for example, shared the clever ways they were able to secure materials and supplies for little to no money through donations, community partnerships, and even other school departments.

As Maker Ed wrapped up its time with Verizon, all the schools were designing ways to showcase student work coming out of the first iteration of their spaces and programs in an effort to generate the excitement which will continue to propel these schools forward.

Young Makers

Maker Ed took our Young Makers model to national afterschool providers. In partnership with the Lemelson Foundation, our partnership with the Boys & Girls Club of America, Girl Scouts of Northern California, and others introduced maker education with a lens on how making and invention connect. We worked closely with afterschool providers to deepen their understanding and practices. With Cognizant's support, our work

with the Boy Scouts of America concluded in a 5400-sq-ft pop-up makerspace at the National Jamboree in July 2017 in the woods of West Virginia and exposed more than a thousand scouts and leaders to making. From drone flying to patch sewing, many scouts spent a full day at the makerspace, and upon reflection, one noted:

“I love that your creations are truly your own. Everything that is made here entirely comes from the minds of all of the scouts who enter through these doors. I love the sense of independence, confidence, and creativity that it provides.”



Resource Creation

Maker Ed added several new resources and modules to our library through work we did in 2017, including:

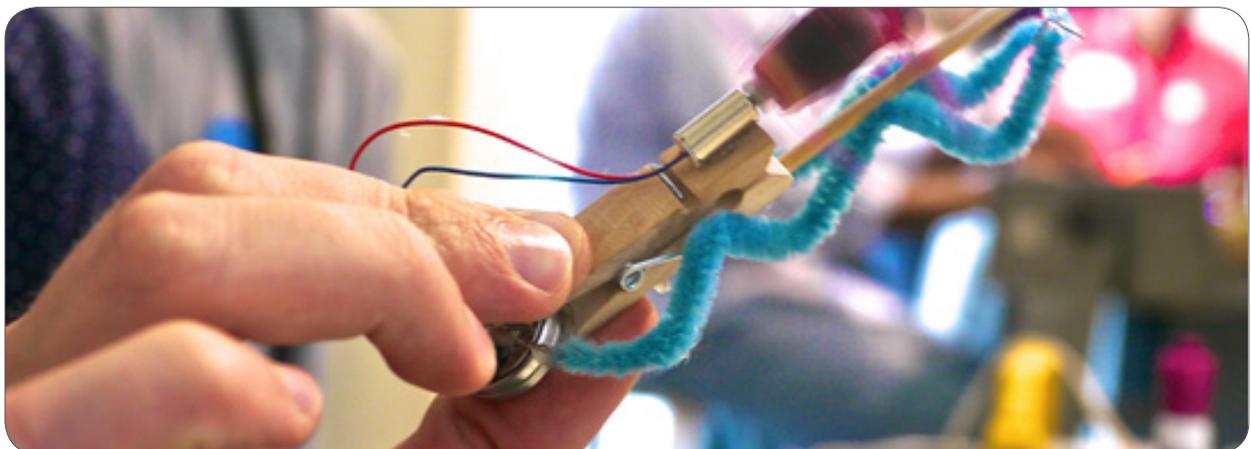
Tinkering Workshops with Educators (Supported by Infosys)

Maker Ed’s [“Tinkering Workshops with Educators”](#) guide supports those seeking to provide professional development workshops for educators in tinkering, ultimately empowering educators to see themselves and their learners as makers and collaborators. Instead of an exacting recipe, this guide serves as a resource and source of inspiration to support relevant and customizable ways of providing impactful making experiences. The guide includes big picture themes, such as: topics to focus on, practices

to use, and other considerations to contemplate when setting up a workshop. Additionally, it provides concrete information from suggested formats and schedules with practical tips, to approaches and suggested

Language: Building A Prompt (Supported by the Lemelson Foundation)

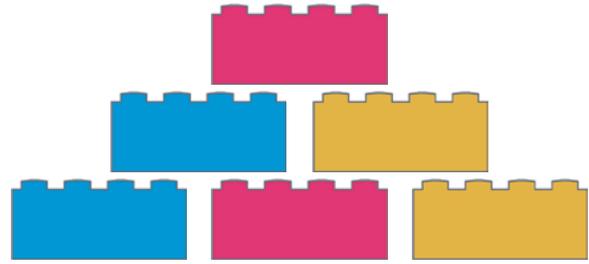
[This module examines the language of prompts.](#) How does the phrasing of a “challenge,” “question,” “directive,” or “task” translate to action? Do certain words make the activity more accessible? Do other terms inspire? Intimidate? We consider how wording, context, structure, and language affect the intention and goals embedded in a seemingly-simple sentence.



Program Planning: A Young Makers Season

(Supported by the
Lemelson Foundation)

We have refined a flexible club model—called “Young Makers”—that can be adopted, adapted, and integrated into any existing or new programming, typically engaging youth in “maker clubs” to create youth-driven projects that are presented at a culminating showcase event. This model is ultimately applicable to any sort of maker-based learning effort, whether in school or out of school. [This module includes three key resources that show what the arc of a season could look like and the key elements to consider.](#)



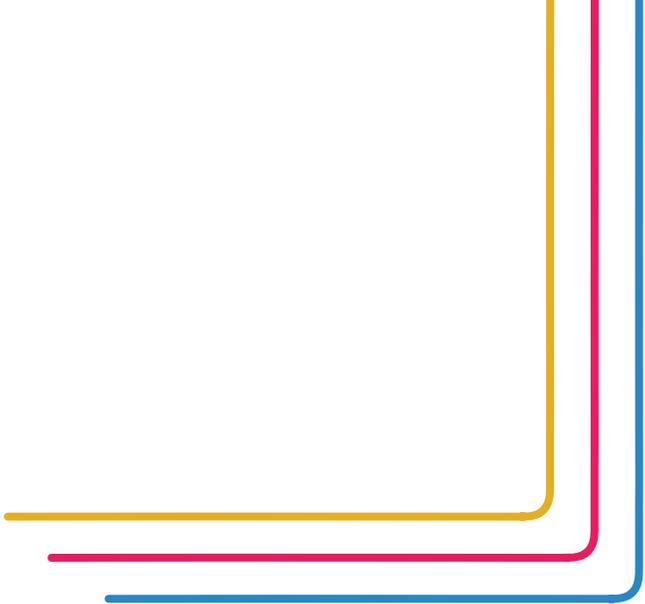
Facilitator Tips

(Supported by the
Lemelson Foundation)

One of the most common challenges we come across is: how do we, as educators, step away from the role of knowledge-provider, sage-on-the-stage, and teacher-centered deliverer and grow into facilitators of learning, happily standing on the sidelines to guide, coach, and support? [We bring together a collection of resources that provide tips & tricks on how that looks.](#)



Building Advocacy Networks



Maker Ed has emerged as a thought leader and movement builder for a national and international effort to integrate making into classrooms. While we have much we hope to develop in this arena, our efforts have produced learning and reflection on the most important and effective ways to support teachers in planning for class on Monday morning, while also working towards a larger goal of embedding making in schools everywhere.

One thing is clear: teachers can (and want to) support each other, and getting them together to collaborate, share challenges and successes, and tell the story of how making is shifting educational practice is vital to building an effective network.

Our efforts include the blending of in-person convenings and online tools and strategies for staying connected. We know, that all around the country, teachers are keeping in touch to support each other and move making forward!

Maker Promise



Run in partnership with Digital Promise, Maker Promise is a campaign to equip more schools with the resources and support they need to provide quality maker learning experiences for their students. As part of this effort, we are challenging school leaders, educators, and community advocates to commit to being a champion for making by developing opportunities for students to learn through making; creating and supporting spaces for making; and showcasing what students create. Maker Promise signers gain access to resources to help them advocate for and facilitate making in their schools and communities, including a bi-monthly blog, and stipends for hosting meetups.

Events

Maker Ed's flagship event, the **Maker Educator Convening**, continued strong into its 3rd year. Over 3 days in May 2017, we hosted more than 270 educators and practitioners from around the country at Autodesk and Galvanize in San Francisco, CA. In addition to the workshops, presentations, and demonstrations, we also hosted the Leadership Summit, a first-of-its-kind gathering of leaders and influencers in the maker educator world. Invitees shared their thoughts and insights about the future of maker education, and participated in collaborative activities meant to help envision the next 5 years of the maker movement. Maker Ed also celebrated its 5-Year Anniversary during the Convening's opening reception.

The overwhelming support for the event, from both participants and funders, has motivated us to continue expanding and improving our offerings, and we have ambitious plans for our next Convening, taking place in October 2018.

Additionally, Maker Ed staff members attended over 20 conferences and events to share and celebrate Maker Ed's work with educators, researchers, and funders in the maker movement. Conferences represent one of the best ways for staff to spread the word about the work we do, make new connections, and strengthen existing partnerships.

With no substitute as good as in person, human interactions, we also hold the space of asking hard questions and pushing the field of maker education forward.



Research & Evaluation

If we are asking teachers to shift traditional classroom structures and practices, how do we evaluate these efforts?

If we are exploring how to ensure our nation's children cultivate rigorous academic lives but also develop vital skills for their humanity, how do we know making is an effective tool? How do we solve the perennial challenge of measuring a person's curiosity? We know we need to make learning visible in these contexts in ways that we can't get at with standardized testing. We therefore continue to build on our research, experimentation, and implementation of evaluation efforts that reflect a child's learning process, checking for progress along the way and deeply investigating bodies of work that can show more expansive evidence of how and what youth are learning. This is critical for our work and the field moving forward, and we will be building on our success and research, always with the goal of making our tools and findings freely accessible and adaptable.



Open Portfolio Project

The Open Portfolio Project, in collaboration with Indiana University and funded by the Gordon and Betty Moore Foundation, concluded its second and final phase of work in late 2017 and early 2018. With more than 4 years of work, we have developed a deeper understanding of how portfolios can be used in maker environments as a performance-based assessment technique. Phase 2 of our work explicitly explored portfolios as assessment, the tensions and needs across learning environments, the youth and educator motivations that propel the work forward, and the concrete practices needed for authentic implementation.

Portfolios are a compelling means for capturing the evidence, and we continue to determine how that is done in the most effective ways. Findings of the Open Portfolio Project are captured and published in a number of publications: numerous journal papers, conference proceedings, practitioner-facing

workshop offerings, a Digital Portfolios online course on KQED Teach, the full Research Brief series from Phase 1, the full Research Brief series from Phase 2, the Practical Guide to Open Portfolios, and a portfolio journey map, [all available on our website](#).

We continue to grapple with the bigger questions surrounding the outcomes of maker-centered learning and the evidence of learning that reinforces our anecdotal findings:

Maker education does indeed act as a vehicle towards authentic, learner-driven, open-ended experiences that build character, creativity & confidence.



Beyond Rubrics Project

The Beyond Rubrics project, in partnership with MIT's Teaching Systems Lab and supported by the National Science Foundation, kicked off in late 2017.

The overall goal of the effort is to develop a set of embedded assessment tools and practices for maker education, specifically integrated into middle school classrooms.

In the spring and summer of 2018, we will be co-designing workshops and assessment tools with two school districts (Portola Valley School District in CA and Albemarle County Public Schools in VA) Ideally, assessment is ingrained in all elements of curriculum, lesson plans, content standards, and learning and teaching practices. It can also be playful! We hope that these co-designed tools and techniques will allow teachers and students to better identify, track, and elevate the evidence of learning outcomes in any maker-centered effort.

The workshops will develop a better shared understanding, between all involved, of what kind of assessment needs exist within the blend of traditional middle school classrooms and more open-ended maker environments, how to share the formative & summative efforts with parents, and how to situate youth to play a larger role in self- and peer-assessment. Our tools will also be tied to consistent learning constructs in maker environments so that we can be looking simultaneously at content knowledge and soft skill development.



Acknowledgments & Gratitude

2017 Sponsors & Funders

Maker Ed's work would not be possible without the ongoing support of our sponsors, funders, and partner organizations. In particular, we would like to thank the following institutions and individuals for their support of making and maker education:

Changemaker (\$450,000+)

Gordon & Betty Moore Foundation*

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Google*

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Chevron
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Champion (\$50,000 - \$99,000)

The Lemelson Foundation
Nancy C. & Dale Dougherty Foundation
Verizon Innovative Learning

Advocate (\$25,000 - \$49,000)

The Corporation for National & Community Service

Igniter (\$15,000 - \$24,999)

LRNG / The National Writing Project
Autodesk
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Intel
MakeyMakey

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**Multi-year grant*

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