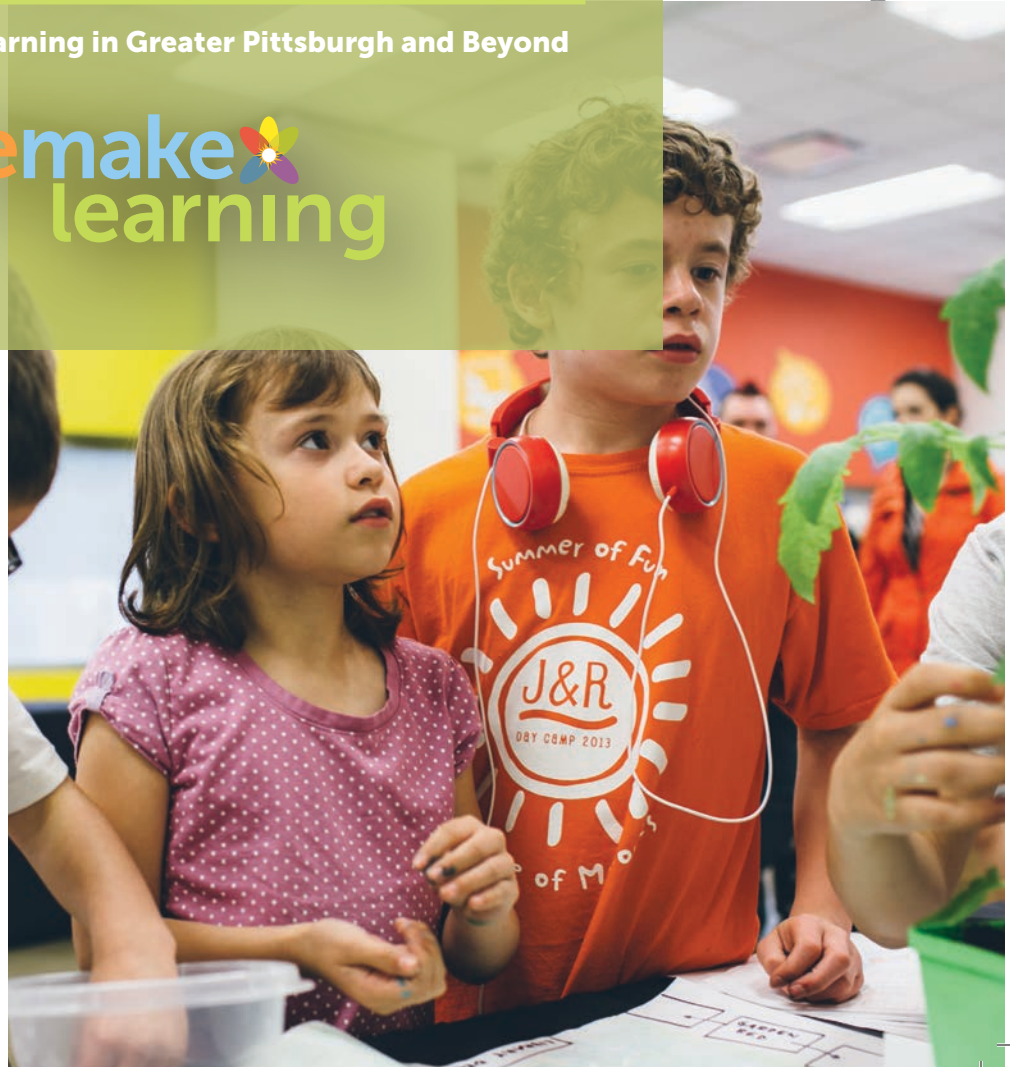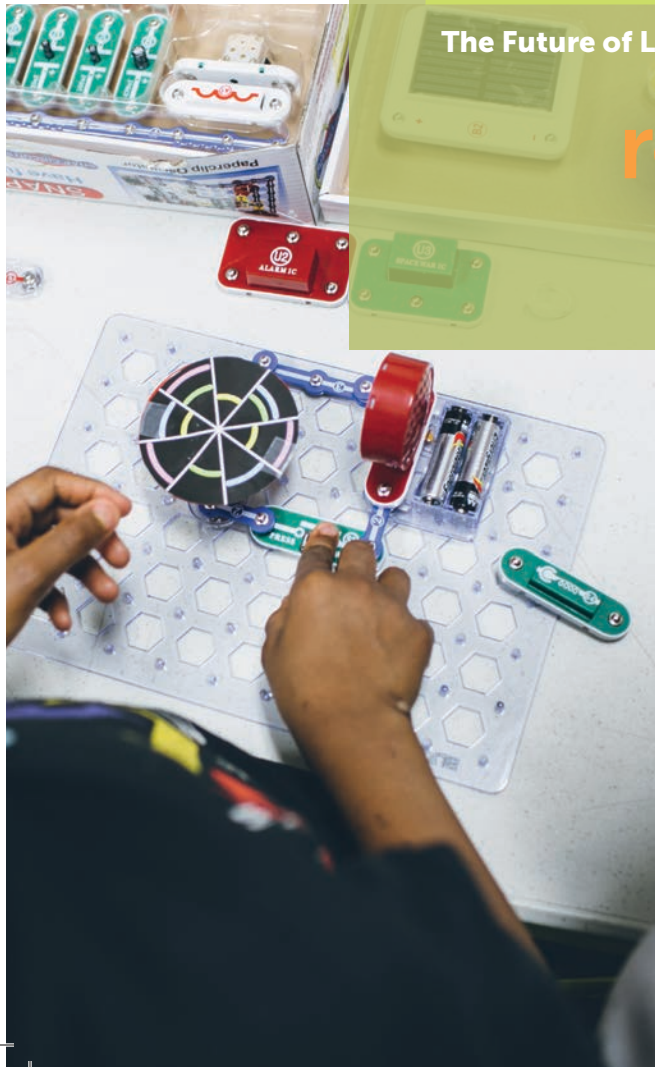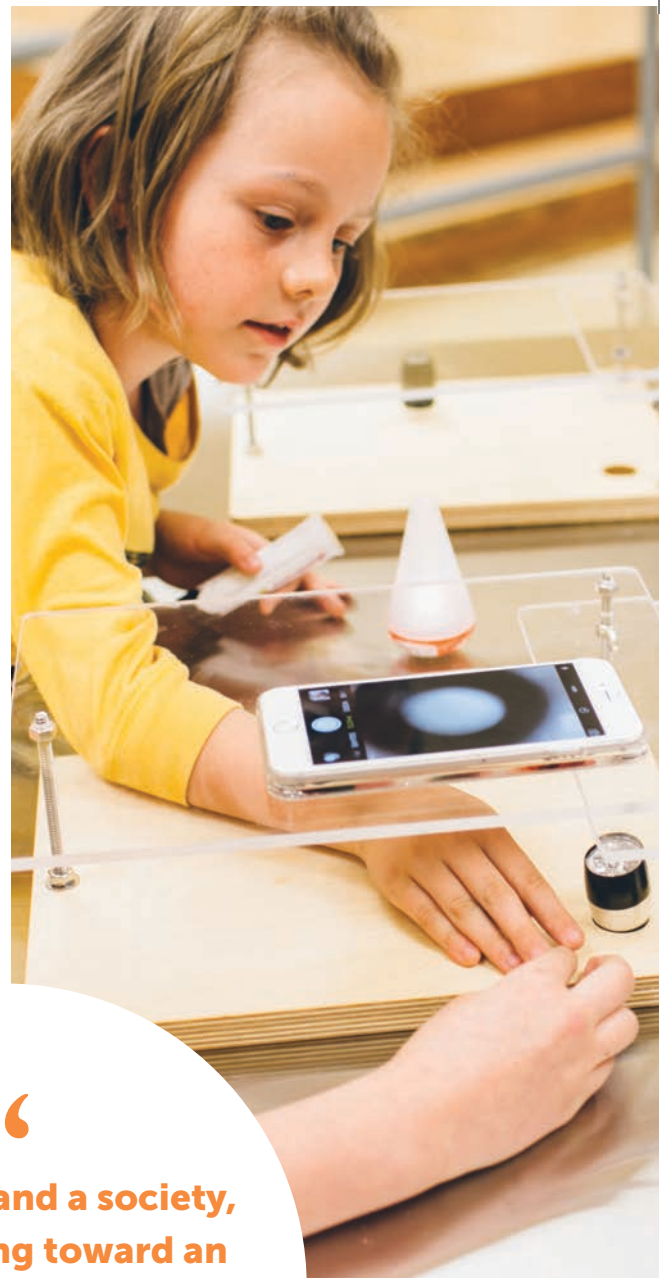# REVISED. REDEFINED. REMADE.

The Future of Learning in Greater Pittsburgh and Beyond

remake learning

REVISED. REDEFINED. REMADE. The Future of Learning in Pittsburgh and Beyond

> "As a species and a society, we're hurtling toward an era for which we have no reference point — toward a time remarkably unlike our own."

On June 29, 2007, Apple CEO Steve Jobs walked on stage in San Francisco to make a special announcement. Clad in his trademark black turtleneck and blue jeans, Jobs told the crowd that his company had developed something new — a device that, he hoped, would change the world. It played music, made calls, and took high-quality photos. It could access the limitless information of the internet from almost anywhere, anytime. And it fit into a user's pocket, with an interface simple enough to satisfy even the most tech-averse consumer.

That device, of course, was the iPhone. Though smartphones had already existed for some years, none so seamlessly streamlined the many functions we now take for granted — an innovation that instantly captivated the public, with long lines of eager buyers winding around city blocks across America and later, the world. It kickstarted the era of constant connectivity, changing the way we communicate though photos and social media. It changed the way we work, allowing tasks that once required offices, desks, and computers to be done from anywhere. It changed the way we play, putting movies and music in our pockets. And it changed the way we interact — or don't interact — with the world: Sales of chewing gum, for example, dropped by double-digits as supermarket shoppers looked at their phones instead of the aisles around them.[1]

In many ways, the iPhone changed society's definition of what's relevant, what's engaging, what *matters.* It's just one of many technologies that have reshaped our world — a place increasingly filled with robots, artificial intelligence, and self-driving cars — and it certainly won't be the last. Today, technology is advancing at an unprecedented rate, changing society in rapid and unpredictable ways. As the iPhone demonstrates, what's impossible today might be ubiquitous in a decade. Technology is even changing *us,* writes neuroscientist Gary Small: Research shows that "Modern kids' brains — brains that have been steeped in digital media since infancy — are actually evolving differently than other brains."[2]

As a species and a society, we're hurtling toward an era for which we have no reference point — toward a time remarkably unlike our own. From the way our cities work to the way our brains develop, everything about the world as we know it stands to be revised, redefined, and remade. "This is the story of social, economic, and technological change in the 21st

century," notes a report from the KnowledgeWorks Foundation, which works to ensure learners' success in success in college, career, and civic life. "We are not following a clear path at a steady clip; we are speeding on an uncertain track at an exponential pace."[3]

Clearly, this calls for a new approach to learning. First established in the early 20th century, "[America's] path-breaking system of universal public education trained students to perform rote tasks rapidly without errors or creative variation — perfect for assembly-line jobs," writes author and education activist Ted Dintersmith. "The system worked spectacularly, a robust middle class emerged, and America became the world's most powerful country."[4]

For decades, this system worked well enough for millions of people. But the system's glaring inequities were built in from the very beginning — inequities that have only widened as the world places new demands on learners. Tomorrow's graduates won't assemble cars; they'll design the computers that drive them. They'll be tasked with tackling climate change and global hunger. They'll be required to think critically, solve complex problems, work collaboratively, and communicate effectively. "Success no longer demands traditional memorization and rote learning of content, but instead requires the ability to absorb, analyze, and apply content," notes a report released by Convergence, a nonprofit working to solve social challenges. "The future begs for individuals ready and eager to grapple with and solve the problems of today and tomorrow."[5]

As adults, it's our calling to give every child the tools they need to pursue their passions and thrive in the modern world. And yet here in Pittsburgh, only 22 percent of eighth graders demonstrate math proficiency, with more than half scoring in the lowest possible category. In our highly segregated school system, only two out of three Black students graduate from high

school. Worldwide, students in the United States now perform at or below the world's average for developed countries.[7]

These statistics have prompted urgent and admirable calls to raise student achievement. But our methods for doing so have led to incremental changes at best, and then only for some students — not to mention the bitter disagreements and wasted resources that battles over charter schools, voucher programs, and other "fixes" have left in their wake. In the end, even our best attempts to raise achievement may not be enough: Without an additional focus on creativity, communication, collaboration, and critical thinking, much of what we teach our students stands to be rendered irrelevant by technology. "Chronically underachieving schools," writes Suzie Boss, author of

All Together Now: How to Engage Your Stakeholders in Reimagining School, "are more likely to feel pressure to catch up rather than to innovate, even though the goals they are chasing may already be outdated or insufficient to serve today's learners."

How do we prepare learners to meet tomorrow's demands? If we fail to answer this question, Dintersmith warns, we risk "setting kids up for a life without passion, purpose, or meaningful employment. Absent profound change, our country is a decade away from having 50 million chronically unemployed young adults, adrift in life and awash in debt."

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Here in greater Pittsburgh, we know that profound change is possible — in fact, it's already underway.

Remake Learning, a network of more than 500 schools, universities, libraries, startups, nonprofits, museums, and others, has worked for a decade to ignite engaging, relevant, and equitable learning opportunities for every student — opportunities that leverage technology, art, and the learning sciences to upend the factory-model paradigm. We believe that to truly prepare learners for the future, we must give them the power to design that future themselves. That means equipping them not only with deep content knowledge and high-tech tools, but also the skills and creativity to adapt to and thrive in a world upended by dramatic advances in technology.

Because no one organization alone can transform teaching and learning to better serve today's young people, Remake Learning brings them together. Our network's members spark and share best practices and new ideas, make it easier for neighbors and colleagues to support one other, and leverage their collective resources for greater impact. To us, remaking learning is about more than building a workforce — it's about raising creative, curious, caring citizens. It's about building stronger, more inclusive communities; a more robust, equitable region; and a more loving, compassionate world. We believe that by working together, we can help all learners reach their potential, whether that means curing cancer, cleaning an ocean, or finding better ways to care for the sick, sidelined, lonely, and poor.

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As educators across grade levels echoed this refrain, learning scientists at Carnegie Mellon University, the University of Pittsburgh, and elsewhere were just beginning to figure out why. Drawing from neuroscience and studies of cognition and behavior, scientists pieced together a new picture: one of learners coming of age in a vastly different world than that of their parents and grandparents. We knew, of course, that technology was advancing and society was changing; what we didn't know was just how profoundly these changes would impact kids.

Today's learners can access infinite amounts of information in an instant. Many have tools that, like the iPhone, were once unthinkable. They have online platforms and identities with which they can express themselves to a potentially global audience. Given these immense changes, perhaps it's no wonder that a rift appeared between learners and educators.

> **In the age of instant information, what's the role of formal education? What should learning look like? And how and where does it take place?**

In 2007, we invited educators to meet over breakfast and grapple with these questions. Fueled by pancakes and coffee, our discussions quickly grew to include scientists, gamers, artists, makers, and more. Friendships formed. Partnerships blossomed. We shared ideas and resources, bringing our experiences and expertise to bear on a central challenge: how to reshape education in a time of rapid change.

As the group (which we then called Kids + Creativity) gathered momentum, we looked to local and national research to guide our thinking. Studies suggested that "deeper learning" — learning that prepares students to know and master core academic content; think critically and solve complex problems; work collaboratively; communicate effectively; and be self-directed and able to incorporate feedback — could replace the passive lecture-and-note-taking model that frustrates learners and limits educators.

These principles are not new. Indeed, according to the Alliance for Excellent Education, "they are routine educational practice for many accomplished individual teachers and educators and some high-performing

schools." But they're by no means ubiquitous, either, and their absence manifests everywhere from international test scores to local inequities.

The good news, we realized, is that this kind of learning can happen anywhere — in schools, museums, afterschool programs, libraries, and elsewhere. These learning spaces **engage** learners by giving them the time, resources, support, environment, and encouragement to be active problem-solvers, creators, innovators, advocates, and citizens. They make learning **relevant** by connecting it to learners' interests, culture, context, community, identity, abilities, and experiences, while allowing room for exposure and growth — after all, many of tomorrow's jobs likely don't exist yet. And they make learning **equitable** by directing supports and opportunities to learners who need them most. In Pittsburgh and across the nation, this means working alongside learners in poverty; learners of color; learners in rural areas; girls in STEM (science, technology, engineering, and math); and learners with exceptionalities to uplift and support their voices, strengths, and potential.

Putting learners at the center of everything became our group's driving mission.

> **As a region, Pittsburgh's legacy is one of imagination and reinvention. How might we leverage that to bring engaging, relevant, and equitable learning opportunities to every child?**

In some ways, the answer began with us: the teachers, parents, technologists, artists, funders, advocates, and others around the breakfast table. To truly remake learning would take an all-hands effort. We'd have to pool our resources and bring these principles to every learning space, both within and beyond traditional classrooms. We imagined greater Pittsburgh as the best possible place to be — and to raise — a kid; a place where children of every background and circumstance have the tools they need to connect across cultures and live healthy, fulfilling lives. By catalyzing new approaches to learning, convening diverse people and organizations, communicating great stories, and championing best practices, that's the region we set out to create.

Together, we've turned the region itself into a kind of campus — a place where learners can pursue their passions by leveraging the programs and people that our partners provide.

In 2011, our group rebranded. The Sprout Fund stepped in to provide leadership and help formalize the network, and Remake Learning came to be.

In the years since, we've grown and evolved to incorporate new research, new partners, and new approaches to meeting learners' needs. We've formed the Remake Learning Council — a commission of regional leaders from the education, government, business, and civic sectors — to guide our work while maintaining the open, accessible structure that has defined our network from the beginning. We've released the Remake Learning Playbook, a field guide of ideas and resources for building innovation networks like ours. We've convened working groups focused on everything from education policy to career and technical education; received grants from such organizations as the MacArthur Foundation, the Carnegie Corporation, and the National Science Foundation; and launched Remake Learning Days, the world's largest open house for innovative teaching and learning.

Together, we've turned the region itself into a kind of campus — a place where learners can pursue their passions by leveraging the programs and people that our partners provide. On any given day, a child can access several learning pathways based on his or her interests. A learner interested in coding, for example, can get help from Teens as Teachers at Assemble, a neighborhood afterschool space, or drop in on a workshop at her local library to experiment with robotics. That, in turn, may lead her to Tech Warriors, an afterschool program at the Neighborhood Learning Alliance. There, kids build robots with the help of high school mentors using kits developed by Carnegie Mellon University's National Robotics Engineering Center.

Whether learners pursue science, technology, the arts, or something else entirely, we work together to help them chart paths through tomorrow's uncertainties. That's why it's common, now, to see kids flying drones in local classrooms, or recording music in libraries. That's why it's typical to see educators teaching alongside gamers and designers, and to see learning scientists planning summer camps with museum curators. There's no other place in America yet doing collectively what our partners do: remake learning together, in all the places a child might learn.

In 2016, officials from the Obama White House — along with executives from Google, Chevron, and other major businesses and funders — descended on Pittsburgh to kick off the first-annual Remake Learning Days, a weeklong celebration of innovative teaching and learning that raised more than $25 million in philanthropic commitments and turned heads everywhere from *Forbes* to the World Economic Forum.[8] Nearly 30,000 kids, parents, and educators chose from 250 events hosted by our partners across southwestern Pennsylvania and West Virginia. The week gave families a firsthand look at the future of teaching and learning, including everything from computer science to project-based coursework to events designed to amplify the voices and agency of young people. The following year, we expanded the festival even further, with our partners hosting more than 350 events over 12 jam-packed days.

But beyond the sheer scale of Remake Learning Days, the event represents something even bigger: a sustained local effort to reinvent education. "On a typical school day," writes Suzie Boss in an article about Pittsburgh, "students engage in learning activities that are anything but typical":

> **"Elementary students visit a mobile fabrication lab, where they use laser cutters and other tools to turn raw ideas into prototype objects. Middle school students learn math and language arts by using motion-capture technology and whole-body movement to control a giant computer screen that is projected onto their classroom floor. High school students create 3D animations and tackle college-level programming challenges in a special classroom that they have dubbed the Gaming Academy . . .**
>
> **Similar stories are unfolding across the greater Pittsburgh region as Remake Learning [brings] together disparate groups to reinvent education. As the reputation of Remake Learning spreads, communities around the globe are looking to western Pennsylvania for ideas and inspiration."[9]**

And why not?

In many ways, our region's rise, fall, and resurgence reflects — and maybe even anticipates — the world's changes and challenges. Throughout our history, we've been forced to reckon with new technology, shifting economies, unemployment, and uncertainty. We've had to design new futures and put ourselves back to work. As the world changed, Pittsburgh changed with it: from a manufacturing hotbed, to a hub for research and technology, to the frontier of robotics and artificial intelligence. We went from boomtown to Rust Belt and now we're fighting our way back, remaking our region and reinventing ourselves along the way.

Now, by looking both inward and outward, we're doing the same for local learners.

We look inward to institutions such as the University of Pittsburgh and Carnegie Mellon University, which have enhanced our understanding of how kids learn and grow in the digital age. We look to the region's foundation and nonprofit communities, whose generosity and vision inspire and sustain our work. We look to the region's incredible educators, committed advocates, and compelling storytellers, all of whom have parts to play in the act of supporting learners. And we look to Pittsburgh's best-loved neighbor, who with his 1968 debut of *Mister Rogers' Neighborhood*, launched a gentle revolution by leveraging a new technology called television and making it work for kids. Fred Rogers enlisted the region's best researchers, educators, and counselors to ensure his program both furthered children's learning and better prepared them for the struggles and joys of being human. Remake Learning strives to do the same.

We look outward to the many people and organizations whose research both guides and affirms our work. From the Hewlett Foundation's exploration of deeper learning to the vision set forth in "10 Principles for Schools of Modern Learning," we're steeped in the scholarship and bold ideas of others.[10] We look to the nation's cutting-edge thinkers and doers — the XQ Super School Project, the Partnership for the Future of Learning, and KnowledgeWorks, just to name a few — to push our thinking and prove what's possible when we put learners above politics. And we look to writers like Paul Tough and Suzie Boss, whose stories spark action and the relentless pursuit of equity and quality.

Lastly, we also look forward: to growing our movement and reaching every learner, especially those who've been forgotten or pushed aside. While we're proud of Remake Learning's achievements, we're also mindful of the many challenges to come. Systemic inequities still plague greater Pittsburgh, with legions of learners left out of the opportunities created by innovations in robotics, health care, and other fields for which our region is known. The next ten years will be critical for those we're working to serve, and our ever-growing network has doubled down on its commitment to expand to new communities and help lift up the voices that have gone unheard.

We look forward to a Pittsburgh region that treats everyone as a neighbor, where every child feels loved and ready to learn. We see a future in which all learners can follow their passions and find their purpose; where schools and learning spaces develop confidence and competence in addition to creativity, curiosity, and compassion. We look forward to a country and a world in which no one is "useless" or "unemployable" or "adrift," but instead productive, resilient, and fulfilled.

"As human beings, our job in life is to help people realize how rare and valuable each one of us really is," Fred Rogers once wrote.

> **"Each of us has something that no one else has, or ever will have — something inside that is unique to all time. It's our job to encourage each other to discover that uniqueness and to provide ways of developing its expression."**

This is, after all, the true purpose of learning — and why we work to remake it.

We went from boomtown to Rust Belt and we're fighting our way back, remaking our region and reinventing ourselves along the way. Now, we're doing the same for local learners.

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FOOTNOTES:

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Questions? Ideas? You can help shape the next decade of Remake Learning. Contact us at info@remakelearning.org

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