



2022 - 2023

IMPACT REPORT

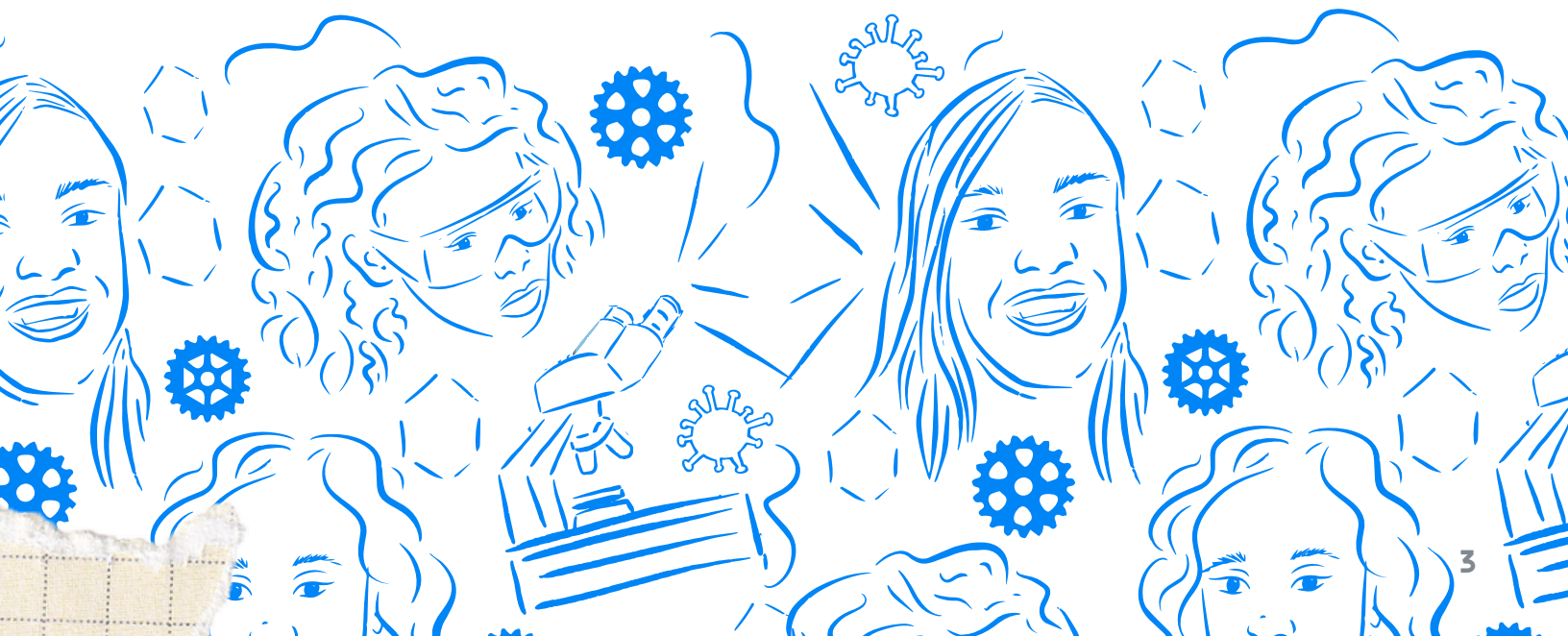
techbridge girls™ 



OUR MISSION

Techbridge Girls re-engineers how Black, Indigenous, and all girls* of color from marginalized communities experience STEM by catalyzing Out-of-School Time (OST) educators and STEM professionals to become equity educators and advocates through training and curricula that promote access, belonging, and persistence.

* Techbridge Girls (TBG) serves Black, Indigenous, and all girls of color, which includes cis girls, trans youth, gender non-conforming, and/or non-binary youth who experience(d) girlhood and economic insecurity as a part of their journey.



THE STEM EQUITY FRAMEWORK

For almost 25 years, Techbridge Girls (TBG) has designed the map to an equity framework rooted in three pillars – being STEM, doing STEM, and using STEM.

Techbridge Girls focuses on marginalized identities in STEM, fostering STEM belonging and building equitable classrooms where girls who are Black, Indigenous, and people of color (BIPOC) can thrive. A classroom culture where a girl's brilliance and boundless potential are always front and center. All engagements utilize best practices in social-emotional learning (SEL) to build community, develop trust, and enable girls to show up as their authentic selves.

BEING STEM

Students need to experience culturally relevant and gender-responsive STEM education in order to truly feel a sense of belonging.

Techbridge Girls centers on marginalized identities in STEM, fostering STEM belonging and building equitable classrooms where girls who are Black, Indigenous, and people of color (BIPOC) can thrive. Check-in and icebreaker activities create a classroom culture where youth's brilliance and boundless potential are front and center. All activities utilize best practices in social-emotional learning to build community, develop trust, and enable youth to show up as their authentic selves.

In order for girls to be able to engage in STEM as an activity, passion, or profession, they must first recognize that they are part of a long history of major contributors to the field. For too long, the discoveries and contributions of women of color to STEM have been erased from history books, leading society to believe that the only significant members of the historical STEM community were white men. Since today's educators were raised with that narrative, we must dismantle that reality to create a space for BIPOC girls.

“Techbridge Girls centers on marginalized identities in STEM, fostering STEM belonging and building equitable classrooms where girls who are Black, Indigenous, and people of color (BIPOC) can thrive.”

DOING STEM

Hands-on STEM in girls' own language supports exploration, innovation, and the development of beliefs that say just because you are not good at something today, doesn't mean that you can't improve over time.

Techbridge Girls utilizes the Engineering Design Process (EDP) to encourage brainstorming, collaboration, and iteration as girls design and test different STEM solutions to real-world problems. The EDP is a tool to support young engineers as they embrace challenges and take risks in a STEM environment. By leading through the EDP, educators foster a supportive environment where youth combine their inherent creativity and STEM learning.

The scientific method of study is founded in the notion of trial and error. All great discoveries were built upon many practice-and-fail experiences, yet our education system continues to prioritize rote learning and does not see creativity as an integral part of the STEM learning experience. Educators trained through TBG embrace the Engineering Design Process as a tool for STEM exploration, creating an environment for BIPOC girls to safely make mistakes and feel confident that this is part of the process. Hands-on STEM in girls' own language supports exploration, innovation, and the development of Practice Mindset.

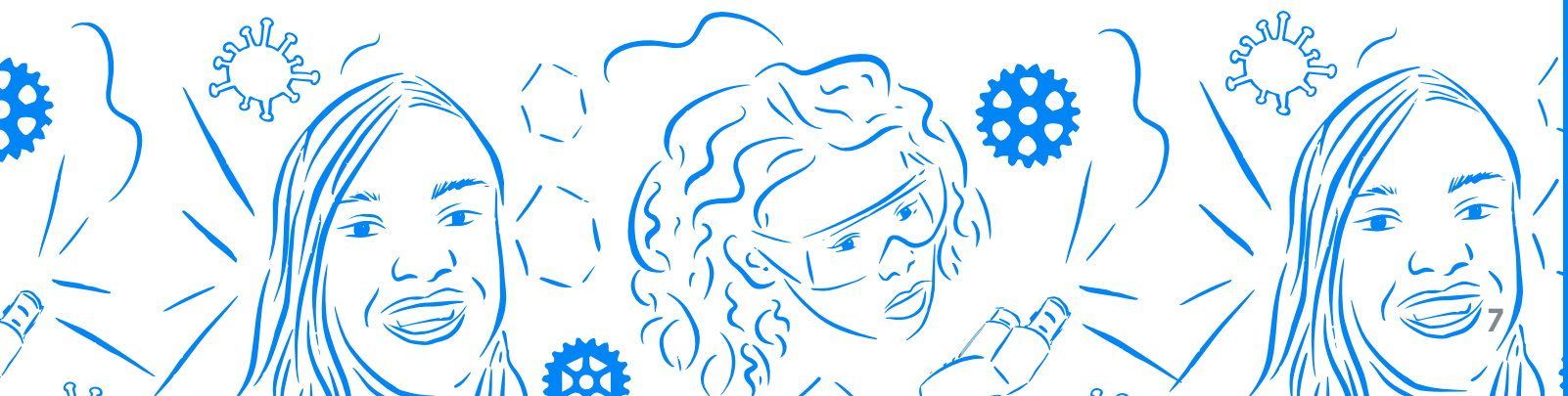


USING STEM

Without BIPOC girl genius, STEM solutions won't allow the full potential of solving the most pressing issues impacting lives, communities, and systems for social change.

Techbridge Girls uses story-based learning to develop critical thinking skills at the intersections of STEM and social justice. Programmatic work focuses on stories that center a BIPOC woman or gender-expansive STEM professionals' work using STEM to create a more equitable world. Girls discuss issues like racism, sexism, and other oppressions through the lens of STEM stories and applications.

As global issues mount, it has become even more evident that there is a growing need for creative minds to solve real world problems, and many minds at that. We can't afford to leave any brilliance behind. STEM education is a very tangible way to create a more just society, through empowering girls of color and demonstrating a real impact on their communities. STEM educators can directly impact human rights issues by fostering this perspective in their classrooms. STEM solutions positively impact girls' lives, their communities, and systems for social change.



OUR APPROACH

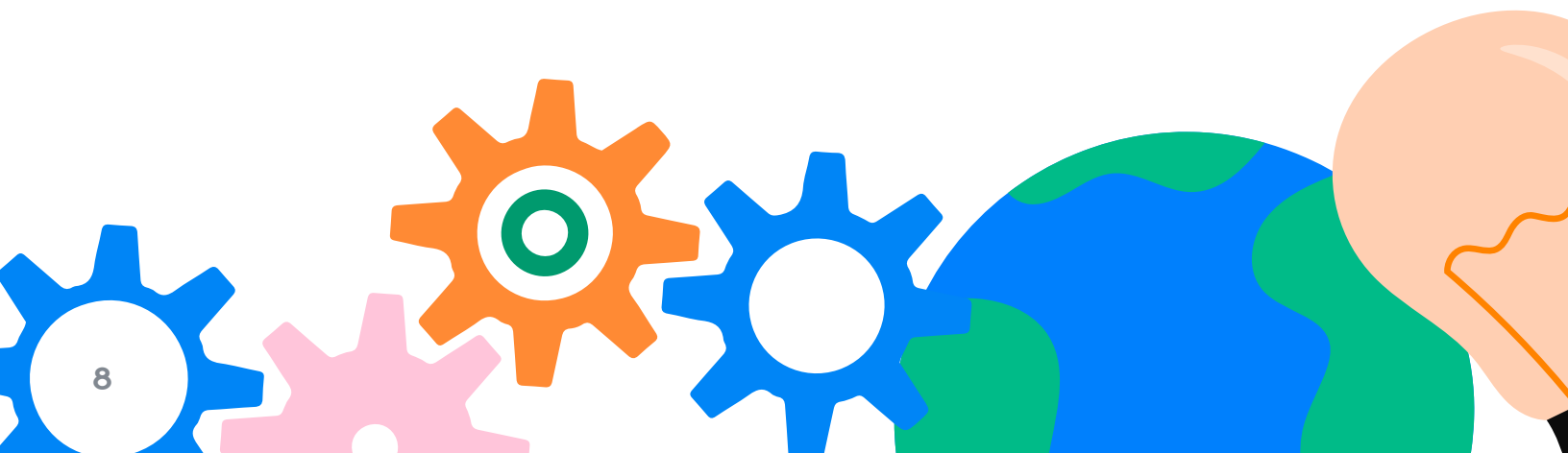
Out-of-School Time educators and STEM professionals serve as STEM gatekeepers, with the power to disrupt inequitable systems and pave the way for the next generation of STEM leaders. These adults can also perpetuate inequities and provide unequal access to meaningful engagement in STEM education and careers. Techbridge Girls challenges gender, racial, and class bias in STEM education and fields by developing training, gender-responsive and culturally relevant curricula, and STEM kits that equip adults to act as equity educators and champions. These adults gain tools and strategies to support girls toward STEM success.

STEM ENGAGEMENT EVENTS

These one-day events expose girls* to broad STEM content, careers, and role models in their local communities.

OST PROGRAMS

Techbridge Girls' gender-responsive and culturally relevant STEM curricula, program kits, and educator training equip educators to deliver quality, research-based STEM programming in their schools and communities. Our programs are fun, hands-on, open-ended, and inquiry-based. Aligned with National Generation Science Standards (NGSS), our program framework draws on girls'* interests and experiences and ensures they see themselves reflected in the STEM fields' past, present, and future.





INSPIRE

Inspire encourages girls in the 3rd to 5th grades to explore various hands-on STEM disciplines. In this program, OST educators deliver 12 ninety-minute lessons that build upon each other to inspire youth to see their endless potential to harness the power of STEM.



IGNITE

Designed to spark girls' interest in their STEM journeys, this set of 8 one-hour lessons offers 3rd- to 8th-grade girls engaging STEM and social-emotional learning activities. The curriculum offers maximum flexibility and can be delivered virtually, in person, or as a hybrid program, making it the program of choice for our OST educators this year.



CHANGEMAKERS

ChangeMakers builds middle school girls' STEM joy, excitement, belonging, & agency through culturally relevant story-based learning. In this in-person, 12-session program, OST educators center the contributions of BIPOC women who have used STEM to impact systems, communities positively, and their personal lives.

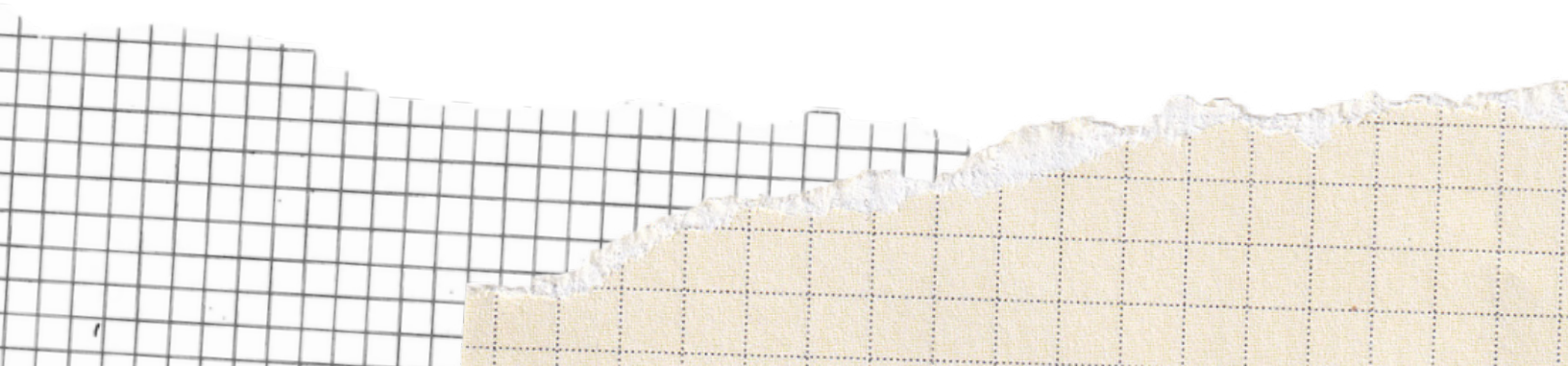
WHO WE SERVE

EQUIPPING EDUCATORS

Techbridge Girls builds the capacity of educators and STEM professionals, to have the tools and create spaces that challenge the stock story of STEM for and by white cis-men and rightfully center the history and potential of BIPOC youth. Our training and support challenge educators to take responsibility for educational failures by examining position, bias, power, and privilege in the classroom, valuing collaboration, and centering student voices to create a sense of belonging.

The Approach: We provide live and asynchronous training, curricula, an online resource library, STEM kits, and a community of peers committed to STEM equity. Our STEM Equity Framework allows us to build rigorous training models for our STEM Equity Learning Community of Practice where we train OST supervisors, directors, and educators on developing equitable STEM learning environments for BIPOC girls and gender-expansive youth.

We created the **STEM Equity Learning Community** intensive training to equip OST program managers, administrators, site directors, and their educators so that more equitable learning spaces are available for girls (and gender-expansive youth), especially Black, Indigenous, and Latina girls, across the U.S.





MORTON
IODIZED SALT


techbridge girls

TRUE
lemon

TRUE
lime



Turnkey Curriculum Programs

Techbridge Girls' gender-responsive and culturally relevant STEM curricula, program kits, and educator training equip educators to deliver hands-on, quality STEM curricula in their schools and communities. Aligned with National Generation Science Standards (NGSS), our program framework draws on girls'* interests and lived experiences and ensures they see themselves reflected in the STEM fields' past, present, and future.

Capacity Building

We support OST leaders, role models, and mentors through coaching, training, and engagement events that enhance their ability to influence and accelerate girls' STEM pathways.

STEM Engagement Events

These events take place at colleges, community centers, and schools across the country. Volunteers, STEM professionals, and role models host engaging, hands-on STEM workshops and community-building events.

In 2022:

2,335 EDUCATORS SERVED
14,115 YOUTH

in curriculum programs, workshops, and events.



**In 2022-2023
Program Year:
556 conference
leaders served
1,938 girls youth
in STEM
conferences.**

**88 OST equity champions
across 167 OST sites**

**49 trained role models
reached at least 8,462 girls**

ENGAGING EQUITY CHAMPIONS

Techbridge Girls engages OST leaders and STEM professionals who serve as role models and mentors, encouraging them to uplift the brilliance, potential, and STEM lineage of BIPOC girls. Our training, workshops, and one-time events challenge adults in positions of power to interrogate their own biases and dismantle barriers to opportunities for BIPOC girls so they may create more expansive environments for youth to thrive in STEM fields. By positioning STEM as a path to economic promise and a prosperous career, these equity champions can empower youth to pursue their dreams.

Capacity Building

We support OST leaders, role models, and mentors through coaching, training, and engagement events that enhance their ability to influence and accelerate girls' STEM pathways.



“ I have been in the STEM Equity space for 20+ years and have never seen equity ingrained so boldly in the curriculum this way. I am excited to bring this to our program”

- Educator,
Houston, TX

FIELD NOTES

Our OST educators network provides critical services in schools and community organizations across 23 states. [The 2022–2023 program year continues to see successes and challenges to our network amid turbulent times in the OST field and beyond.](#)

TBG PROGRAM MANAGER'S REFLECTION

During the 22-23 fiscal year, we intentionally refined the training, onboarding, and kitting processes, as well as the quality of our existing curriculum. Our main priority was better understanding the barriers and needs of our educators and doing all we could to accommodate their needs. At the same time, it was equally important we maintain the quality and fidelity of our programs.

We utilized our learning management system, Participate, Inc., to create a quality training structure that was more accommodating to educators' schedules and share programming resources in a way that was more user-friendly than in the past. Through our partnership with STEMFinity, we were also able to improve order processes on how the kits were distributed. In addition, we focused heavily on revamping how we teach STEM equity. We are becoming more and more intentional about teaching the BIPOC contributions of STEM, why it is essential to create a space of belonging for BIPOC girls, the barriers that keep BIPOC girls from feeling like they belong, and how to dismantle those barriers.

This level of intentionality, willingness to be more flexible, and thinking outside the box helped educators feel more confident and prepared to deliver our programs.

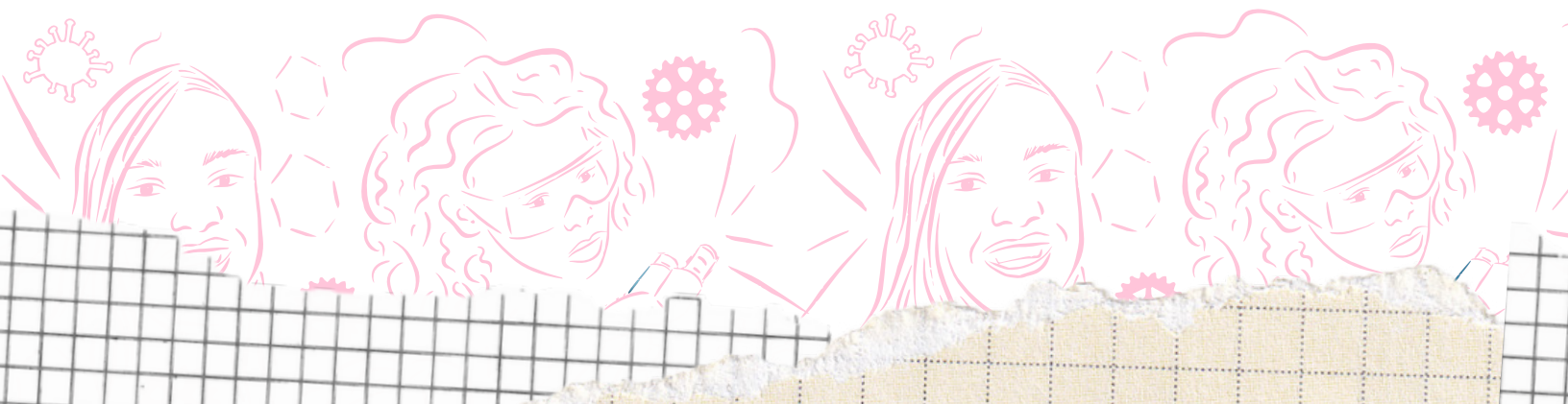
YOUTH RECRUITMENT AND RETENTION

Educators we surveyed expressed overall positive experiences, with feedback indicating fun programs and youth feeling safe to self-express. Educators reported students also enjoyed the STEM activities and increased their confidence in trying new activities in STEM and seeing the applicability of STEM in the world, specifically highlighting the contributions of BIPOC people in STEM. Of the three curricular packages, Ignite youth were most excited about pursuing a STEM career.

“I believe that the effort put into enriching our equity training and curriculum content lead girls to feel a strong sense of belonging in TBG spaces.” – TBG Educator

However, with the caveat of low return, ChangeMakers students were less likely to share their thoughts and feelings in the program. They also greatly lacked confidence in STEM knowledge, trying new things in STEM, or persisting when faced with challenges in STEM. They were also the least interested in pursuing STEM careers and didn't feel STEM could improve their lives. Compared to Ignite youth, Inspire youth were less likely to share their thoughts and feelings in the program, unsure about persisting when faced with challenges in STEM, and also less likely to pursue STEM careers.

Reflection: Educators expressed appreciation for the STEM instructional videos that accompanied each lesson. They found it useful for their understanding of STEM activities and the youth. This level of instructional guidance and resources could be what needs to be included for Inspire and ChangeMakers educators to get more positive feedback in this category.

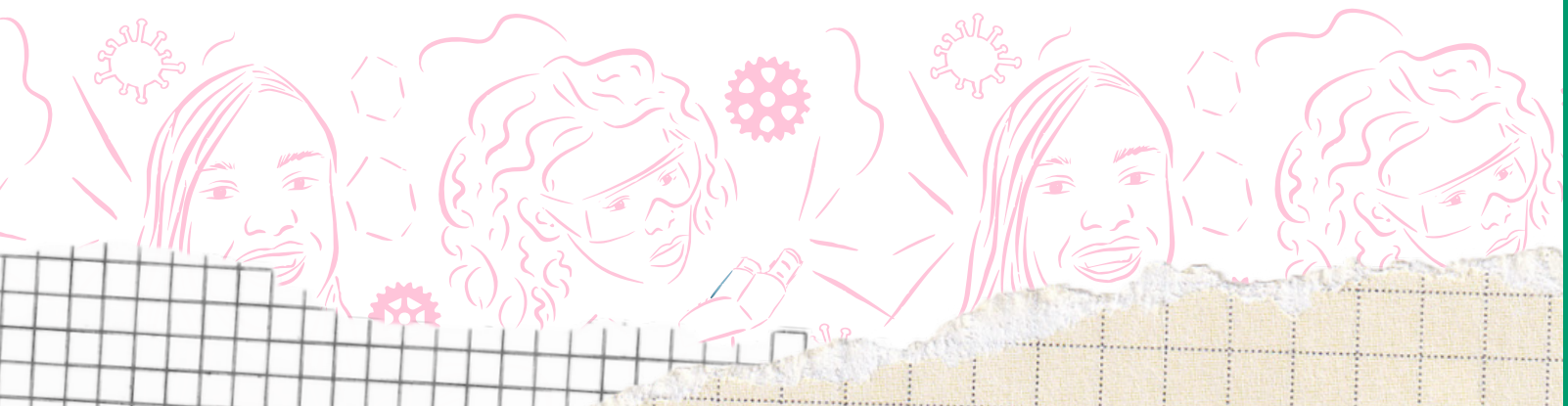


FIELD NOTES CONTINUED

EDUCATOR WELLNESS

"My trainer's patience with me during this program was extremely helpful. I already had a lot of things going on at school, but I knew my girls had to be a part of your program! I am very appreciative for TBG's patience while I made it through the registration process." – TBG Educator

"TBG gave students something new to explore, even beyond the program. They came in each week and talked about how they went beyond what I shared with them the previous week.", "Completing the program overall was the success for me. I doubted my own ability to present and execute these ideas and experiments with the girls and it only got worse the longer I waited. The more I threw myself into the program, the easier it became. Not to say there were no challenges, but working through became easier as time went on." – TBG Educator



EDUCATOR OUTCOMES

Out-of-school Time educators serve as early STEM gatekeepers, with the power to maintain or disrupt inequities in STEM. BIPOC girls' educational experiences often intersect with race, gender, and class biases. Educators can deter BIPOC girls from marginalized communities from pursuing STEM without acknowledging their role in systems perpetuating inequities. BIPOC girls who attend high-poverty schools experience bias due to their race, class, and ethnicity, preventing them from persisting in STEM careers.

A study published in 2020 shows that a majority (66%) of underrepresented students of color don't feel like they belong in STEM and that these beliefs often derive from early childhood – with about one-third (32%) of respondents recalling that, as children, they did not think people like them had STEM careers. This is why Techbridge Girls is focused on creating a sense of belonging for Black, Indigenous, and Latina girls from the start – in K-12 STEM education spaces.

These issues are compounded for girls who receive messages that STEM is not for girls, particularly girls of color (Carlone, Johnson, & Scott, 2015). BIPOC girls bring relevant experiences to the classroom, often unacknowledged or valued by educators in the context of STEM education. Through our STEM Equity Framework, Techbridge Girls asserts that OST educators have the opportunity to change this narrative.

TBG's STEM equity training challenges these gatekeepers to consider their position, biases, and the resulting power imbalance in the classroom. Educators are equipped with the tools and practices to foster greater STEM engagement and knowledge. Tangible classroom strategies, a supportive community, and a comprehensive curriculum embodying cultural relevance and gender expansiveness have prepared many TBG educators to cultivate a sense of joy and belonging for BIPOC girls in STEM spaces.



INDICATORS

Gained awareness of what it means to be an equity educator.

100%

100%

100%

Gained strategies to create an inclusive and safe space for students to express their gender identity.

90%

83%

100%

Gained an understanding of how bias affects youth in educational settings.

95%

100%

100%

Gained an understanding of culturally relevant classroom practices.

95%

83%

100%

Gained awareness of what it means to be an equity educator.

100%

83%

100%

Understood power imbalances in the classroom related to identity and position.

95%

67%

100%

Gained strategies to overcome their own biases.

91%

84%

100%

Gained awareness of how marginalized students experience bias within STEM education.

100%

100%

100%

EDUCATOR OUTCOMES

As we iterate our training, we learn more about the demographics and lived experiences of the educators in the room. Over the last 20 years, Techbridge Girls' educators were majority white women. After analyzing the data for 2023 in our new Equipping Educators model, we found a majority of our OST educators identify as BIPOC. With this knowledge, the training approach will allow educators to explore their role as equity educators through the lens of their own identities.

"Great program, we are going to extend it & have more groups next year. So many girls are interested in joining next year. We are going to keep 3-4 grades at Ignite and move 5th grade to Inspire. We are going to also have fall & spring groups. Ya'll were so very supportive & a pleasure to work with. Thank you!!" –TBG Educator

"The majority felt the staff being available for questions and support was helpful, the reading materials and videos, the hands-on aspects, and learning from team mates was helpful "Techbridge training never disappoints! The training was well timed, full of great engagement and collaboration, and helpful in exploring the framework of the program. I loved how we were able to get some of the nitty-gritty details completed in the pre-training module so that more of our time could be spent talking through bigger ideas. The conversations around gender expansiveness were particularly helpful to me as it's not a topic much discussed at PDs in my school district and plays an important role in the TBG mission." –TBG Educator

Self Reported racial/ethnic identities of adult educator participants:

54%

African American/Black

24%

Hispanic/Latino/Latina/Latinx

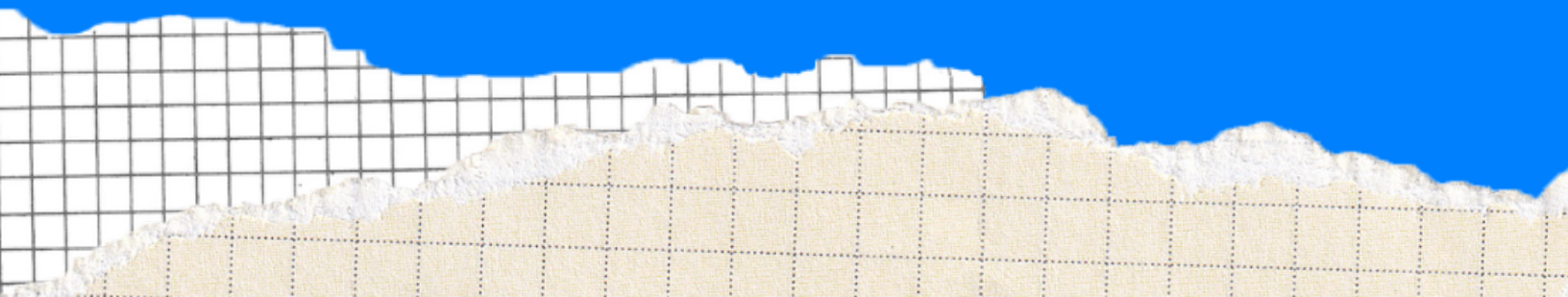
10%

White

7%

Asian/Asian American

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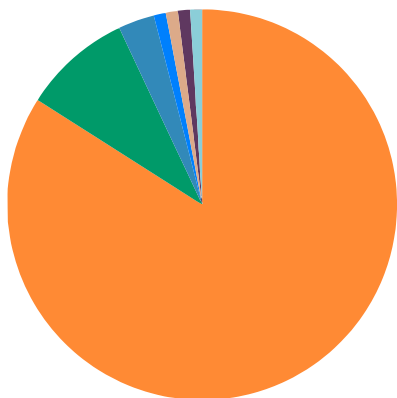
YOUTH OUTCOMES

BEING STEM

Trained and equipped educators delivered culturally relevant, social-emotional learning strategies, and gender-expansive practices that developed a sense of belonging in STEM spaces for most program participants. Belonging in STEM is key to persistence in STEM endeavors, including educational and career pursuits. When girls can connect with their STEM lineage, express themselves freely, and share aspects of their identity in emotionally-safe environments, they are more likely to view STEM spaces as places where they belong now and in the future.

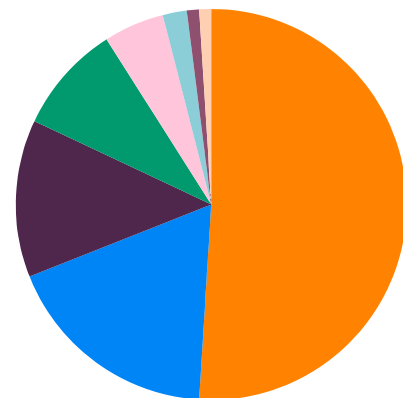
Self-reported gender and racial/ethnic identities of youth evaluation participants:

Gender Identities



84% Girl
 9% Boy
 3% Transgender girl
 1% Gender non-conforming
 1% Gender non-binary
 1% Genderqueer
 1% Transgender boy

Racial/Ethnic Identities



51% African American/Black
 18% Hispanic/Latino/Latina/Latinx
 13% White
 9% Multiethnic/Multiracial
 5% Asian/Asian American
 2% Middle Eastern or North African
 1% Indigenous American/Alaskan
 1% Native Hawaiian/Pacific Islander



INDICATORS

Felt they could bring their whole selves to the program.

84%

76%

77%

Felt valued by the educators in the program.

87%

80%

77%

Felt the program was a safe place to express their gender identity.

87%

75%

85%

Were comfortable sharing experiences related to race, ethnicity, and culture in the program.

76%

75%

92%

Talked to family at least once a week about the program.

50%

25%

38%

Talked to friends at least once a week about the program.

48%

40%

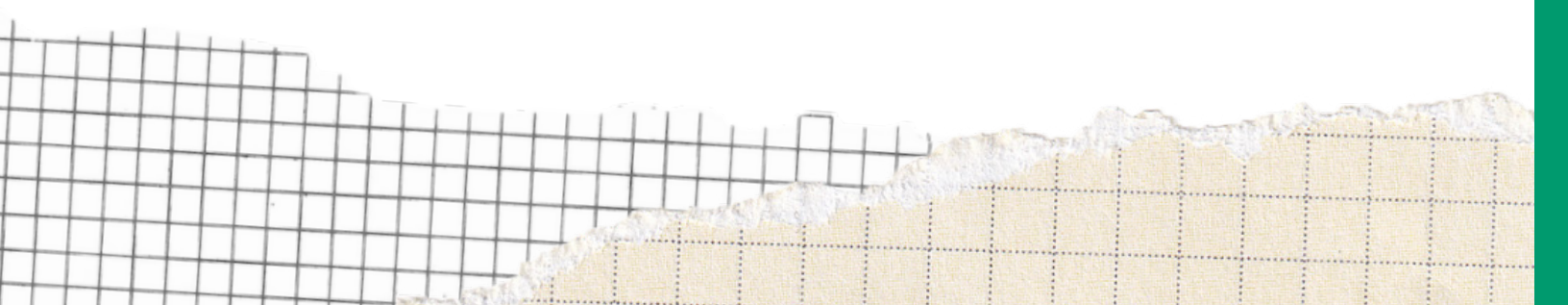
48%

Felt confident sharing their thoughts and feelings in the program.

71%

63%

62%



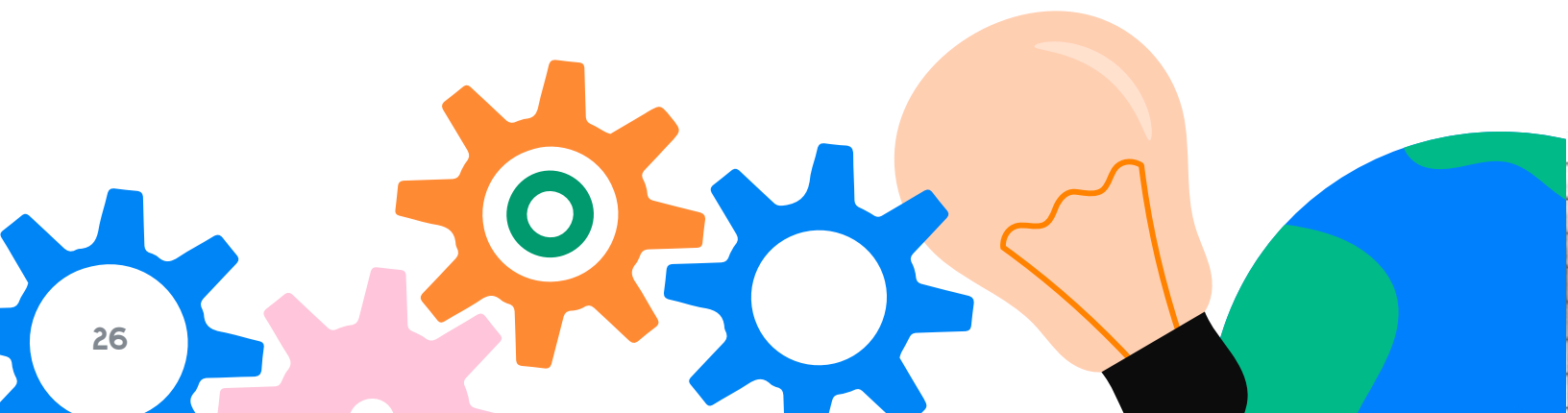
YOUTH OUTCOMES

Educators requested more social-emotional learning resources, such as icebreakers, to incorporate throughout the day. Through monthly community meetings, Techbridge Girls facilitated discussions between educators on best practices and strategies for youth engagement. We also developed and shared new community-building and youth engagement resources in our online resource hub, Participate, Inc..

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DOING STEM

Hands-on, exploratory STEM in girls' language increased STEM knowledge, skills, and the development of a practice mindset in most program participants. Techbridge Girls fosters an environment where girls engage in creative and critical thinking, work collaboratively, and focus on the process instead of achieving one predetermined outcome. By testing and improving through the engineering design process (EDP), girls define STEM concepts from their own experiences and persist through different outcomes, building confidence and increasing their STEM knowledge.



“When girls can connect with their STEM lineage, express themselves freely, and share aspects of their identity in emotionally-safe environments, they are more likely to view STEM spaces as places where they belong now and in the future.”

- TBC Educator



INDICATORS

Increased enjoyment of STEM activities.

93%

85%

77%

Increased confidence in STEM knowledge and skills.

67%

68%

69%

Are more interested in learning about STEM.

86%

75%

54%

Feel more confident challenging themselves to try new things in STEM.

85%

76%

69%

Feel more likely to persist when faced with challenges in STEM.

83%

80%

77%

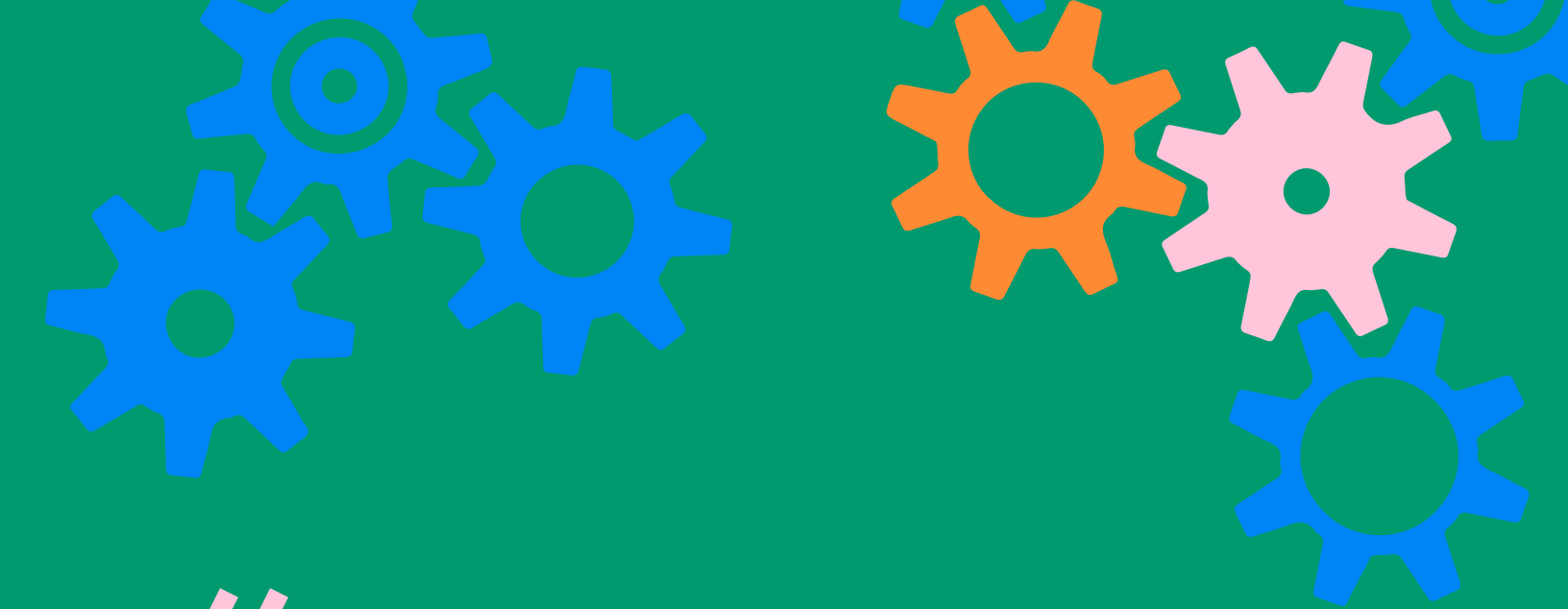
Feel more interested in learning more about STEM in future educational pursuits.

74%

78%

62%

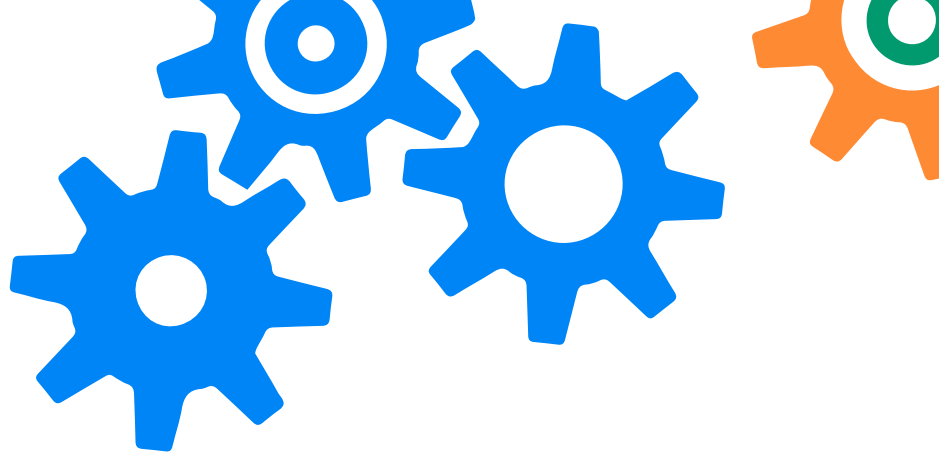




“Great program, we are going to extend it & have more groups next year. So many girls are interested in joining next year.”

- TBG Educator





YOUTH OUTCOMES

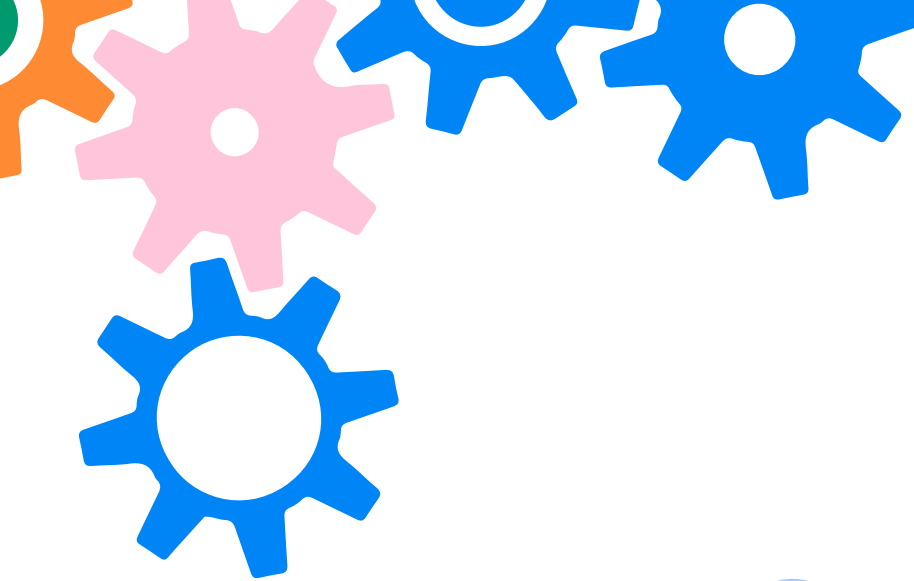
In feedback from educators, we learned that the EDP, at times, was not prominently featured in some lessons as the tool for STEM exploration. As we enter another program year, we have developed new ways to ensure the EDP guides instruction. Using educator and youth feedback, we have included worksheets and visuals to keep EDP front-and-center, and restructured some lessons to lean into the phases of the EDP.

Most educators felt confident when facing challenges and understood how EDP is used and that different designs can be used to solve the same problem.

USING STEM

For most participants, activities centered around STEM solutions for social change increased their perceptions of STEM as a tool that can positively affect their lives, communities, and systems. Connections to real-life situations in which BIPOC women use STEM to make the world more equitable make STEM careers and majors more tangible. Positioning STEM as an exciting and meaningful pursuit through the lived experience of BIPOC girls disrupts the pervasive story of STEM for, and by, white men, increasing STEM engagement and interest.





INDICATORS

Learned real-world applications of STEM.

83%

82%

92%

Learned that BIPOC communities are part of STEM careers and histories.

81%

84%

92%

Learned that STEM is a tool that can make a change in their communities.

82%

83%

92%

Learned that STEM is a tool that can improve their lives.

82%

79%

69%

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OST PARTNER HIGHLIGHTS

Strong, enduring OST partnerships are critical to our model of equipping educators, supporting our bold goal of reaching 1 million girls by 2030. We continue to engage long-time partners with our curriculum and training, adapting our program offerings based on their experiences in the field. As we expand our reach to the national scale, new partnerships with schools and, increasingly, community-based organizations are driving the development of innovative program models.

CROWLEY INDEPENDENT SCHOOL DISTRICT (ISD) PARTNERS.

Crowley Independent School District (ISD) partners has a total of 10 sites and were very enthusiastic and committed from day one.

"I wanted to send a quick email expressing how much the girls at my campus have enjoyed the Techbridge Girls in STEM program this year! I got to see them transform, many from quiet and shy, to bold, full of laughter and creativity! Your organization is truly doing great work! Thank you again for all you do, and we can't wait until next year!" -TBG EDUCATOR

We've got the whole world

BE THE solution TO THE pollution

BE KIND REWIND

friends



APPLIED MATERIALS FOUNDATION

Applied Materials Foundation has partnered with TBG for over 5 years through the Girls Gen programming in Santa Clara County. In March, we participated in the International Women's Day event. A TBG Educator from AIMS Academy was a participant in the panel of 40 social impact professionals coming from companies like NetApp, TechCU, Tesla, and more.

We also shared in a unique partnership opportunity to film a CBS's [Mission Unstoppable](#) episode featuring Applied Material Engineer, TBG Educator Julissa Escobar, and TBG student that garnered over 1.3 million total viewers, making the partnership episode the 2nd largest audience of this year!

