

unboxed

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Above: High Tech High students rowing in a boat built by a previous class.

Alec Patton **4** WELCOME

Isamu Thung **6** deeper learning
HOW I BEGAN, AGAINST ALL MY
EXPECTATIONS, TO LOVE SCHOOL

Allyson Fritz, **14** improvement
Casondra Gerlich, LESSONS WE LEARNED FROM
Malorie Kahl LEADING SCHOOL IMPROVEMENT
NETWORKS

Allyson Fritz **22** improvement
WHAT YOU CAN GAIN FROM
EMPATHY INTERVIEWS

Amanda Baltikas **30** improvement
EVERYONE CAN LEAD WITH DATA

40 PROJECT CARDS

		assessment	
<i>Michael Chin</i>	58	HOW (AND WHY) TO DO A WHITEBOARD ASSESSMENT	
		classroom strategy	
<i>Massa Assaad</i>	64	THE CLOCKS THAT CHANGED MY CLASSROOM	
		classroom strategy	
<i>Randy Scherer</i>	68	HOW STUDENTS CAN USE TUNING PROTOCOLS FOR PEER CRITIQUE	
		classroom strategy	
<i>Alec Patton</i>	72	SEVEN QUESTIONS TO FIND OUT IF YOUR QUESTION IS ESSENTIAL	
		literacy	
<i>Allison Ohle</i>	76	THE LITERACY CRISIS IS SOLVABLE	
		project-based learning	
<i>Trine Agerbak</i>	82	LEARNING DANISH BY SELLING POTIONS	
		project-based learning	
<i>Marco Aquinde</i>	90	PBL IN A MATH CLASS: A JOURNEY TO THE STARTING LINE	
	98	CONTRIBUTORS	

Welcome

Last month I took a skateboarding lesson. I wanted to get more comfortable dropping in (that is, doing what I'm doing in the picture on the opposite page). I could do the move, but I didn't feel confident about it. And more than one person had told me THEY felt scared when they watched me drop in, which didn't help.

I had explained this to the teacher when I booked the lesson, but that had been a few weeks ago, and the teacher—apparently deciding this was my first time trying to drop in—stood in the bowl bowl underneath me so I could grab his hands.

Apparently this reassures some people. It did not reassure me. I should have asked him to get out of the way, but I figured “he’s the teacher,” stepped on my board, and dropped in.

Then the predictable happened: I couldn't figure out what to do about having a guy standing next to me, my board shot out from under me, I scrambled for



Above: The author prepares to drop in

his hands, and in an instant I was lying on my side.

I got up, checked I was basically OK, and asked the teacher if he could just give me more space, and dropped in perfectly. In fact, my teacher told me my drop in looked great and I should ignore everybody who said otherwise.

I left the lesson with an aching hip and my confidence rattled despite the teacher's encouraging words, but I had a perfect example of a learner being harmed by over-scaffolding, and the bruises to prove it.

In fact, maybe it's misleading to talk about "over-scaffolding" and "under-scaffolding" at all, because the only way to get scaffolding right is to know what the learner needs, and you get that by gathering data—which might mean anything from from an "empathy interview" to a written assessment.

This issue is all about listening to students, learning from data, and recognizing that what students tell you is data!

Enjoy, and stay safe out there, whatever you're trying out!

Alec Patton
Editor-in-chief



Above: A model city that Isamu built in a humanities and art project that combined science-fiction world building with sculpture and projection-mapping.

How I Began, Against All My Expectations, to Love School

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Over the past decade I've attended 11 schools across the United States and Japan. I was born in San Diego, then my family moved to Yokohama, Japan when I was seven years old. My love for learning began in Japanese elementary school, where first graders walk to school independently. Every day felt like a new adventure filled with purpose. I joined the school band as a percussionist, savored delicious school lunches, and took part in a music festival. But when I returned to San Diego for middle school, I encountered slow-paced, disengaging classrooms that left me frustrated.

In the fall of 2019, I entered seventh grade at a small performing arts charter school. The academic pace lagged far behind what I was used to, and many classmates seemed checked out, treating school as a place to socialize rather than to learn. In the spring, COVID-19 hit and everything went online, which exacerbated my frustrations. Around the same time, our house flooded, forcing my family into nine months of hotels and Airbnbs while repairs were made. Navigating adolescence in quarantine—waking up only to sit in front of a laptop listening to teachers lecture a grid of black screens—left me disillusioned and numb.

A turning point came a few months into this monotony when I discovered two podcasts—Unlocking Us and Dare to Lead—both hosted by researcher

and author Brené Brown. I was fascinated by Brown's ability to give language to amorphous emotions steeped in grounded theory research. Those conversations with scholars, authors, and thought leaders became my gateway to a broader intellectual world—one that traditional academics had not revealed to me. With my curiosity reignited, I felt like there was a new challenge on the horizon. School remained dull, but now I had a parallel education: reading Brown's books, exploring new disciplines, and seeing how they eloquently parsed complex ideas to get to the crux of an argument. I felt like Alice stepping into the looking glass; I had glimpsed a new world that was calling to me.

By the end of eighth grade, I had practically given up on school. So when faced with the choice of staying at my school or transferring to High Tech High Mesa, I chose the latter, mainly because the commute would be easier for my parents; I assumed the academics there would be no better than my previous schools. But what I underestimated was how project-based learning—and the educators it attracted—would completely transform my sense of what my future could hold.

With everyone still masked up and practicing social distancing, I entered my ninth grade fine arts class not expecting much. But in that first encounter with my teacher, D. Smith, I could tell this was no ordinary class. We dove straight into a lesson on color theory. His unmatched charisma, witty humor, and jaw-dropping anecdotes from a decade of teaching made me feel like I was stepping into a Picasso painting—unsettling at first, but once you saw the idiosyncrasy as a whole, it was just plain captivating. Then, just as I thought I'd met the best teacher I'd ever have, I walked next door and was greeted by my humanities teacher, Matt Darling. In that first week we talked about unceded territory, community values, and glimpsed our first project.

D.'s and Matt's classes were distinct and brilliant in their own ways. But when the bifold partition separating their classrooms was retracted and all 60 students had eyes on them both, an unparalleled chemistry was sparked. They bounced ideas off each other, changed plans in a heartbeat when something made more sense, and magically turned chaos into collaboration. Our first project, Uncommon Message, blended art, design, and historical analysis as we created screenprinted T-shirts and sculptures that celebrated marginalized heroes, culminating in a public pop-up market. But the greatest transformation was internal—I finally believed again that school could be something extraordinary. This experience sparked a deep interest in understanding what makes learning meaningful, leading me to become both inquisitive and at times rebellious as I sought to identify the intangible qualities that create truly engaging educational experiences.

It was apparent through their actions that D. and Matt genuinely cared for each and every one of us and wanted all of us to succeed. Every classroom

decision they made was in service of that greater goal. Not only did they love their work, but they honed their craft akin to how a swordsman might sharpen his blade—with integrity, honor, and passion. It seemed like they were born to teach, and for us students, seeing them take their work so seriously motivated us to reciprocate the effort and do the same.

Our collective efforts culminated in a singular exhibition that D. and Matt masterfully facilitated, but it was us students who carried it across the finish line. Seeing the fruits of our labor and learning on display for our community helped me finally believe that school could be something more than what I had previously experienced. This moment would be the catalyst for the rest of my high school trajectory in advancing what education could be.

From then on I became obsessed with one question: What would it take to bring the magic that I experienced with D. and Matt into every classroom? In just the second semester of ninth grade, after our classes had changed, I was disappointed to find that not every project was automatically golden. It took time for me to rethink my expectations and reframe my frustration as an opportunity to revise the assumptions I'd made. I realized that simply operating in a project-based learning school didn't guarantee a rockstar project. I hypothesized there were underlying conditions, intangible qualities, that impact the student experience.

This newfound passion for educational change left me hungry for frameworks that could help me make sense of what I was observing. But as my freshman year ended, I felt lost despite my growing identity as a changemaker. Through a series of fortunate connections, I found myself as the lone high schooler at an Introductory Workshop to Compassionate Systems in Ventura, California, co-facilitated by Mette Böll and Peter Senge. Suddenly, I was surrounded by educational administrators decades older than me—people whose full-time job was to think about impactful change efforts. Despite the age difference, I felt right at home, diving into discussions about systemic shortcomings and weighing solutions during every free moment. This wasn't just a thought experiment; I was finally meeting people who could actually reshape the system I was living in.

The workshop introduced me to tools like the Mandala for Systems Change and the Iceberg Model, providing the analytical framework I'd been craving. More importantly, I discovered this was part of a growing global movement, and learned about their newly formed Youth Council. I applied, got in, and soon found myself connecting with peers from cities I couldn't even point to on a map. All of us shared the same curiosity, compassion, and recognition that school wasn't equipping us for life. After a year as a participant, I was invited to join the Youth Leadership Team as a co-creator, and simultaneously enrolled in Cohort 5 of their Master Practitioner program. A week-long in-person retreat in Garrison, New York, with 40 educators from dozens



Above: Isamu modeling an outfit created for the launch of a project in which students studied a century of American history through the lens of fashion

of nationalities, felt like a profound miracle after connecting virtually all year. Working with the Center for Systems Awareness became my first real job and it taught me so much about myself as I juggled multiple projects, navigated team dynamics across three time zones, and even co-facilitated a breakout session at the Systems Awareness Lab Conference at MIT.

In trying to understand what made a learning experience transformative, I disrupted practices that felt stagnant and wasn't afraid to voice my opinions. At times, my sentiment came off as brash and might have rubbed some people the wrong way, but I figured out how to strike a balance between advocating for what could be and acknowledging what is. I learned to stop blaming people for their actions and recognize that decisions that might have felt like a personal choice were often guided by an invisible hand dictated by the larger system.

With each new project and each new teacher, I expanded the range of information I pulled from to inform my vision of what a classroom should look like. In tenth grade math we designed and launched rockets and built a bamboo fort from scratch. In humanities I directed a modified version of *The Crucible*, a play about the Salem witch trials, as we drew parallels to McCarthyism, political propaganda, and modern media. And in a project that combined science and humanities, every student wrote a research paper on an environmental topic—I chose sustainable architecture—and we published an anthology of our pieces that became purchasable on Amazon.

In my junior year, we examined 100 years of American history through the lens of fashion, organizing a fashion show for the entire school. From the Chicano and Civil Rights movements to 1970s disco and third wave feminism, we explored how each of these groups represented their beliefs, ideologies, and spirit through what they wore. In a different class we partnered with Illumina, a biotech company, to run DNA extraction experiments, tour their campus, and film a mini-documentary about our class. In another project, we organized a fundraiser for the oncology department at our local children's hospital as we learned about the science and politics surrounding cancer. We heard firsthand stories from a survivor, a bone marrow donor, and from associations like the DMV organ donor program and the Gift of Life bone marrow registry.

Over the course of four years I went on countless field trips and collaborated with dozens of community partners. Notably, we took multiple trips to the San Diego Zoo and San Diego Safari Park to learn about conservation efforts for white rhinos and endangered frog species. In a project titled Lithium Valley, we learned about the deteriorating environmental conditions at the Salton Sea and the lithium deposits in the region, and considered stakeholder perspectives from all sides—the lithium extraction companies, local citizens, politicians, environmental advocates, and native tribes. We

used evidence from online research and onsite fieldwork to make informed decisions about what policies and actions would be best for everyone.

During the last few weeks of eleventh grade, we had our month-long internship program. Matt Darling, who by then had moved to the Bay Area to become a high school administrator at Summit Prep, became my mentor. I worked alongside him to understand his role in operating a school, and I facilitated an end-of-year professional development for Summit Prep's faculty. I learned how to use coding, spreadsheets, and automation to develop a script for their graduation ceremony slideshow, along with other administrative tools.

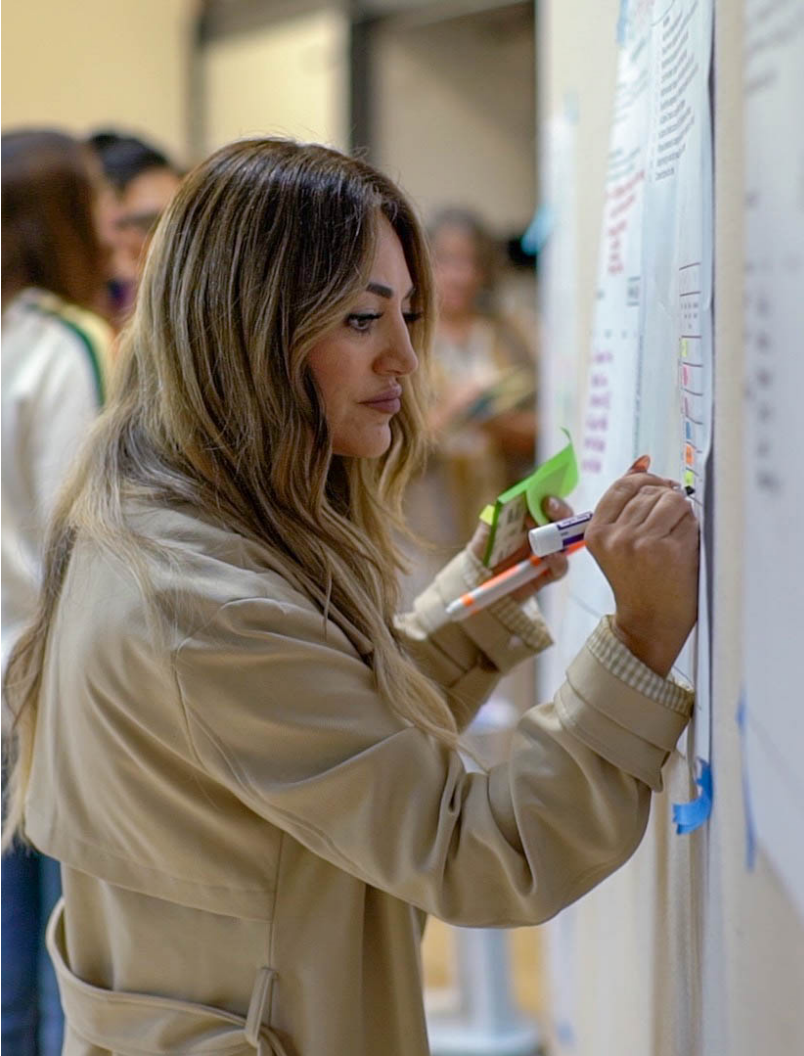
When senior year rolled around, everyone's focus was on college applications, and with the guidance of our exceptional college counselor Chris White, I wrote personal essays about my experiences at HTHM and my involvement in educational change. After getting accepted into Stanford University, I decided to commit there, trusting that the peers and faculty I meet will challenge and inspire me in ways that I'll be hard pressed to find elsewhere.

In middle school, I assumed I wouldn't bother going to college. Now I'm at Stanford. While it might be convenient to attribute this accomplishment to my own actions, I recognize that so many of our wins (and failures) are not ours alone. I have had the privilege of being raised in two cultures, had the chance to attend high school on the forefront of innovative learning, and meet people who advocated for me. This is how I got to where I am. I now owe it to the people who have believed in me to leap at opportunities to create things that will positively impact not just me or my circle, but will lead to better outcomes for communities all across the world.

A pattern throughout my life is that I have always swum just past the frontier of what I can do: After I aced the academic game, I wanted to understand what it takes to be a teacher; after that, how to orchestrate the whole school; and each time I grew comfortable in one pond, I dove head first into a bigger one. I imagine that I will continue to do the same in the next chapter of my life. I am anchored in my vision to *live in a world where the systems around us help people lead fulfilling and successful lives—in the ways each of us define them*. That last part is essential. Too often, people are conditioned to work for the promise of a better life ahead, only to look back and wonder if they ever lived the life they wanted. I want to flip that script. For me, it's about setting bold goals, stepping into the world to pursue them, returning to my vision, and pushing forward again. If I keep repeating that cycle—stretching beyond what feels possible, learning from the process, and building systems that lift others along the way—I know I'll not only reach my destination, but also

create something that makes the whole journey worthwhile.

The education I have received can't be summed up in a single transcript or a meticulously crafted résumé. The paradoxical truth about striving for a better education is that there is no such thing as the perfect class, the perfect school, or the perfect pedagogical model. Yet by continuously redefining our goals to reflect our evolving values and priorities, we are able to take steps in the right direction. None of the projects, internships, or events I have been involved in went exactly according to plan. But that fact never undercut the potential of an experience to be enriching and transformative. Thus, the real conversations that should be had are what we, as a community and a society, truly value about the education that the next generation will receive. I am grateful that over the past 12 years, I was able to engage with so many schools, because now I can tease apart and stitch back together those different ideals to decide for myself the life I want to lead. Perhaps the catalyst of change doesn't start from extensive multi-year plans or numeric reports, but rather from asking ourselves a single, simple question: *What kind of life do we want our children to lead?*



Above: Educators record data in a continuous improvement workshop that addresses the causes of chronic absenteeism rates.

Lessons We Learned from Leading School Improvement Networks

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What happens when you bring together two dozen schools—from rural K-12s to large urban high schools—with the shared goal of reducing chronic absenteeism? As three Attendance & Engagement Coordinators in Washington State, we found that doing so is a uniquely powerful way to ignite shared learning about what works, what doesn't, and what to try next in reengaging students and families.

In partnership with the Office of Superintendent of Public Instruction, we launched and led attendance improvement networks across 24 diverse schools from June 2024 to June 2025. Our network aim was to decrease chronic absenteeism rates across these schools, with a focus on historically marginalized students. Despite their differences in context, every team wrestled with the same core challenge: how to reengage students and families in the wake of historic attendance declines.

Although future funding was unexpectedly cut due to a state budget shortfall, we are too invested to let what we've learned sit on a shelf. This article is for Washington's education leaders, or anyone considering running an improvement network in education.

First, let's backtrack to a fundamental question you may have: Why lead an improvement network focused on attendance?

Our answer: Because facilitating an improvement network proved far more powerful than working individually with schools one-on-one. The collaboration accelerated learning, sparked new ideas for change, and boosted morale across teams.

At first, some leaders questioned whether a network spanning such different grade levels and geographies would be useful. But at the very first convening, those doubts faded as school teams realized they were facing many of the same challenges. By year's end, even the most hesitant leaders were saying things such as, "It made me feel like we're not alone in this struggle." That sense of solidarity and shared momentum turned out to be a powerful driver of progress.

If we had the chance to do it again, here are a few things we'd keep, and others we'd tweak.

1. Lead with Empathy, Not Compliance

A fundamental shift we witnessed was in mindset. Rather than focusing on bringing students and families into compliance, school teams began leading with empathy. "Instead of calling and kind of yelling or nagging," said one principal, "it's become a complete shift into calling and finding out what's going on, why, and how we can help." Tools like empathy interviews helped teams hear directly from students and families, revealing root causes of absenteeism and unlocking better strategies. Conducting an empathy interview requires listening without judgement in order to increase understanding of another person's experience. For many of our school teams, conducting empathy interviews led to stronger relationships between staff and students and families, more honest communication, and solutions that effectively addressed barriers to attendance.

Next year: We'd encourage coaching teams to use empathy interviews not just once, but as an ongoing tool when they hit roadblocks or need clarity. Empathy interviews aren't a box to check—they're a habit of mind.

2. Make Cross-School Sharing the Norm

Hands down, participants said that learning from other school teams was the best part of the network experience. "Stealing ideas was the big one—and hearing what wouldn't work for us was just as helpful," explained one assistant principal. Presenting their work to peers within the network pushed school teams to reflect more deeply, and inspired others to do the same. Our initial hesitation to require presentations—because we didn't want to add to the workload of overburdened staff—faded quickly as the benefits became obvious. Many of the teams who presented during the convenings later

shared their learnings statewide in an Attendance Improvement Showcase.

Next year: We'd make cross-team sharing a standing practice. Every team would share at least once, and we'd bring back the dilemma consultancy protocol—participants loved it and wanted more (we first experienced this protocol at High Tech High's Meta Attendance Network and found it incredibly impactful; we used a version of the School Reform Initiative's consultancy protocol).

3. Offer Teams Ready-Made Tools

Network teams consistently appreciated the practical and ready-to-use tools we created for them. Templates for agendas and data tracking helped teams stay focused and made the work easier to monitor and sustain. As one K-8 principal put it, "We got more done because we had something to follow... even when we lost a member midway, the other one was able to catch up because we had all that material in place." We encouraged teams to be creative and flexible and make the tools their own, and some did adapt and add to what we gave them. But a surprising number took resources like the agenda template and used it as is—suggesting they valued having a ready-to-use tool specifically designed for their purpose.

Next year: We'd keep providing plug-and-play templates and encourage teams to find ways to refine them, creating space to improve useful materials and share them widely.

4. Start with Tier 1

Like many other states, Washington uses a Multi-Tiered System of Supports (MTSS) framework to guide how schools build equity and close opportunity gaps among students. Interventions are organized into three tiers based on student need. Tier 1 includes universal supports that benefit all students, like engaging classroom practices, clear expectations, and positive school climate. Tier 2 involves targeted supports that adults deliver to students who need some additional help, while Tier 3 provides intensive, individualized interventions that are designed for students with the greatest needs.

Throughout the year, many teams came to a crucial realization: They were putting most of their energy into things like truancy conferences (Tier 3) and not enough time strengthening schoolwide practices that prevent absences in the first place (Tier 1). An elementary vice principal put it this way: "We figured out that tweaking a few Tier 1 things made a bigger difference than hunting down kids for truancy meetings." Instead of constantly responding to attendance crises, school teams found that improving universal practices—like making morning routines more welcoming or adjusting how they



Above: Educators identify and analyze the most significant factors causing a problem in a continuous improvement workshop.

communicated with families—prevented many problems before they started. This shift also helped teams realize they had more power than they thought, and more ways to take productive action without blaming families.

Next year: We'd continue encouraging teams to anchor their strategies in strong Tier 1 practices before building out Tier 2 and 3 supports. One activity that school teams took a lot from was reading and discussing the 2024 Ad Council Toolkit, *How To Overcome Chronic Absenteeism and Encourage Parents To Send Kids To School Consistently*.

5. Help Teams Unpack Their Own Theories

Not everyone on a school team sees the problem—or solution—the same way. Some frame chronic absenteeism as a family issue, others as a matter of student engagement, and still others as a consequence of structural barriers. Unless team members articulate to each other their own theories about why something is or isn't happening, it can be very difficult to move towards a shared goal. For example, if a staff member believes that students are missing school due to family issues, they probably won't be on board with a solution intended to make students feel welcome (warm greetings at the door, for example) because they don't think a lack of belonging is the source of the problem. Exploring everyone's different theories is essential, and can be done productively when team members bring a mindset grounded in equity, curiosity, and a willingness to learn.

Next year: We'd add more tools and protocols to surface each person's working theory about why students are missing school—and where they think change will happen. We'd then help teams connect those theories to the work they're doing, so they can update their thinking as they learn throughout the year. This proved to be more difficult than we thought!

6. Don't Promise Answers—Create Space to Test What Works

When schools treat improvement cycles like one-time fixes, they miss the point. Improvement is about iteration—planning, trying something new, learning from it, and trying again. Successful improvement teams commit to testing ideas, learning from results, and adjusting as they go. We wish we had emphasized earlier that teams were not here to solve things once and for all—they were here to test, learn, and test again. “You're all scientists” would have set the right tone from day one.

Next year: We'd brand our convenings as “Attendance Labs” to reinforce the fact that the network is a place for experimentation and learning, not perfection.

7. Model Learning by Making Your Own Growth Visible

One unexpected benefit of leading this network was how much we grew as facilitators—and how powerful it became when we shared that learning openly with each other. As regional coordinators, we benefited immensely from our weekly collaboration: sharing challenges, co-designing sessions, and supporting one another across convenings. This cross-pollination made our coaching stronger and more responsive. School teams in one region got to hear what was working in another, because we attended and supported each other's convenings. Our work sessions across regions didn't just make us better coaches; they modeled the very practices we were asking school teams to embrace: testing ideas, reflecting on what worked, and iterating based on feedback.

Next year: We'd be even more intentional about sharing our own "aha moments" during convenings—like realizing we needed to spend more time surfacing teams' theories of change, or admitting when a protocol didn't land as expected. Doing so would help normalize the true nature of improvement work. School teams would be able to see that even the "experts" were learning and adjusting, which would make it safer for them to take risks and share their own struggles. This sends a powerful message: that we're all learners here, figuring it out together. When facilitators model curiosity and adaptation rather than expertise and certainty, it creates the psychological safety that real improvement work requires.

To those responsible for future planning and funding decisions, we'd encourage allocating time and resources for the kind of co-design and collaboration across regions that proved so critical for our own learning. It enriches the experience and strengthens outcomes for everyone involved.

Final Thoughts

Looking back, it wasn't just our school teams that grew and improved—we did, too. Leading these attendance networks taught us that improvement work is fundamentally about relationships, learning, and iteration—not quick fixes or compliance measures. We also learned that when facilitators model the same curiosity and vulnerability we ask of schools, it creates the conditions for real, lasting change.

We hope the insights shared here will inspire anyone taking up this important work. Because improving attendance isn't about fixing families or forcing compliance. It's about building systems and cultures that make showing up feel possible—and worth it.

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Above: A teacher conducts an empathy interview with a student.

What You Can Gain from Empathy Interviews And How to Avoid Common Traps

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When Washtucna School District’s attendance team shared their findings from empathy interviews with caregivers, I thought I would know what they learned. I expected to hear that they needed to address frequent absences due to health concerns, or foster a more welcoming school climate, as per some of the commonly cited reasons for absence in the state of Washington (PSED, 2025). It turns out I was wrong.

Washtucna is a small K–12 school serving five communities in rural Washington, and they joined our attendance improvement network to reduce chronic absenteeism. The team—which included the principal, special education teacher, and secretary—called caregivers to arrange in-person or phone interviews. Through their conversations, the Washtucna team uncovered something that genuinely surprised me as an improvement coach: families actually wanted more communication about attendance. For years, I’d heard school teams worry about over-communicating and overwhelming parents. We assumed families would tune us out. But when caregivers said they wanted more frequent, personal updates—it flipped our assumptions upside down.

Instead of shrugging it off, the Washtucna team turned this insight into action. They coached teachers to reach out intentionally, so that every absence felt noticed—not with a scolding tone, but with a warm, “Hey, we

missed you today.”

Because they took what they heard and put it into practice, things are moving in the right direction. Their chronic absence rate dropped from 40 percent to 37.5 percent between the 2023–2024 and 2024–2025 school years. Their new communication strategy was a key part of this improvement.

Stories like this remind me just how powerful empathy interviews can be when we lean in with genuine curiosity. But not every story goes that way: I have seen plenty of schools fail to gain insights from empathy interviews, or even harm their relationships with students or caregivers. My fellow Attendance & Engagement Coordinators and I supported more than 20 schools in the 2024–2025 school year. This work has helped us better understand what can go wrong—and what to watch out for—whether you’re conducting empathy interviews yourself or coaching others on how to do them well.

1. Understand that Empathy Interviews Are Not an Intervention

The point of an empathy interview is not to “fix” a student’s attendance, improve their grades, or address a behavioral issue. The point is to learn. Period.

Yes, it’s possible an empathy interview can lead to an increase in regular attendance, an improvement in academics, or fewer behavior concerns—but only if the goal is honest curiosity. This might sound obvious, but on multiple occasions I have observed teams using empathy interviews as a tool to “educate” students and caregivers, rather than trying to learn from them. I’ve seen schools write “empathy” questions that were really attempts to persuade families to care more about school. For example, “Why do you think it’s important to come to school everyday?” or “How do you think your child’s grades will suffer if they miss more days?”

I’ve also seen team members expecting “results” from empathy interviews. In one attendance team meeting, a staff member said, “The empathy interview didn’t work—the student still didn’t show up to school.” Well, that was never the point. The staff member was correct that the interview didn’t work, but the person who it didn’t work on was the staff member, not the student.

The entire goal of an empathy interview is to understand the story behind the absences, without judgment or an agenda. When the purpose is genuine learning, families open up—and they’ll often share insights no data report can capture.

How to tell if you’re using empathy interviews as an intervention, and what to do instead

Signs that your “empathy interview” is an intervention	What to do instead
You find yourself giving advice, tips, or resources during the interview	Save advice-giving for a follow-up conversation; stay in listening mode and take notes
Your questions contain a “should” or “don’t you think…”	Reframe into open-ended, neutral questions (e.g., “Tell me about…,” “What’s it like when…”)
You’re trying to correct “misconceptions” families have about attendance	Suspend judgment; seek to understand their perspective before offering information
You’re measuring success by whether the family’s mindset changes in the moment	Measure success by what you learn and can act on later

2. Ask Real Questions, Then Actually Listen

Good questions open doors. If your empathy interview feels like a survey or a truancy script, you’ve missed the point. Early in the year, Washtucna’s team came up with the following four questions to ask during empathy interviews with caregivers. The questions worked because they were personal, future-focused, and built trust:

1. Suppose you could have three wishes to make your child’s education the best it could be. What would they be, and why?
2. Tell me about a time when your child was excited about coming to school.
3. Tell me about a time when your child did not want to come to school.
4. What advice would you give another adult about your child?

Ask these questions, then pause. Let silence do its job. Some of the best insights come after a deep breath and a hesitant, “...actually, there’s something else.”

Take detailed notes—or record if you have permission—and capture the exact words. Subtle language can reveal assumptions, barriers, or unspoken hopes that you’d never find out about otherwise.



Above: Empathy interviews in action.

3. Avoid Treating the Empathy Interview Like a Box to Check

I've seen teams rush through empathy interviews so they could “get to the real work.” They jot down a few answers and never look at them again. When I follow up, they say, “We didn't learn anything new.”

When I hear that, I wonder, “Was the interviewer truly listening? Did they ask a follow-up question when something didn't add up? Were they asking the right questions in the first place?”

The teams that get the most value from empathy interviews don't do just one round. They keep going back. They cross-check new ideas against what families tell them, and when something doesn't work, they ask more questions. They understand that the empathy interview isn't a step to complete—it is a mindset.

How to Help your Team Recognize the Value of Empathy Interviews

- Debrief interviews together so patterns and surprises are visible to the whole team.
- Highlight “aha” moments that wouldn't have emerged without deep listening.
- Connect what you learned in interviews to changes you made—and the results.
- Treat interviews as an ongoing feedback loop, not a one-time event.
- Celebrate curiosity by recognizing team members who ask great follow-up questions.

4. Expect to Be Surprised

If your empathy interviews confirm everything you already thought you knew, take it as a red flag. These conversations should stretch your assumptions, poke holes in your explanations, and make you a little uncomfortable. That's where the growth happens—for you and your system.

Assumption Busting Checklist

Before the interview:

- Have I named my own assumptions? (Write down 2–3 before starting.)
- Am I asking at least one question I truly don't know the answer to?
- Does my first question invite a story, rather than a judgment?
- Have I included families with a variety of experiences, not just the “usual suspects”?

During the conversation:

- Have I asked, “Can you tell me more?” at least once?
- Did I let them finish before responding?
- Have I asked about something unrelated to academics or attendance to understand context?

After the interview:

- Did I hear anything that surprised me? (If not, why not?)
- Have I shared at least one insight with my team that challenges our current thinking?
- Did I record their exact words rather than my summary?

What Happens Next

Back in Washtucna, what the team learned impacted more than just how often teachers called home—it changed how the whole team thought about partnership with families. I’ve seen this happen in other schools, too: When staff lean in to what they hear, even when it surprises them, they find better ways to show students they matter and families that they’re part of the solution.

If there’s one thing I hope you take away, it’s this: ask first. Listen longer than feels comfortable. Write it down. Talk about it with your team. And then act on what you learn.

Because the real magic of empathy interviews isn’t in the question list—it’s in what you’re willing to do differently after you hear the answers.

Appendix: More Questions that Lead to Rich Insights

The following questions come from *Journey To Improvement* by Alicia Grunow, Sandra Park, and Brandon Bennett:

1. Tell me about a recent time you visited your child’s school (for any reason).
2. What was the visit like? Who did you talk to? How did you feel?
3. Tell me about a day your child was excited to go to school. What was going on? How did you know they were excited?
4. Tell me about a day your child didn’t go to school. What was going on? How did you feel?
5. Tell me about a recent time your child was absent. What, if any, interaction did you have with the school? What was your experience when your child returned to school?

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Above: Teachers look at data together at an improvement workshop.

Everyone Can Lead with Data Coaching Lessons from the Field

Amanda Baltikas

University of Chicago Network for College Success

In 2014, after seven years teaching special education, I became one of the data leads at South Shore International College Prep—though at the time, I had no idea what that actually meant. This new role (which I did in addition to my “regular” job) was created when our school partnered with the University of Chicago’s Network for College Success (NCS).

We received support from NCS for instruction, ninth grade on-track, and post-secondary work, and every school in NCS had to appoint its own data lead. In broad terms, the role entails bringing student-level data to administrative and teacher teams to inform adults and support interventions. I spent a lot of hours behind a computer compiling data and creating graphs and charts for school leaders and teachers.

At the time, I saw myself as a conduit for data. Students were taking assessments, receiving grades, showing up for school—or not—and sometimes getting into trouble. I took those test scores, grades, and attendance and discipline records, made them presentable—combining some data sets, dividing others by demographic group—and shared it with teachers in the form of spreadsheets and slides. That felt like a job done—until I realized it wasn’t.

I wouldn’t see what I was missing until nearly a decade later, when I left

the Chicago public school system and joined the University of Chicago as a data strategist and coach for NCS. Now that I support 19 schools, I've come to understand that the "conduit role" is necessary but not sufficient. The real power of the "data lead" role lies not just in presenting the data, but in bringing together the people who need to talk about it, facilitating their conversations, and supporting them as they turn insights into action.

In order to achieve this, I need to support data leads to play an active role in shaping meeting agendas, highlighting both bright spots and areas for improvement, and facilitating protocols that bring data into daily practice. I have come to observe a familiar pattern: teams tend to be data-rich but action-poor.

In other words, they are collecting (and being sent by the district) copious, even overwhelming quantities of data, but they aren't using them as a basis for productive discussion that leads to action. In the words of my first NCS coach, "It all comes back to the right data, right people, right time." And I would respectfully add one more to that: right conversation—because as many of us know, to our dismay, it is entirely possible to get the right data in the room, with the right people, at the right time, and spend hours in a discussion that goes around in circles until everyone is exhausted and dispirited.

I want to share five insights I have gained about helping the "right people" to have the "right conversations" about data (and, crucially, turning those conversations into actions—the effects of which are themselves measurable). This advice is aimed at coaches, which is to say, anybody who is helping somebody else in a school to try out improvements based on data.

Before I go any further, I want to introduce you to Ashthorn High.

Introducing Ashthorn High

To illustrate these five lessons, we'll follow the story of "Ashthorn High"—a fictional school grounded in real experiences from schools across Chicago. At Ashthorn High, a newly formed team meets regularly to focus on ninth grade success. This team includes a team lead, seven teachers, an assistant principal, and a school counselor. The team lead is receiving coaching from an external organization to strengthen their ability to guide data-driven work. Their outcome goals this year include reaching 95 percent of ninth graders on-track and 50 percent of Black and Latino male students to earn a 3.0+ GPA. Like many school communities, Ashthorn has struggled to consistently support students during their critical transition into high school. While the school and team are fictional, the challenges they face—and the strategies they develop—are drawn directly from the lived experiences of educators navigating similar dynamics.

1. Start with What They Have

This may seem like a simple step, but I can't tell you how often I've brought data to an educator instead of first exploring what they already have access to or know. The starting point for most data work is understanding what is accessible to your coachee—whether from their school, district, or student information systems. Take the time to investigate their experiences with data in their school first. Shifting this approach empowers the educator to be independent, rather than relying on your data. Consider asking:

- What data has their administration or district provided?
- What emotions did that data evoke?
- How did they respond to it?
- What values and beliefs do they hold about data?
- How have they observed their peers engaging with data?
- What research or experiences have influenced their data use?

As you gather this information, you'll develop a clearer understanding of how data has been presented to them—whether as raw numbers, charts or graphs, or tools for accountability, improvement, or transformation. These insights are invaluable; an educator's past experiences and beliefs around data will inevitably surface during team meetings and data discussions. Additionally, if charts or graphs are already available, teams can more quickly shift their focus from understanding the numbers to taking action.

What this Looks Like at Ashthorn High

During a coaching session, the team lead at Ashthorn High is asked to describe the current “data story” around ninth grade success. In response, they open a district-provided spreadsheet with student grades and a platform that displays student test scores from a baseline instructional assessment. As they begin talking, the team lead's body language shifts—they hesitate, their voice tightens.

“I know this data isn't giving us the right story about the work here,” they say. “I honestly feel ashamed. It makes it seem like a majority of our students are behind.” At this moment, the coach doesn't rush to problem-solve or defend the data. Instead, they listen. They create space for the team lead to unpack the emotional weight of the numbers. The coach restates what the team lead just discussed and asks about how other educators in the building use data. The team lead responds almost as if holding the entire staff's emotions on their shoulders—data use is not a generally positive experience at Ashthorn High. By starting with the educator's relationship to the data, rather than the data itself, the coach is building trust and laying the foundation for deeper, more sustainable engagement.

Table 1: Key questions and potential data sources

Key Question	Data Source
Did this initiative remove barriers for students in turning in late work?	Review existing policies, identify known barriers, and analyze what was addressed or removed.
How can we gauge student understanding of the new policy?	Conduct empathy interviews, student focus groups, or quick reflection surveys.
What learning do adults need to undertake? What mindset shifts are necessary?	Gather qualitative data on teacher beliefs; review class syllabi or grading practices.
What impact does the new late work policy have on students?	Compare student grade data before and after policy implementation; for example, by counting the number of missing assignments in gradebooks and checking attendance data.

2. Lead with Questions, not Numbers

Before looking at data, help your coachee identify the key questions related to their work. Educator teams engage in extensive work, unpacking problems of practice, creating interventions, gathering student and staff feedback, leading learning, and driving continuous improvement. Given the breadth of their work, data is a powerful tool to measure their efficacy, monitor progress, and determine when to pivot, iterate, or abandon an approach. Encouraging your coachee to first articulate what questions they are trying to answer will help them determine the most relevant data to bring to the table. Too often, teams default to student outcome data—such as grades or attendance—to assess effectiveness. While these are important, teams should also consider broader questions related to implementation and impact. For example, if a team is implementing a new late work policy, help them think critically about who is impacted and who is involved in this work. See table 1 for key questions and potential data sources that might arise.

By starting with the right questions, teams can ensure they are leveraging data in meaningful ways that drive informed decision-making and continuous improvement.

What this Looks Like at Ashthorn High

At Ashthorn High, the team lead is beginning to shift their focus from layered interventions to strengthening Tier 1 instruction—the core teaching and learning experience that reaches all students. In a coaching session, they express a desire to move away from a reactive approach and start addressing

root causes in the classroom. “I feel like we keep building intervention on top of intervention,” they say. “But what if Tier 1 instruction was strong enough that fewer students needed intervention in the first place?” The coach pauses and asks: “What are you really trying to learn about your classrooms right now?” Together, they begin brainstorming questions that align with the team lead’s goal: What are students experiencing during instruction? Where are the engagement gaps showing up—and for whom? What support do teachers need to strengthen core instructional moves? From this discussion, they identify potential data sources: observation notes, student engagement surveys, lesson plans, and walkthrough data.

3. Build Comfort and Skill Around Key Metrics

Create opportunities for the team to deepen their understanding of key metrics such as ninth grade on-track, chronic absenteeism, or GPA and college persistence. Explore their familiarity with these metrics—what they mean, the research indicating their importance, their implications for action, and how they function as accountability tools within the district. Help your coachee unpack what these metrics and indicators reveal about teacher practice and student experience.

- Take time to ensure they can interpret transformed data—whether in visual, graph, or table form—and confidently explain it to a peer or team.
- Encourage them to identify and utilize visuals that support learning at different levels of their school, distinguishing between impactful visuals for their own teaching practice, team collaboration, and administrative decision-making.

As their confidence grows, discussions shift from deciphering data to focusing on the actions the data informs—moving from understanding the numbers to making meaningful, data-driven decisions.

What this Looks Like at Ashthorn High

During a coaching session, the team lead and coach are debriefing the previous ninth grade success team meeting. At that meeting, the team lead had presented data on how many students were “on track” and how many were earning B’s or better. Now, in coaching, the team lead shares some unexpected feedback: “A few teachers pushed back after the meeting. They felt like I was suggesting they inflate grades or just pass students to make the numbers look better. That’s not what I meant—but now I’m not sure how to bring data without putting people on the defensive.” The coach listens and validates the concern—this kind of emotional reaction is common when metrics like GPA or on-track rates are introduced without broader context. Rather than pivoting away from the data, the coach leans in. Together, they explore how the data was presented visually, framed, and what assumptions may have surfaced. The coach introduces a strategy: link the data to broader



Above: A teacher annotates demographic data.

student outcomes, such as postsecondary readiness or course engagement, and invite the team to reflect on what's contributing to student performance—rather than assuming the conversation is about accountability or grading policies alone. In their next team meeting, they plan to use a combination of visuals and open-ended reflection prompts to reconnect the group with their collective goals and unpack the metrics that matter for young people.

4. Make Data Conversations Routine and Collaborative

Data is only as strong as the learning and conversation that comes with it—this is the “magic.” During coaching, introduce a variety of protocols to your coachee to model different ways to socialize data effectively. Have your coachee actively participate in these protocols to experience them as a team member would, before they implement them. As you facilitate, engage in process observations with your coachee. Consider:

- How did they lean into their team's norms or core values?
- What emotions surfaced as they moved through the protocol?
- What insights emerged about next steps for themselves and their team?

Create space in coaching to explore which protocols and data presentations are most effective at different levels of their school. Bring in data and protocols that would work best with administrators and contrast that with data protocols for a teacher course team. Encourage your coachee to reflect not only on the data, but also on the process of engaging with it to strengthen their ability to lead data discussions. In coaching sessions, debrief their experience to identify key learnings. Role play through challenging conversations and anticipate difficult questions that may arise when data is presented. Sharpen their ability to recognize and navigate data detours—that is, when discussions stray from the data at hand. As data conversations become routine in your coaching spaces and team meetings, the magic of data-driven conversations takes the stage, playing the most crucial role in moving teams and providing accountability to action.

What this Looks Like at Ashthorn High

At the end of the semester, the team lead at Ashthorn High wants to do a deep dive into ninth grade data to reflect on the team's progress. They've created a PowerPoint deck with charts and summaries, and plan to walk the team through the slides at the next meeting. The coach asks a powerful question: “What is the purpose of bringing the team together to look at this data—what do you want them to do with it?” This moment shifts the conversation. The team lead reiterates their goals around ninth grade on-track status and students earning B's or better. They also speak about supporting young people in their transition to high school and helping the adults do this to the best of their ability. The coach responds and says, “What I am hearing is that the team is committed to these goals, and one way to get us to those

goals is to look at data—to hold the mirror up to what is really happening at Ashthorn High and identify action steps moving forward.”

The coach introduces the ATLAS Looking at Data protocol and offers to model it in the session. The team lead participates in the protocol as a team member would, engaging with the data without needing to have all the answers. After the protocol, they debrief together: What parts of the process helped surface meaningful insights? Where might teachers feel stuck or push back? How could the data set be narrowed to focus on a few key questions? What norm will you need to emphasize to keep the conversation productive? The team lead realizes that instead of just presenting data, they can facilitate a collaborative inquiry space—one where team members wrestle with the data together, ask tough questions, and co-create the next steps. They leave the coaching session with a refined data set and a protocol to use at the next team meeting.

5. Call in the Experts—Not Just the Data

There will inevitably be times when the transformed data doesn’t address the questions your coachee is grappling with or is unable to motivate them or their team to action. In these moments, it’s important to help your coachee find the right technical support. Encourage them to connect with someone at their school, district, or even within your own organization who can provide the necessary expertise. Building relationships and connections across teams is key to resolving these challenges and ensuring continued progress. Coaching in this context means more than just encouragement—it’s about helping your coachee navigate systems, ask the right questions, and build the confidence to advocate for the support they need.

What this Looks Like at Ashthorn High

The team lead at Ashthorn High expresses growing frustration. They’ve pulled GPA and attendance data for the ninth grade, but it doesn’t fully address the core questions their success team is wrestling with—particularly because they have learned that grading practices vary dramatically across departments. “We don’t have the right information to share with teachers if they’re unwilling to open up their gradebooks,” the team lead says. “It feels like a dead end.” Rather than trying to troubleshoot the issue alone, the coach helps the team lead map out a broader support network. Together, they identify two key allies: A district data strategist who can help disaggregate GPA trends by subgroup and department. A colleague in the math department who’s been experimenting with standards-based grading and may be willing to share insights—and even model transparent grading practices. The coach and team lead draft a few targeted questions to guide their outreach and schedule time to meet with both contacts.

As I continue to embrace the belief that everyone can lead with data, I've come to realize that the most powerful data work doesn't start with a spreadsheet or dashboard—it starts with a conversation. It's in those moments of reflection, inquiry, and collaboration that data becomes more than numbers. It becomes a mirror, a catalyst, and a map for moving forward. The phrase my first NCS coach shared still resonates deeply: "Right data, right people, right time." But experience has taught me that one more element is essential: the right conversation. Because even when the right data is in the room with the right people at the right time, progress stalls without purposeful dialogue. We can spend hours circling the issues, leaving teams feeling more confused than clear.

The good news? The person who sparks that conversation doesn't need to hold a formal data role or possess technical expertise. They might be a teacher, a team lead, a counselor, or a principal—anyone willing to ask a good question, facilitate a discussion, and stay curious about what the data might reveal. In schools, data is abundant. What we need more of are people who can make it usable and meaningful.

By building educators' comfort, competence, and confidence to take on this role—by expanding ownership of data leadership—we can transform how schools learn. We can ensure data is not just presented, but acted on. And most importantly, we can ensure that every data conversation centers the people we're ultimately here for—our students.



Above: A student sews a wallet during a field work experience.

Project Cards

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Forces At Play!

Samantha Lee, Jessica Amante, Jordan Fields & Sinyoung Choi

Third Grade

High Tech Elementary

In the Forces at Play project, third grade students designed and built cardboard arcade games inspired by Caine's Arcade and Shane's Inspiration Playground in Los Angeles. Created for kids, families, and community visitors, the games were designed to be fun, accessible, and easy to play. Constructed from recycled materials, they included simple machines like levers, pulleys, and inclined planes. Working in teams, students used the engineering design process—planning, building, testing, and improving their games before presenting them at a public exhibition. Through this process, they explored science concepts related to forces and motion, including how pushes, pulls, gravity, and friction affect movement. Hands-on lab activities and field work brought these ideas to life.

Students also strengthened their literacy skills by researching and writing both informational and opinion pieces about their games. In math, they applied measurement, graphing, and geometry to design and construct their game structures. The final arcade games reflected learning across multiple subjects. Science supported the mechanics, while writing and math helped students communicate and refine their ideas. The result was a fun and engaging demonstration of their creativity and understanding.

Teacher Reflection

This project gave students a meaningful way to explore science through building, collaboration, and creativity. The engineering design process came to life naturally as students tested ideas, improved their designs, and shared their thinking with others. A continuous cycle of revision and documentation was at the heart of the work, helping students reflect on their progress and make purposeful changes. We saw joyful engagement as students played, tested, and revised their games, naturally using the academic vocabulary and eagerly applying what they had learned from their field work and lab experiences to make their designs work.

—*Samantha Lee*

Student Reflection

In the engineering design process, we made a lot of changes. For example, we changed the ramp into a bucket box to catch the ball. We also changed the puck and puck shooter many times because of friction. Friction made the puck stop and it wasn't as fun to play. I liked that we were to design our game and make it our own compared to the original air hockey game.

—*Noa S.*

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Graduate School of
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Debunked: Resisting the Power of Pseudoscience

Chenoa Musillo, Humanities

Brian Mi, Biology

Eleventh Grade

High Tech High International

Students engaged in a systematic literature review to investigate how pseudoscience has contributed to social inequities throughout history. Through this process, they examined case studies and scholarly sources that revealed how scientific claims have been misused to justify systems of oppression and discrimination. Students deepened their understanding of the importance of relying on credible, evidence-based research and the ethical responsibilities of researchers and scientists. They also explored how misinformation and biased science have been used to manipulate public perception and policy, reinforcing inequities rather than dismantling them. Some of the products created during this exploration included interactive museum exhibits, research posters, and coffee table books. By critically analyzing these patterns, students developed a more nuanced perspective on the relationship between science, society, and power.

Teacher Reflection

There is so so much that I learned. First of all, I learned how powerful our students are. Students pushed each other and made a book and museum happen--they needed guidance and direction but they made it happen. I learned that I need to be in the group chats for planning in order to monitor them. I learned that books need way more editing than one might expect. Most of all, I learned that things are not going to go as planned but they are going to work out.

—*Chenoa Musillo*

Student Reflection

I did really like the mixed classes with how we worked together and how it was planned in class. The art aspect was amazing and I felt like it was something everyone could do and gave students who don't necessarily connect to school a way to express themselves. I really liked the plaque cards to tie everything together. The end product was incredible and I'm so proud of everyone's work.

—*Leif*

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WWII & Peace Education
Shiloh Francis
Tenth Grade
Hawaii Technology Academy

Students explored multiple perspectives of World War II survivors, including children's experiences. They read excerpts from *A Child's View of Pearl Harbor—From Attack to Peace* and met the author, Dorinda Nicholson, to learn firsthand about her story and lifelong advocacy for peace. Guided by their PBL Driving Question—"How can we, as creative historians, share the stories of WWII survivors and the lessons of Peace Education using multimedia?"—students deepened their understanding through a visit from a Conflict and Peace Specialist from the local university. Inspired by these experiences, students created multimedia projects that humanized the realities of war and highlighted the importance of peace education. Their projects took many forms—videos, children's storybooks, speeches, websites, simulations, and artwork—all designed to share survivors' stories and inspire empathy and understanding. Students presented their work to guest speakers and reached audiences beyond the classroom. Some entered speech contests, others displayed their artwork on campus and at the local university, and one group invited the school community to fold 2,000 paper cranes as a collective wish for peace, which they later presented to two WWII memorials. Through this project, students discovered the power of connecting personal stories to history—cultivating empathy, deepening understanding, and recognizing the enduring value of peace in our global community.

Teacher Reflection

What went well was having students connect to primary sources of real stories of survivors and guest speakers. They had to carefully consider how their project could effectively showcase the person's story and how they would incorporate the need for peace alongside this story of war. The variety of project choices allowed students' creativity to shine and helped their audience connect with the skills people can and must develop to be peacebuilders, educators, and advocates. I have revised this project several times to incorporate local stories and field studies, as well as speech or video contests, so that students have a platform to showcase their learning to a wider audience. I encourage other educators to do the same.

—Shiloh Francis

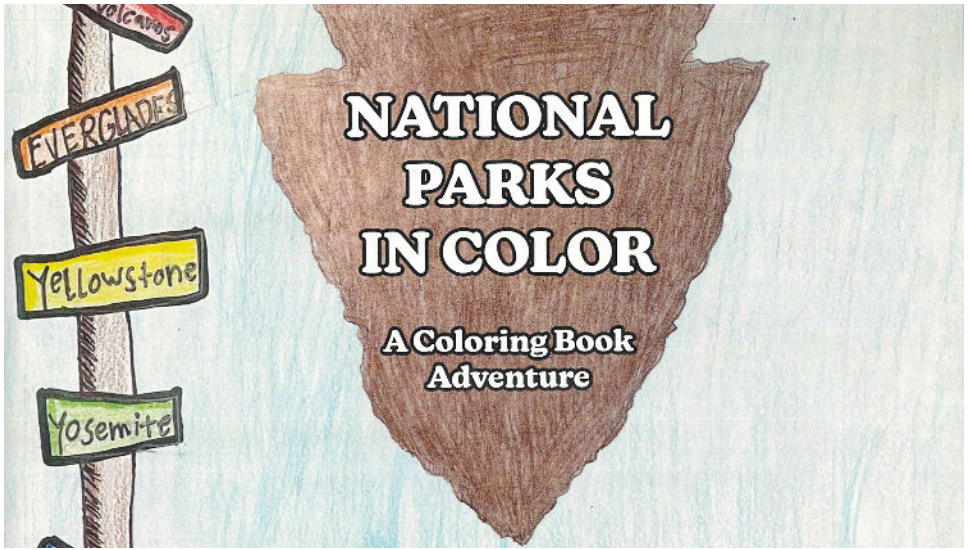
Student Reflection

Our Peace Education project had the most significant impact on me because I was getting to hear about children that were my age or younger and their experiences in war. I learned about the importance of sharing stories to others to build peace and communication.

—Helena M.

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National Parks in Color

Michelle Jaconette

Kelsey Cagatay

Noel Gikling

Brad Duran

Jeanette Gillie

Julia Kane

Fourth Grade

High Tech Elementary

During this project, fourth graders transformed into junior park rangers by creating a one-of-a-kind coloring book showcasing all the U.S. National Parks. They explored each park's history, learning about the Indigenous peoples who lived there for generations, and then took the role of scientists to investigate the parks' plants, animals, and the ways math helps explain their unique features. To complete the project, students collaborated with a local caricature artist to design a coloring page that captures the essence of each park. Their finished book is now available for purchase on Amazon.

Teacher Reflection

This project was an ideal blend of writing, science, history and math while also exposing students to the beauty of our country's national park system. I loved partnering with a local artist to help bring our coloring book pages to life and add some real-world expertise to our work. We were able to hone our skills of critique and revision as we took our art pages through several iterations before settling on our final designs. This project was a huge hit with the students and for me!

—Michelle Jaconette

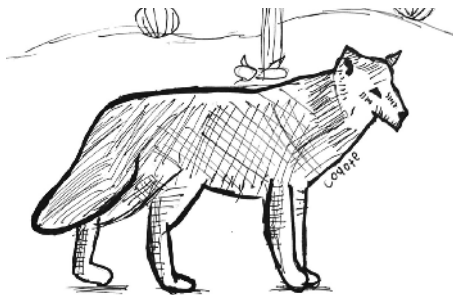
Student Reflection

I loved learning about my park and making my coloring page.

—Ruby S

It's so fun to be a published author!

—Christian Ibarra



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Migration Tails
Matthew Chapman, Humanities
Komla Shah, Math/Science
Sixth Grade
High Tech Middle North County

In science we explored various migratory routes of animal species and the human impact on migrating species. Students learned about scientific posters and incorporated their understanding and created their own, focusing on specific animals and migratory routes. Students also created a book, *Migration Tails*, that highlighted their posters and a narrative writing based on their focus animal. In humanities we collectively explored the complex and widespread phenomenon of forced and voluntary migration throughout history, detailing the socio-economic and cultural impacts on both individuals and communities. We explored specific examples of forced displacement, including the Canadian government's relocation of the Inuit to the High Arctic and the protracted struggles of Palestinian and Syrian refugees in host countries like Lebanon. Students also read about the major historical movements such as the Great Migration of African Americans, the Irish Potato Famine diaspora, and the Bracero Program, highlighting changes to traditional livelihoods and community structures due to government policies or crises. Students recorded stories of migration from people within their families and communities and shared them during a "Walk A Mile" exhibition that included listening to a human story, while wearing their shoes. Students curated the work and built a large shoebox to house the stories in. Finally, families added their own migration to a map that we have curated and hung in the school halls.

Teacher Reflection

I think that the students and families loved the exhibition and the walking in the shoes of the person they were hearing the story about, was powerful. They enjoyed the interview process and sharing the recordings with families. They also did a great job with their science posters which they displayed and were able to articulate their learning on exhibition night. Something I would do differently would be how I connected the learning between the science of the animal migratory routes and the migration of people. We were going to look into how migratory patterns of animals have changed due to human impact and compare that to human migratory patterns; this we could have done a better job of doing.

—Matthew Chapman

Student Reflection

We wrote stories about our animals to better understand how the animals migrated. My story was about the bar-tailed godwit and the writing helped me anthropomorphized without making the animal too human.

—Djanira

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Healthy You & Me
Ricardo Borja
Christina Savaglio
Ben Novotny
Kindergarten
High Tech Elementary

Students learned about and tasted different recipes consisting of a variety of ingredients through the Foodie Friday activities for six weeks. Students selected their top three recipes and split into small groups by taste choices. These groups were in charge of learning and practicing the step by step instructions for their recipe, which they then shared with the community at our exhibition. Students also had a chance to record a cooking show with the different recipes they learned and got some amazing feedback at the exhibition. Students presented with felt props to help them demonstrate these steps for a hands on activity for community members. For the writing pieces, students practiced writing whole sentences of the steps in their recipes while focussing on phonetic spelling and patterns of text such as capital letters, finger spaces and proper punctuation. They also created several art pieces of their ingredients using different mediums such as water color, color pencils and markers. The biggest idea that connected all the different pieces of this project was the process. Students worked through the different processes of working on draft work in their writing and drawings, to the process of learning the steps and sharing their recipes of choice with the community.

Teacher Reflection

One thing that stood out was how much pride and confidence students had with working on their art pieces. Students had learned how to use watercolor in one class and they really grasped the idea of using the materials carefully and in a way that was going to create such beautiful pieces. I would like to integrate more opportunities for students to attend field trips to places where expert chefs can teach them a thing or two about their world. It would also be great to integrate more expert chefs to come in and share recipes with the class. Another thing that would make this project better would be to integrate recipes that students may make at home. Giving students a chance to share recipes that they use for certain celebrations or traditions would allow us to highlight the different communities that students come from.

—Ricardo Borja

Student Reflection

My favorite part of the project was making the cooking videos for our parents to see. I also liked sewing our felt ingredients and watercolor.

—Santino I.

My favorite part was the cooking show because we got to eat it after we made it. It was super fun!"

—Kamiah D.

To learn more, visit hthgse.edu/unboxed



Epic Journeys
Juli Ruff, Humanities
Taya Chase, Math
Amilio Aviles, Physics
Ninth Grade
High Tech High

The Epic Journeys project explores why journeys are so essential to human's growth and asks students to uncover the value of sharing their stories as they explore and overcome challenges. Throughout the semester, students hiked local trails, worked through an obstacle course, snorkeled, camped, backpacked and boated across a section of the bay in personally designed and built cardboard boats. Through these adventures, students captured the joy, struggles and self growth through writing, collecting data, and learning about forces. Students also told the stories of their journeys through creating and sending postcards; making a mural that told the story of both the 6 million years of history of the land they camped on and the story of their time camping; creating graphical stories that showed their experience mathematically; writing articles; and much more.

Teacher Reflection

Getting students outside has such value, as does asking kids to try things that make them uncomfortable. Over and over again, students reflected on how they achieved things they never thought could or would, and were surprised by their own emotional responses to the experiences. We have done this project three times over three years, and each time it has held so much value for the students. Confidence is built out of competence, and competence is built out of experience.

—Juli Ruff

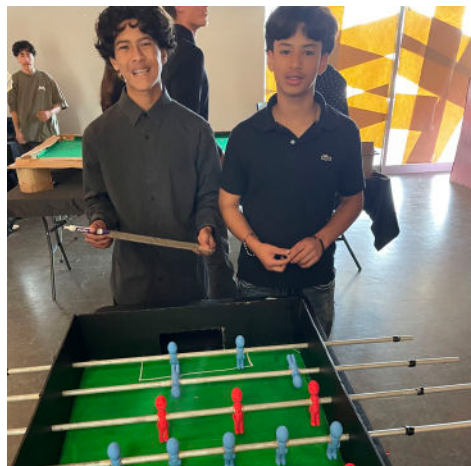
Student Reflection

As the night went on, we laughed and giggled more and played hide and seek. All that newfound friendship brought confidence and growth for me as a person. Camping in Anza Borrego at the Blair Valley campground was when everything changed. Early in the year, I was the kid sitting quietly in class, not wanting to raise my hand even when I knew the answer, and not wanting to face the failure of being wrong. I went from not being able to leave the only friend I knew, to being able to raise my hand, and shout out my ideas, while talking to so many new friends.



—Margo G.

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Expo del Sol: Cardboard Arcade

Amber George, Makerspace

Amy Doan, Math/Science

Eighth Grade

High Tech Middle Chula Vista

In Expo del Sol:Cardboard Arcade, students dove into the design process, iteration cycles, and construction techniques to build a functional and durable game that was tested, critiqued, and revised through peer critique during two mini-exhibitions. Physics concepts were explored via carnival and arcade games, measuring statistical outcomes, proportions, and applicable skills and how they relate to mathematical relationships. Fieldwork included visiting an arcade to research games and the arcade environment to inform their final exhibition where we hosted an arcade for families to experience their games.

Teacher Reflection

Through this work, we learned that material exploration and iteration reinforced all of the mindsets that we hoped to build and strengthen in project work. Students were engaged and motivated to have their games work and be durable for the final exhibition. It was also a project where teachers and students learned side by side - the final destination - was co-created. If this project was made again, even more time for critique and revision would be helpful, as well as to find a broader audience for the games, both for exhibition and curation of the final games.

—Amber George & Amy Doan

Student Reflection

I'd say honestly my biggest strength on the project was the planning—I was able to figure out what we needed to cut first and figured out what needed to cut outnext.

—M.L.

Something I could change during the project was being more of a leader- one of our teammates wasn't really helping a lot but I could have been more determined to get them on board.

—C.O.

I would do the arcade game project again just because I enjoyed having the freedom to create what I wanted.

—D.A.

To learn more, visit hthgse.edu/unboxed



Graduate School of
EDUCATION



Above: a student solves a chemistry problem on a whiteboard, observed by a peer.

How (and Why) to Do a Whiteboard Assessment

Michael Chin
High Tech High

When I started teaching, I favored “traditional” assessments that were similar to the ones I experienced as a student. These mostly consisted of quizzes and tests with written tasks such as, “Draw the Bohr model and Lewis dot structure for an element with an atomic number of 17.”

For many students, these quizzes and tests accurately assessed their understanding of the concepts they were learning in my chemistry class. However, I noticed that some students struggled to share their learning in written exam contexts, but were skilled at explaining concepts to their peers. Since I teach a chemistry class and not an exam skills class, the assessments were proving to be a barrier to these students’ learning.

There was one student in particular, who I’ll call “Alex.” He excelled in conversations with his peers and often shared his thoughts in class discussions, but his performance on written exams did not reflect the full depth of his understanding. I decided to design an assessment structure with Alex in mind: one that was rigorous and meaningful, but also highlighted his conversational skills.



Above: Students sit in two concentric circles for the whiteboard assessment.

The Assessment I Created for Alex (and Everyone Else)

The whiteboard assessment is essentially a social event. Students sit in two concentric rings of chairs, with those in the inner ring facing students in the outer ring. The students in the outer ring have whiteboards and other resources to perform the assessment. The students in the inside ring have a pencil and a rubric with which to assess the student across from them. The teacher assigns a different question to each student on the inside ring so that those students being assessed will tackle a variety of questions as they present.

Here is an example of a question students attempted to solve during a recent whiteboard assessment in my class:

Determine the reaction type, predict the products, and balance the equation for the reactants:



Within a designated time period (I normally do 2–3 minutes), students in the outer ring complete the question assigned to them by the student on the inner ring. As each outer ring student presents to the inside ring on their whiteboards, their peers on the inside ring underline habits of success in each



Above: Students in the inner circle assess their peers' responses.

area of their peers' rubrics. They also support the student if they get stuck. As these are one-on-one presentations, students are usually less nervous to share their thoughts and better able to demonstrate their understanding and content mastery with a focus on basic presentation skills. To further remove pressure, I provide students with the list of questions ahead of time so they can practice.

I stand in the center of the circle, so I can see every student present. I take note of who needs help and encourage their peers to correct them in real time. When the timer goes off, students in the outer ring rotate so they can interact with someone new and demonstrate their knowledge on another question. The students rotate two chairs at a time, all the way around the ring.

After the outside ring finishes their rotation, students from the outer and inner rings swap and repeat the process. This gives every student a chance to assess and be assessed by their peers. In total, this assessment takes about 60 minutes.



Above: Students doing a whiteboard assessment.

Supplies You'll Need for this Assessment

- Enough mini whiteboards (I use 12x9 inch boards) for half the students in your class to have one
- Whiteboard markers
- Whiteboard erasers
- Enough printed copies of the rubric for half the students in your class to have one
- A list of content goals/questions for students to show their competency
- Chairs set up in two concentric rings, facing each other (see Photo 1).

Setting up for Success (and Troubleshooting)

Students pass this assessment by proving they can apply the concept(s) to multiple questions as they rotate around the circle. If a student can't complete a question, I encourage their peer grader to talk them through the question.

I often have students practice on the whiteboards with each other in the days leading up to the assessment so they can support each other and understand the expectations. If a student doesn't understand a concept well enough to explain it, this becomes evident during the practice rounds and we can deal with it before we get to the actual assessment.

Should a student be unable to do the assessment, there are a few options. One is for them to sit with me as a partner and show me where they are getting stuck. Other times—for example, if a student has been absent for a chunk of time leading up to the assessment—I will have them observe first and see if they would rather get assessed later.

Over the years, this whiteboard assessment has evolved into a core exam practice in my class. It holds students accountable to one another to support their learning, while empowering them to lean into their communication strengths. It necessitates that they understand the content to a level at which they can teach each other, a level deeper than a traditional exam offers, while at the same time seeming more approachable than other methods. It allows me to efficiently check multiple students' level of understanding while encouraging them to interact and demonstrate their learning. While I only set out to design an assessment for Alex, I ended up creating a platform for all students to shine.



Above: A student checks in with Massa's timers.

The Clocks that Changed My Classroom

*Massa Assaad
High Tech Middle*

It started with a simple idea: to bring a 60-minute visual countdown clock into my class. What began as a classroom management tool turned into something bigger—a small shift that made the room more predictable, accessible, and humane for every learner.

Before I brought in the clock, my classroom was a guessing game. Students were constantly asking how much time was left, and I was juggling activities while trying to keep an eye on the time. Now, the visual clock gives my students independence while giving me peace of mind.

You may be thinking “What’s the big deal? I already have a clock in my classroom.” What makes this clock different from a regular classroom clock is its design. Instead of requiring students to read numbers or calculate minutes, it makes time concrete and visible. The shrinking wedge of color is intuitive, which means it supports all learners—those who can’t yet read a traditional clock, those who struggle to grasp the abstract concept of time, and those who simply benefit from a clear visual cue.

It didn’t take long to see how this change benefited the whole class. That little clock quietly honors students’ needs. For example, it gives every learner access to the invisible: time itself. Some students rely on the visual cue to stay engaged, others use it to self-regulate emotions when a task feels

overwhelming, and still others gain confidence because they no longer need to keep asking, “How much longer?” That one clock transforms something abstract into something concrete.

But the real magic happened when I paired the visual clock with a smaller digital timer I started using for everything else. Five minutes of reading? Timer. Three minutes for a round robin discussion? Timer. One minute to present your point? Timer. Debates suddenly had a shape. Peer sharing felt fair. Even transitions were smoother because the clock gave us all a shared sense of accountability.

The bonus? It also happens to be a beautiful example of Universal Design for Learning (UDL), which emphasizes providing multiple means of representation so every student can access the same information (CAST, 2018). In fact, a growing body of research, such as a systematic review on visual schedules and behavior regulation in children with ADHD (Grey et al., 2009) and studies on how visual timers affect anxiety and performance (Hallez & Vallier, 2025), suggests that visual timers can help reduce anxiety, improve focus, and support executive functioning skills by giving students a clear sense of predictability and control.

Now, the visual clock gives my students independence while giving me peace of mind. Instead of mentally calculating how much time remains in the period, I can glance once and know instantly whether we have a lot or a little time left, and adjust my pacing on the spot. Pairing it with a digital timer creates a powerful rhythm: The visual clock grounds the students in the flow of time, while the digital timer helps me structure transitions and keep activities on track. Together, they form a perfect marriage—the clock provides the big picture, the digital timer sets the rhythm, and both work in harmony to create a smoother, calmer, more focused classroom for everyone. These days, my classroom runs on two rhythms—the steady sweep of the 60-minute countdown and the quick beats of the digital timer. Together, they keep us moving, balanced, and honest with our time. More than just tools, they’ve become a quiet framework for respect: respect for the task, each other’s voices, and the minutes we share together each day.

It started with a timer, but what I really found was a way to give my students ownership of their time. And that, it turns out, was the most powerful classroom shift of all.

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Above: Students prepare for a peer-critique session in class.

How Students Can Use Tuning Protocols for Peer Critique

Randy Scherer

High Tech High Graduate School of Education

Educators at High Tech High and many other schools use the “Tuning Protocol” as a powerful tool for educators to bring an idea for a lesson or unit to a group of colleagues or students for discussion and feedback.

The tuning protocol is particularly effective for focusing the collective perspectives and expertise of a small group of people on a teacher’s ideas and questions for an upcoming project or lesson plan. The tuning protocol follows a prescribed linear path, detailed below. One feature that makes it useful is that the panel of educators or students listen and then ask questions, seeking to thoroughly understand the presenter before offering feedback. Another factor is that each step in the process requires the participants to take turns, ensuring all voices are heard.

With simple revisions, tuning protocols are also very useful in the classroom, helping students share their own ideas with peers for critique. In this format, a student presents her ideas for her project work to a small group of peers, who listen and perhaps look at a draft of her work. The presenting student then shares a driving question that will help the panel focus...

A teacher can divide the class into groups of four, and act as the timekeeper and guide. With practice, every class member can receive structured peer

feedback in just about an hour using either of the protocols linked below.

Aside from the immediate benefit of facilitating structured peer feedback, this type of critique has the potential to improve classroom culture. With practice, students adopt the protocol in less formal settings. After students develop their own expertise with the tuning protocol, they learn to listen to each other (or you!), and then say, “Aha! I have a clarifying question...”

15 Minute Tuning Protocol

This protocol is for students to share their in-progress work and thinking with their peers. The goal is to solicit peer feedback, elicit questions, and receive suggestions for continued improvement and learning.

This exercise takes approximately 14 minutes per presenter. The teacher will arrange students in groups of four and act as a class-wide facilitator and timekeeper. With practice, all students can have their ideas critiqued within one hour.

Norms

- Share the air (or “step up, step back”).
- Be hard on the content, and soft on the people/
- Be kind, specific, and helpful.

Project Overview (3 min): The presenter gives an **overview of their idea** and shares his/her thinking about key design issues. This can include sharing drafts, plans, or other artifacts to help the group understand his/her ideas. The presenter should share a dilemma or question that he/she is working on. Participants are silent.

Group Think Time (1 min): Participants write ideas about **what they want to know more about, questions, and any ideas they have for the presenter**. The presenter is silent; participants do this work silently.

Clarifying Questions (2 min): Participants ask “**clarifying**” questions of the presenter. Clarifying questions help the group better understand the presenter’s ideas and tend to yield brief, factual answers (i.e., “I will do three interviews,” or “My rocket will have four large fins.”)

Probing Questions (2 min): Participants ask “**probing**” questions of the presenter. Probing questions reveal the presenter’s thinking and logic. Probing questions tend to start with “how” or “why.”

Discussion (5 min): Participants begin by offering **positive feedback**. Then they identify **opportunities for growth, improvement, or change**. What are the strongest or most exciting parts of the presenter's idea? How might we build on these? Will we be able to complete this idea? Where do we see areas for improvement? How might the presenter need our help?

During this time, the presenter remains silent and takes notes. Participants should direct their comments to each other, not the presenter. The facilitator may need to remind participants of the presenter's initial dilemma question.

Reflection (1 min): The presenter has the **opportunity to respond** to the discussion. The presenter may share what struck him/her about the participants' comments and what next steps might be taken as a result of the discussion. Participants are silent.



Above: A teacher consults with a student on a project.

Seven Questions to Find Out If Your Question is Essential

*Alec Patton
High Tech High Graduate School of Education*

One of the central components of project-based learning is the “essential question.” The essential question is the engine that propels the inquiry in your project. A well-crafted essential question requires students to conduct serious research, and also inspires conversations among friends at lunch, and family at dinner.

Expect to come up with a few versions of your essential question before you settle on one that works. You may want to share draft versions with students to see which ones capture their imaginations!

Here are seven questions to help you develop an engaging and profound essential question:

1. What’s the simplest possible way you could ask about the most complex ideas in your project?
2. What question emerges naturally from a real problem or need that your students could actually help address?
3. Can this question be answered with a google search?



Above: Students participate in an environmentally-themed upcycling fashion project in their humanities and chemistry classes.

4. Is the essential question a “leading question?”

- A leading question contains assumptions about what the “right” answer is. For example, the question “How can we help integrate refugees into our community?” assumes students already agree their community should accept refugees. Leading questions do significant cognitive work for students, and steer them to specific responses. A student who disagrees has no entry point. Compare this to “Why is there a refugee crisis and what should we do about it?” which requires students to grapple with fundamental questions first.

5. Can students connect every single activity in your project back to your essential question in a meaningful way?

6. Will students want to keep talking about this question when they aren’t in class?

7. Will different students be able to explore this question in different ways?



Above: Two students collaborate on a writing task.

The Literacy Crisis is Solvable, and DEEP San Diego is Obsessed With It

*Allison Ohle
DEEP San Diego*

Third-grade reading proficiency is one of the clearest indicators of future success. Students who are not reading at grade level by the end of third grade are four times more likely to drop out of high school (Hernandez, 2011). But in communities like southeastern San Diego, where systemic under-investment has shaped generations of educational inequality, only 28 percent of third graders in the Lincoln school cluster meet this milestone—compared to 53 percent district-wide.

The connection between a lack of reading proficiency and low-income background is well-established. And while the barriers are real, this is a solvable problem—not simple, but solvable. For more than a decade, DEEP San Diego has worked alongside families, schools, and educators to close this gap. And we've seen results: In the last three years, reading proficiency among third graders in our partner schools has risen from 28 percent to 34 percent—growth that outpaces the surrounding cluster. Our work has shown that when we focus, align, and act together, change happens.

We have developed a method for growing reading proficiency with three elements: Preparing for kindergarten, reading by third grade, and learning beyond the classroom.

1. Preparing for Kindergarten

We engage families and caregivers from birth to age five with coaching, bilingual workshops, and access to books, ensuring that children enter kindergarten ready to thrive. This work must begin early, because families are a child's first teachers. And it must be asset-based, building on the knowledge, language, and strengths families already bring, rather than treating them as gaps to be filled.

2. Reading by Third Grade

Every K-3 teacher in our partner schools receives professional development in the science of reading, as well as coaching to support structured, phonics-based instruction. School leaders participate in professional learning communities to align instructional practices across classrooms. Through our new Literacy Liberators pilot program, trained tutors from the community provide small-group, phonics-focused tutoring inside classrooms during the school day—expanding instructional capacity and ensuring that more students receive individualized support to become confident readers. This intervention will only be effective if the foundational understanding of the science of reading is already well-understood by the teachers. Specifically, a strong foundation in phonics and the ability to decode words is necessary but insufficient on its own. Teachers need to be prepared to develop fluency, academic language, and comprehension once these foundational phonics skills are mastered.

3. Learning Beyond the Classroom

After school and during the summer, we provide small-group tutoring in reading along with STEAM enrichment activities designed to build confidence, content knowledge, and curiosity.

This model works because it is comprehensive, relational, and focused. It's built not around isolated interventions but around coherence and continuity, with families, educators, and communities all playing essential roles.

Based on our work, we have identified three principles that families, schools, and communities can use to ensure students in under-invested communities get support to learn to read.

1. Culture + Systematic Instruction = Reading Proficiency

Reading isn't just academic—it's deeply emotional. Students need safety, belonging, and encouragement to take risks with text. Schools that invest in social and emotional learning (SEL), advisory structures, and relational culture already have fertile ground. But culture alone is not enough. Without explicit, systematic instruction in foundational reading, too many children will be left behind.

For example, when children are encouraged to examine mistakes they've made, they can see the opportunity to learn. There are two kinds of mistakes that we learn from: competency errors and proficiency errors.

Competency errors are the kinds of mistakes we make when we don't yet know something—when there is content that needs to be learned. When it comes to decoding, students need direct instruction in spelling patterns so they don't have to guess. Proficiency errors, on the other hand, are the mistakes we make when we need more practice, fluency, and exposure to a skill or behavior. This is where strong relationships, safe classroom cultures, and a commitment to the process (not just the product) really shine.

You can see this balance in action during a small-group tutoring session. A Literacy Liberator works with three first graders on short “a” vowel patterns. When a student reads “cap” as “cop,” the Literacy Liberator smiles and says, “Let’s listen to what your mouth is doing—what sound do you feel when you say a?” The student catches the difference. The group uses letter tiles to swap vowels and blend words like cap, cop, and cup. They read a short decodable story together, celebrating when one student correctly reads, “The cat sat in the bag.” It’s a small win born of both warmth and rigor—trust and belonging paired with explicit, systematic instruction. That’s the Goldilocks zone where real reading proficiency grows.

2. Purpose Drives Engagement

Reading sticks when it is connected to meaning. When students are immersed in authentic projects, inquiry, or real-world contexts, they see reading and writing as tools to ask big questions and share their ideas with the world. Schools that embrace project-based or inquiry-driven models are well-positioned to harness this if they deliberately embed reading, writing, and language instruction into the heart of their work, rather than as an afterthought.

For example, when students are learning specific spelling patterns, they can become “word detectives,” finding those same patterns in the texts they’re reading for a class project. During small-group phonics practice, a Literacy Liberator tutor can introduce the -ing ending, and later that day, students will notice -ing words popping up in the non-fiction text they’re reading for their project. The teacher points it out for the whole class when she hears one of the students recognize it at her small group table.

It’s a simple but powerful shift: Foundational skills no longer seem like isolated drills but purposeful tools for communication. When students see that decoding and spelling help them express their ideas and participate in something meaningful, engagement deepens and reading sticks.

3. Tools and Training Matter

Whole-child schools often have the right ethos but lack the technical tools of evidence-based early reading instruction. Training K-3 teachers in the science of reading and aligning practices across classrooms ensures that the culture and purpose translate into measurable reading growth.

For example, elementary teachers at DEEP schools all participate in the California Reading and Literature Project’s RESULTS training, and receive coaching throughout the year to fortify the practices that flow from the latest research on what works with literacy instruction. Resources to build capacity at your site may include local university partners, the Reading League, and even curriculum publishers (i.e., Amplify and Collaborative Classroom).

Nothing in this piece has likely come as a huge surprise to you. In our experience, what’s often missing in schools isn’t knowledge, but focus. Schools that already embrace student-centered and whole-child approaches are well-positioned to lead the next wave of reading equity work—if they choose to make it central. That doesn’t mean abandoning their values, but leveraging them.

We don’t need a new vision. We need alignment between values and practice. If we believe every child is capable of reading and thriving, we must equip them with the tools to do so—and we must do it together. The reading crisis is solvable, and we’re obsessed with it. We can close the gap—with skill, love, and a shared commitment to equity.

Actions School Leaders Can Take to Improve Reading Proficiency for All Students

To Start Tomorrow: Focus and Diagnose

- Walk through K-3 classrooms and look for systematic phonics instruction. Are students practicing decoding explicitly every day?
- Ask three questions:
 1. Are teachers using consistent language for phonics instruction?
 2. Do teachers have the data they need to identify which students are struggling with decoding vs. fluency vs. comprehension?
 3. Are small groups being used strategically, or just as “seat work”?
- Create a “Literacy Snapshot” of your site. This involves identifying where phonics instruction is strong, where it’s inconsistent, and where teachers need support.

Why this matters

You can't fix what you haven't seen. Reading outcomes rise fastest when leaders have a clear, shared picture of instructional practice across classrooms.

To Start in a Month:

- Ensure every K-3 teacher (and their instructional coach or literacy lead) receives science of reading-aligned professional development.
- Partner with the Reading League, the California Reading and Literature Project, or local university faculty who specialize in early literacy.
- Create professional learning communities (PLCs) for principals and literacy coaches to calibrate what "good reading instruction" looks like.
- Use collaborative data reviews to identify which students need decoding intervention (foundational skills) vs. which need comprehension and vocabulary acceleration.

Why this matters

Isolated training doesn't stick. When professional learning is ongoing, aligned, and connected to real student data, it transforms instruction.

To Start Next Year:

- Launch an in-school tutoring program to extend instructional capacity during the school day. Partner with local universities to recruit trained tutors or paraeducators who can deliver phonics-based intervention in alignment with classroom instruction.
- Ensure project-based or inquiry work is language-rich: integrate decoding, fluency, vocabulary, and comprehension practice into real-world learning.
- Use DIBELS or i-Ready data to track student progress by sub-skill (phonemic awareness, decoding, fluency, comprehension) and make literacy growth part of every school's success metrics.

Why this matters

Sustainable systems—not one-off interventions—close literacy gaps for good.

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Above: Diagon Alley potion stall ready for exhibition .

Learning Danish by Selling Potions

*Trine Agerbak
Grindsted Vestre Skole*

Imagine peering down an ordinary school hallway, clutching an entry ticket that was sent to you. You turn a corner and stop in front of a wall. There, you spot a concealed opening and step through to Diagon Alley, the hidden magical market from JK Rowling's Harry Potter novels. All types of wizards are buzzing around the street. A few are checking tickets and welcoming parents, teachers, and a few journalists. Others are selling magic elixirs, cookie frogs, jelly beans, and lollipops disguised as brooms. Selling these items is an excellent way to start a conversation with the guests, and this is important—in fact, it's the whole point of the exhibition.

In real life, the “wizards”—who range in age from 5 to 17—are students in an intensive Danish language program and come from a host of countries, including China, Congo, France, Germany, Kenya, Latvia, Lithuania, Moldova, Poland, Romania, Thailand, and Ukraine. They can spend up to three years in this program learning Danish before joining “regular” Danish classes. If you look around Diagon Alley you'll also see me, in a cloak helping the students navigate sales, and supporting their language as needed.

This exhibition is the culmination of The Harry Potter Project, an eight-week unit I designed and led with my teaching team in November and December of 2024 at Vestre Skole (School) in Billund, Denmark. Helping my students run immersive theater events was not the sort of work I took

on early in my career, to put it mildly. But four years ago, the municipality of Billund decided that all schools should adopt project-based learning techniques,¹ and it was the best thing to ever happen to my teaching career. I have changed from being a teacher who focused mostly on delivering information to my students to one who develops their hard and soft skills through innovative projects like this one. I have gone from seeing myself as a lecturer who provides worksheets to a facilitator who collaborates with my students and colleagues.

How The Harry Potter Project Began

The Harry Potter Project took its first steps in June 2023, when we asked our students what they would want to work on the following school year. In order to do this, we followed a process adapted from the University of Reykjavik:

1. Individual

Each student is given 10 minutes to write on post-it notes all the things they would like to work on the following school year.

2. Small Group

Students divide into groups of four, where they share their post-its and organize them under common headings.

3. Full Class

A member of each group writes their headings on the board. Then each student votes for their favorites by putting a dot next to it (each student has two votes). After each round we eliminate the headings with the least votes, and keep going until we have five headings left.

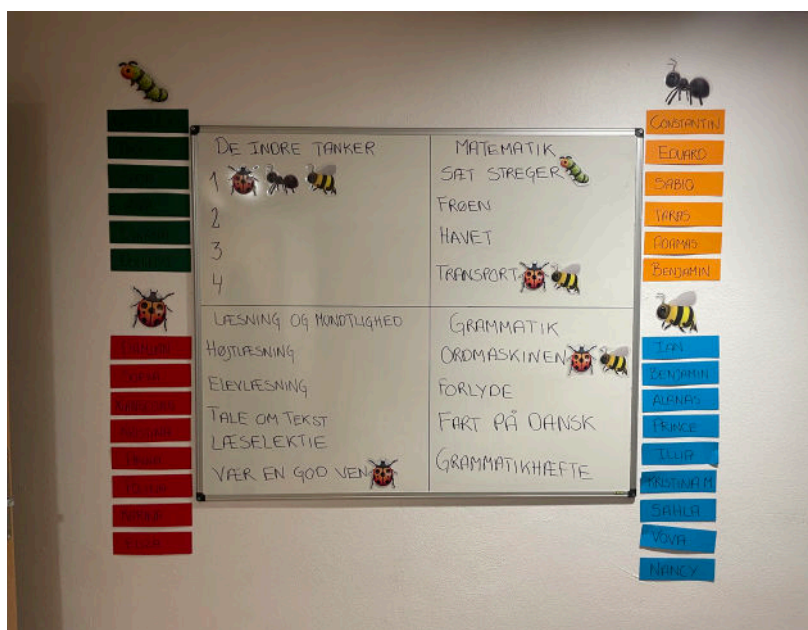
4. Teachers

The teachers take the five headings and work them into the projects they will create in the coming school year.

Using this process, students settled on the following five ideas:

1. Stars, planets—a travel through the universe
2. Jump and run—get a move on
3. Harry Potter and the magic universe
4. Hi, I am a robot—technology and society
5. Games

The teaching team decided to begin the year with a Harry Potter project focusing on the first book in the series, *Harry Potter and the Philosopher's Stone*.² We chose this because our students were aged 5–17 and it is the most accessible book in the series—also, most students were already familiar with



Above: A scrum board in the classroom.

the story. We decided early on that we would design a single project for all students and adapt the topic to different ages. We communicated our idea to students' parents, and for the younger ones, we got their parents' consent to read the book.

Organizing Student Work

Each school day was divided into two parts. In the morning we focused on reading the story, learning math concepts, writing, and exploring the fantasy genre. In the afternoon, we focused on making products. Students could choose what to make from a menu of products designed to suit their range of ages. Once a student chose a product, they had to commit to completing it.

What does group work look like when you have 50 students who speak 11 different languages? There is a lot of fun, frustration, laughter, and pride—as well as careful scaffolding from the teachers.

First, we split them into groups that consisted of students who spoke multiple languages—this gave them more opportunities to practice their Danish. To ensure everyone knew what they were working on each day, we used scrum boards (see photo above). Scrum boards are tremendously helpful to projects because they allow students to choose their task and require them to explicitly decide what they will be doing. It's also easy to check the board to



Above: Flying keys overhead at the Diagon Alley exhibition.

see what any student should be doing.

At the end of each day, we checked in to see if students had completed the tasks on their scrum board. We also discussed where they had worked well together and where there was room for improvement. We then looked at their products to assess the quality. At this point, we took a cue from Hogwarts and awarded (and sometimes took away) “house points.”

Organizing Teacher Work

Teacher collaboration is demanding—especially in a project as complex and all-encompassing as this one. I’d like to say it was all smooth sailing for our teacher group in those eight weeks, but it was not. We had to work hard to communicate well and provide detailed information when one teacher handed over responsibility for one aspect of the project to another. We spent a lot of time improving this process, sharing documents in Microsoft Teams and having weekly team meetings where we focused on the week ahead.

Each teacher was assigned a specific area in which to work. I focused on writing, grammar, and vocabulary. My colleague Helle worked on reading, Lene worked on movie analysis, and Leif focused on math.

The product-creation process was more fluid, because we had more groups working at the same time than we had teachers. To create consistency, we made sure each teacher was responsible for signing off on a specific category of finished products.

Preparing for Exhibition

We made all the smaller products during the first seven weeks of the project. Then in the final week and a half, we built the large elements that would bring Diagon Alley to life, beginning with painting paper to cover the walls with scenes that provided a stunning background to the exhibition. Next, students assembled and decorated the booths. On the day before the exhibition, we put everything together and finished the last details. At this point, students were also developing and rehearsing their presentations. To make sure they were ready without making everything seem over-rehearsed, we asked students to write an account of their process throughout the project and specify what they did with each other.

Exhibition Day

Diagon Alley was bustling. Parents from other grades couldn’t help but stop by, drawn in by the sounds of chatter and mystery. Students explained the sorting hat they created, and spectators enjoyed trying it on. At one

booth, two boys used all their salesmen skills to make sure everyone bought at least one chocolate frog. At the broom stand, an older gentleman and a student conversed in Danish, intensely and passionately. This was especially satisfying to see, considering that the student had only lived in Denmark for six months.

All over, students were engaging with their visitors—sometimes with assistance from teachers, but mostly on their own. It all felt, not to put too fine a point on it, magical.

Reflections

In the week following the exhibition, the teachers reflected on the project. In retrospect, we realized we did not explain its full scope thoroughly enough at the start, and students had a hard time seeing the big picture. However, despite this confusion (and perhaps because of it), the students were able to contribute their own ideas to the project, many of which improved on our initial concepts. It was fun to learn about Harry Potter and the topic certainly kept students' attention, but what was most important was developing their ability to communicate with native Danish speakers who didn't already know them.

When we spoke to students about the project, what came up most often was their interest in Harry Potter. About two-thirds were already familiar with Harry Potter and Hogwarts, but even those who discovered it during our project loved working in this magical world. Students also told us they liked the way the day was divided into academic mornings and creative/maker afternoons. One concern that came up was that it was hard in the beginning, because they couldn't imagine the final product. But once they understood that, they found it easy. This also meant that students worked really hard and occupied themselves with the details, wanting the products to be close to perfect. It turns out that when you combine a compelling topic, an authentic audience, and robust project management, the results are magical!

Appendix: Learning Goals and Products

See below for a list of the skills we wanted students to develop in this project and the products that showcased their learning.

Literacy

- Gain familiarity with conventions of the fantasy genre
- Build genre-specific vocabulary
- Read portions of *Harry Potter and the Philosopher's Stone* in Danish independently (students aged 8–17). Read sentences about Harry Potter (students aged 5–7).

- Listen to complex text (the teachers read a chapter out loud each day).
- Grammar (Harry Potter themes)
- Film analysis
- Book reports
- Spelling (youngest students)
- Math
- Make drawings to scale
- Solve Harry Potter-themed math problems
- Plot product materials

Soft Skills

- Have conversations with native speakers
- Engage with the creative process
- Make a plan and carry it out
- Work in groups and overcome different obstacles that they meet along the way
- Learn to play Quidditch (PE)
- Develop presentation skills
- Develop creative thinking skills

Products

- Diagon Alley—make the booths (3D stores)
- Storefronts (painted)
- Cobble stones (painted) for the sidewalk
- Elixirs
- Sorting hats
- Brooms—in real size
- A broom stand
- Book spines—with names of the books from the movies
- Signs for the storefronts
- Entrance wall and tickets
- Frog cookies (baked by the students) and boxes for them
- Lollipops as brooms
- Jelly beans in bags
- Flying keys
- Hama beads—patterns from Harry Potter

Notes

1. In Billund we use actually use the English phrase “Playful Learning”
2. Published as *Harry Potter and the Sorcerer’s Stone* in the United States



Above: Marco and his students at High Tech Middle Chula Vista.

PBL in a Math Class: A Journey to the Starting Line

*Marco Aquinde
The Bishop's School*

There are many simple and effective ways math teachers can gradually introduce project-based learning (PBL) into their classrooms, even if they teach at traditional schools. The lessons that follow come from the five years I spent at High Tech Middle Chula Vista, which is situated within the High Tech High (HTH) charter school system, including three as a math/science teacher. At High Tech Middle schools, math and science is typically integrated into a single classroom, and a dual-certified math/science teacher collaborates with an integrated English/history, or humanities, teacher, creating opportunities to design projects across disciplines.

My projects commonly started with a mathematical focus and then transitioned into science, engineering, or design. For example, in one interdisciplinary project I facilitated with my humanities teaching partner, students learned about scale factors and proportions as part of a project launch, and then applied these mathematical concepts to chemistry and food science projects. This culminated in an exhibition where students prepared cultural food (a Filipino dessert called *turon*) and served it to the school's community partners. In another math/science project about solar cars, students studied gear ratios before shifting their focus to renewable energy, iterative design, and prototyping. To exhibit their work, we held a single elimination-style race tournament. Such subject-matter integration created an ideal platform for experimenting with PBL.

However, in 2023, I left HTMCV to teach at an independent school in San Diego. At my new school, math and science classes were not integrated as they were at HTH. Without interdisciplinary projects to drive student inquiry, I relied more heavily on direct instruction to keep up with the curriculum.

As I adjusted to this shift, I began to notice a pattern. In *Building Thinking Classrooms*, Peter Liljedahl writes that in traditional classrooms, “only about 20% of students” behave in ways we expect (2021). The rest, he writes, often resort to faking, stalling, slacking, or mimicking—and I saw all of these behaviors firsthand. For example, in our unit on percentages, I delivered a series of lessons on how to convert between fractions, decimals, and percents using an “I do—We do—You do” strategy. My students frequently remark that math doesn’t feel “real world,” and here was something that felt authentic, at least to me. Understanding percentages meant understanding taxes, discounts, and markups. After mimicking my steps, such as dividing the numerator by the denominator to convert a fraction to a decimal and then multiplying the decimal amount by 100 to convert to a percentage, students seemed to get it. But once I released them to practice independently, it was as if the lesson had never happened.

I remember feeling frustrated. My goal had always been to create a student-centered classroom where students felt capable of applying their understanding, persevering, and problem-solving. Yet there I was, lecturing more than I wanted (and more than they wanted), engaging the same few students, and wishing my classroom offered more opportunities for student autonomy.

Feeling despondent, I received an email from a former colleague about an opportunity to join an international professional learning community called Sandcastle. In this community, participants choose a project of interest, reflect on its growth areas, challenges, and strengths, and hold space for other educators to do the same. The group’s name felt fitting: Much like building a sandcastle, teaching is an iterative process. When a sandcastle doesn’t look or feel quite right, you can quickly and intuitively assess what changes should be made. The same can and should hold true for teaching.

This was it! My decision to join the Sandcastle community was fueled by dissatisfaction with how the year had gone and hope for what could be. The first Sandcastle cohort met at the end of the 2023–2024 school year. We shared our professional goals, which ranged from exploring new pedagogical strategies to refining instructional coaching and translanguaging practices. My goal was to fully embrace project-based learning, and Sandcastle provided both the accountability I needed and the freedom to begin.

Emboldened by this new community of colleagues, I entered the 2024–2025

school year thinking about how I might ramp up to a “proper project.” I recalled a series of workshops facilitated by Sarah Strong, the High Tech High Residency Grant Director and author of *Dear Math: Why Kids Hate Math and What Teachers Can Do About It*. Strong emphasizes giving students opportunities to share their learning with audiences beyond their teacher and classmates. I couldn’t do a full interdisciplinary project with my students, but I had a perfect opportunity to provide them with an authentic audience for their math work: back-to-school night.

Back-to-school night took place about six weeks into the first semester and offered students’ parents, guardians, and other guests the chance to experience an accelerated version of their child’s schedule. Each teacher got ten minutes to introduce themselves, their course, and make connections. In my first year, I presented a warm-up problem the students had already solved, discussed the syllabus and best practices, and had guests engage in a puzzle with the remaining time. While everyone was polite, I could sense their desire to move on.

About a week before this year’s back-to-school night, I asked myself: *Why not have the students film and present their solutions instead?* I knew from previous project-based learning experiences like schoolwide exhibitions and student-led conferences that when students design something for an authentic and valued audience, they engage more deeply, revise more thoughtfully, and take greater ownership over their work. Like in the aforementioned project, where students scaled recipes to serve at Festival del Sol, they were motivated to get it right because their audience was important to them. So, I redesigned our unit on number sense to culminate in a short video presentation that students would share with their families at back-to-school night. To no one’s surprise, the parents were far more engaged seeing their children share their thinking and explain their problem-solving processes. (Plus, I managed to reduce my required presentation time by about 20 percent, so it was a win for everybody!)

Another key aspect of PBL is critique and revision. Inspired by Dr. Geoff Krall’s *Explainer Post: A Year’s Worth of Illuminating 5th-to-6th Grade Warm-Ups*, I introduced error analysis warm-up problems to my class. In these activities, students critique examples of student work, which typically contain some inaccuracy, and provide constructive feedback for improvement. These activities allow for the gradual “turning up” of the math dial, to borrow a phrase from Dan Meyer (2010). For example, in our number sense unit, I had students look at a sample student’s evaluation of the expression and identify both an error and something mathematically correct. I required their feedback to reflect the norms we had established at the beginning of the year: Feedback should be kind, specific, and helpful, which is essential for a culture of excellence (Berger, 2003). Students seemed willing to share their thinking, and their classmates seemed willing to provide feedback in



Above: Marco and his students at the turon exhibition.

ways that supported mathematical precision and accuracy and honored each other's ideas.

Thanks to Sandcastle and my fantastic colleagues, I feel hopeful about the upcoming semester. I'm excited to launch a scale factor project in which students create scaled-down physical models of historic landmarks using 3D printers or laser cutters. For our unit on rigid transformations, I look forward to students using reflections, rotations, and translations to create artwork. Additionally, in our final unit on statistics and probability, I'm eager for students to craft statistical questions for their peers to answer and then present their findings to each other. Like building a sandcastle, I anticipate each of these projects will involve mess, iteration, and unexpected beauty.

Four Ways Math Teachers Can Dip Their Toes Into PBL

It's possible to incorporate PBL principles into any math class without doing a large-scale project. Here are four ways you can incorporate PBL into your class right away. By making these adjustments, you can gradually introduce PBL without completely overhauling your curriculum. You can repeat these ideas from year to year, building on what is successful and redesigning areas that need improvement.

1. Start the kinds of conversations that happen in a PBL class. When I walk into a PBL classroom, one of the first things I notice is the collaboration and conversation. Math teachers can have students regularly share their thinking on a meaty math task, or critique and revise sample student work. Periodically, students can share their learning with each other or a neighboring class; they can critique a peer's math work before it is turned in, or collaborate on reworking a quiz. The key is to get the students talking, sharing their learning, and offering kind, specific, and helpful feedback. This helps establish norms for quality mathematical argumentation and feedback, laying the groundwork for future deeper learning experiences.

2. Think about what students might make, build, or do. Begin with an activity you already do and explore how math can drive the creation of a final product, such as art, a persuasive or advisory infographic, or digital slideshow, or a real-world simulation. For example, suppose students typically complete a research task on sales tax in the United States. You might create a project where students plan a trip across the U.S., calculate travel expenses, apply different state tax rates, and share their findings in a multimedia presentation. This small shift adds student choice, authenticity, and an opportunity to present while keeping math at the core of the learning experience. Similarly, many mathematical concepts and patterns naturally lend themselves to art. Linear equations can yield stained glass art (and you don't even need glass—you can use colored pencils or colored cellophane to make the art, and the math is the same). Mandalas can also be used to explore symmetry,

compound shapes, area, and more. Tools like Desmos can be used to create art with various functions, equations of lines, range, and domain. The quality of the art reflects the students' depth of understanding of the math concept. Lastly, displaying your students' work communicates to them that their work is valued, deserving of being shared, and that they have ownership of the classroom and surrounding space.

3. Consider the authenticity of the audience. When I told my students they would film their work for guests to view on back-to-school night, the pressure was suddenly on—in a good way! When I invited my friend, a software engineer at Apple, to be a guest judge and critique student prototypes of concept cars, the students rose to the challenge to refine their final prototypes and presentations.

Whether students create a great poster, a work of art, or a presentation, they must consider their audience. They should be asking themselves: How can I communicate my solution with mathematical accuracy and precision? How can I make it clear for any audience to understand? Partnering with a local museum, library, or coffee shop to display, even briefly, student work can elevate their sense of purpose and lead to better effort, attentive critique, and greater pride in the final product. Remember: a neighboring classroom or a class from another grade level can also be an ideal and accessible audience.

4. Talk with others! Some of the best lessons and projects come from simple conversations. Find a trusted colleague or, better yet, a community of educators to riff and bounce ideas off of. The High Tech High Graduate School of Education has developed an AI Kaleidoscope tool to aid in project idea generation, which can serve as a useful launchpad for refining your project ideas. Questions like, "What is your favorite part of this unit?" "How do people use this in the world outside of school?" or even simple statements like, "I had a colleague successfully try this..." or "I saw this cool display..." have pushed my thinking and transformed my lessons and projects. You don't need to reinvent the wheel. For me, Sandcastle provided the space to tinker and grow. You may want to join us there, or start a similar group yourself.

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Resources

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Allison Ohle is a first-generation college graduate who believes deeply that talent is equally distributed, but opportunity is not. After earning her degree in psychology from UC Santa Cruz, she began her career as a Teach For America corps member in New York City and later helped launch KIPP Bridge College Prep in Oakland. As a senior leader at High Tech High and later the founding Executive Director of KIPP San Diego, she has focused on aligning people, strategy, and purpose to make equity real. Today, as Executive Director of DEEP, she's leading the next chapter of the organization's work—translating research into daily practice and ensuring that every child in every neighborhood has access to the tools and resources known to support reading proficiency.

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