NATIONAL SOCIETY OF BLACK ENGINEERS
SEEK
SUMMER ENGINEERING EXPERIENCE FOR KIDS

seek.nsbe.org

2025

NSBE SEEK ANNUAL REPORT

National Society of Black Engineers

A Statement of Gratitude

Dear Friends,

For 20 summers, families, students, staff, mentors and partners have come together through the National Society of Black Engineers' Summer Engineering Experience for Kids (NSBE SEEK) to build something remarkable: a community where children can see themselves as engineers, innovators and leaders. NSBE SEEK is a no-cost summer camp for rising fourth through sixth graders, designed to spark their curiosity in STEM and to act on NSBE's commitment to developing the next generation of engineers and leaders. As NSBE SEEK approaches its 20th anniversary in 2026, we are reminded of the power of community to shape futures and open doors of possibility.

The 2025 summer of NSBE SEEK was especially meaningful, as it coincided with NSBE's 50th anniversary, NSBE Gold. It was a year of celebration and innovation. This summer, we introduced a new curriculum that gave students the chance to explore timely topics such as artificial intelligence and environmental sustainability. Families traveled from near and far for their children to participate and to witness their growth on Showcase Friday, a highlight that continues to bring joy and pride each week. I had the privilege of connecting directly with students, parents, staff, mentors and partners at several of our camp sites, and their stories reinforced NSBE SEEK's enduring value.

We are proud that NSBE SEEK remains a program people return to year after year. Students arrive with renewed excitement, and many of our mentors, often NSBE Collegiate or Professional members, return to guide the next cohort. Their dedication, and the steadfast support of our partners, are what sustain NSBE SEEK and ensure its continued success.

In this report, you will see outcomes from the summer, along with images and reflections of students, families, mentors, staff and partners. Their words convey the impact of NSBE SEEK and the promise it holds for the future.

Looking ahead, we are excited about the milestone we will reach in 2026. NSBE SEEK's 20th anniversary is not only a celebration of two decades of inspiring future engineers; it is also an opportunity to dream bigger and reimagine what NSBE SEEK can be for the next 20 years. Thank you, current partners, for helping make NSBE SEEK possible. Those who may be considering joining us: we invite you to become part of this journey to expand NSBE SEEK's reach and open even more pathways into STEM for generations to come.

Thank you for your continued support.

With gratitude,

Tiffini Andorful, Ph.D.
Chief, Programs & Membership

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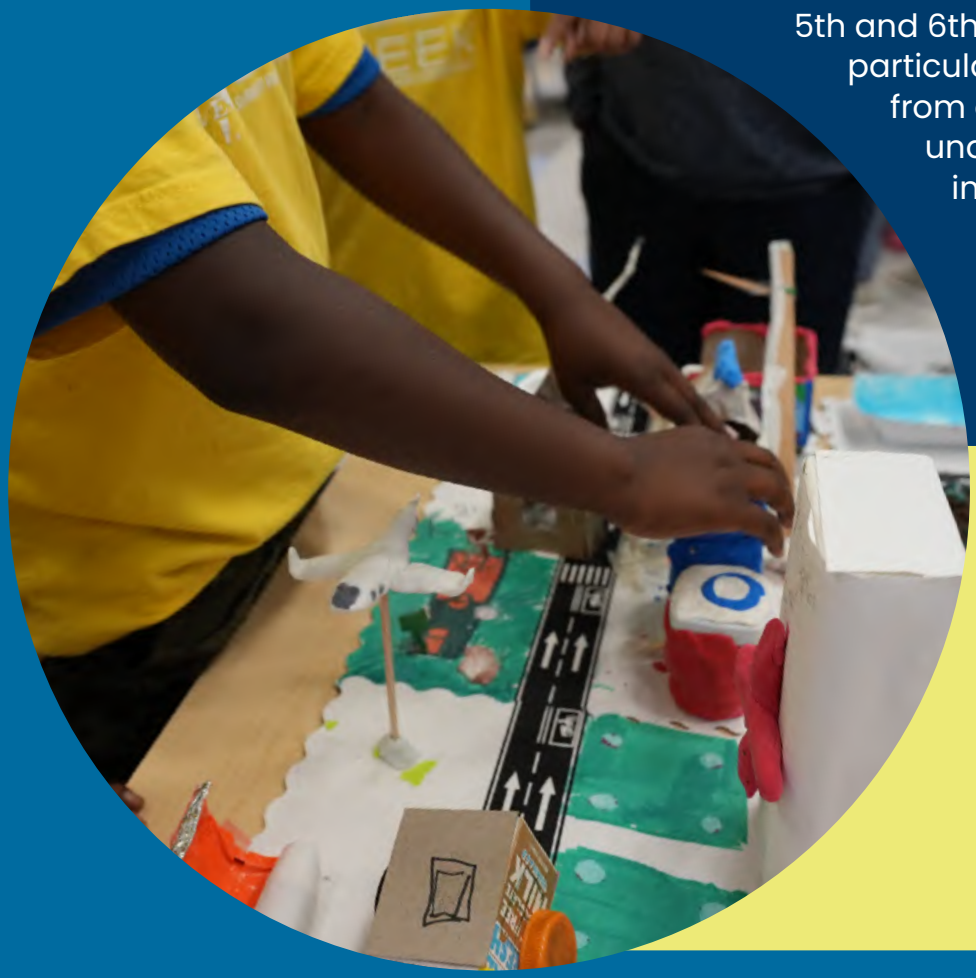
Our Impact at a Glance

NSBE's Summer Engineering Experience for Kids (NSBE SEEK), presented by the National Society of Black Engineers (NSBE), is a cost-free, three-week summer program that brings the world of STEM to life for rising 4th, 5th and 6th grade students, particularly those from communities underrepresented in science and engineering.



Through hands-on, team-based design challenges, NSBE SEEK empowers students to think like engineers, build problem-solving skills and see themselves as future innovators. Supported by dedicated mentors and volunteers, students gain exposure, confidence and a lasting curiosity for STEM.

In 2025, NSBE SEEK reached students in Houston, Texas (all girls); Chicago, Illinois; Washington, DC (two gender-specific sites); and East Orange, New Jersey, and through a virtual camp, engaging with hundreds of participants between June 16 and August 15. Together, these experiences continued to spark early interest in engineering and create pathways toward increased representation in STEM.

NSBE SEEK 2025 by the Numbers

483
Students Total

4
In-Person Sites

1
Virtual Camp

30
States Represented

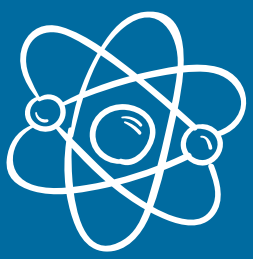
NSBE SEEK is a cost-free, three-week STEM experience designed for rising 4th–6th graders.

160
Volunteers

53
Total staff

42%
Virtual

5
Participants from Canada



What Students Learned

Each summer, NSBE SEEK students engage in three weeks of hands-on, inquiry-based learning that brings engineering to life. The 2025 curriculum focused on Energy, Sustainability and Artificial Intelligence (AI), three areas shaping the future of STEM.

Week 1: Energy

In the first week, students explored energy as the foundation of human and natural activity. Through hands-on investigations, they examined how energy is generated, transferred and used, and how renewable systems like hydropower, solar and wind can create a more sustainable world.

Using the Engineering Design Process (EDP), students built and optimized solar and wind power stations connected to a simulated energy grid to see how systems work together to power modern life. The week culminated in LED billboard displays powered by renewable energy, symbolizing how creativity and engineering can light up the world.

Week 2: Artificial Intelligence

During the second week, students explored the rapidly evolving field of artificial intelligence (AI) and its role in shaping modern technology. They learned how AI recognizes patterns and supports decision-making, then applied these concepts by designing and programming autonomous vehicles to race on a smart racetrack.

Working in teams, students combined coding, design and data analysis to optimize their vehicles, while also exploring ethical AI use, bias and digital citizenship. The week ended with the Smart Race showcase, celebrating innovation, teamwork and responsible use of technology.

> Here at NSBE, I hope we plant that small seed within our students where they get excited and interested in engineering, and they stick with the curriculum."
>
> – Keshia Robinson, NSBE Director of Operations

Week 3: Sustainability

In the final week, students became engineers and city planners, designing smart, sustainable cities that balance environmental, social and economic goals. They explored the three pillars of sustainability, collected environmental data using micro:bits and IoT tools, and connected these lessons to everyday life through upcycling projects and repair cafés.

Applying the EDP, students reimagined products and city systems for greater efficiency. Each team presented its smart city model, integrating renewable energy and technology to demonstrate creative solutions for a more sustainable future.

> Today we presented a city we made out of recyclables. I learned that instead of throwing away your trash you could use it to make something really cool."
>
> – Student

> The excitement in his eyes when he comes home and talks about micro:bits and things like that: he loves being here." "
>
> – Parent

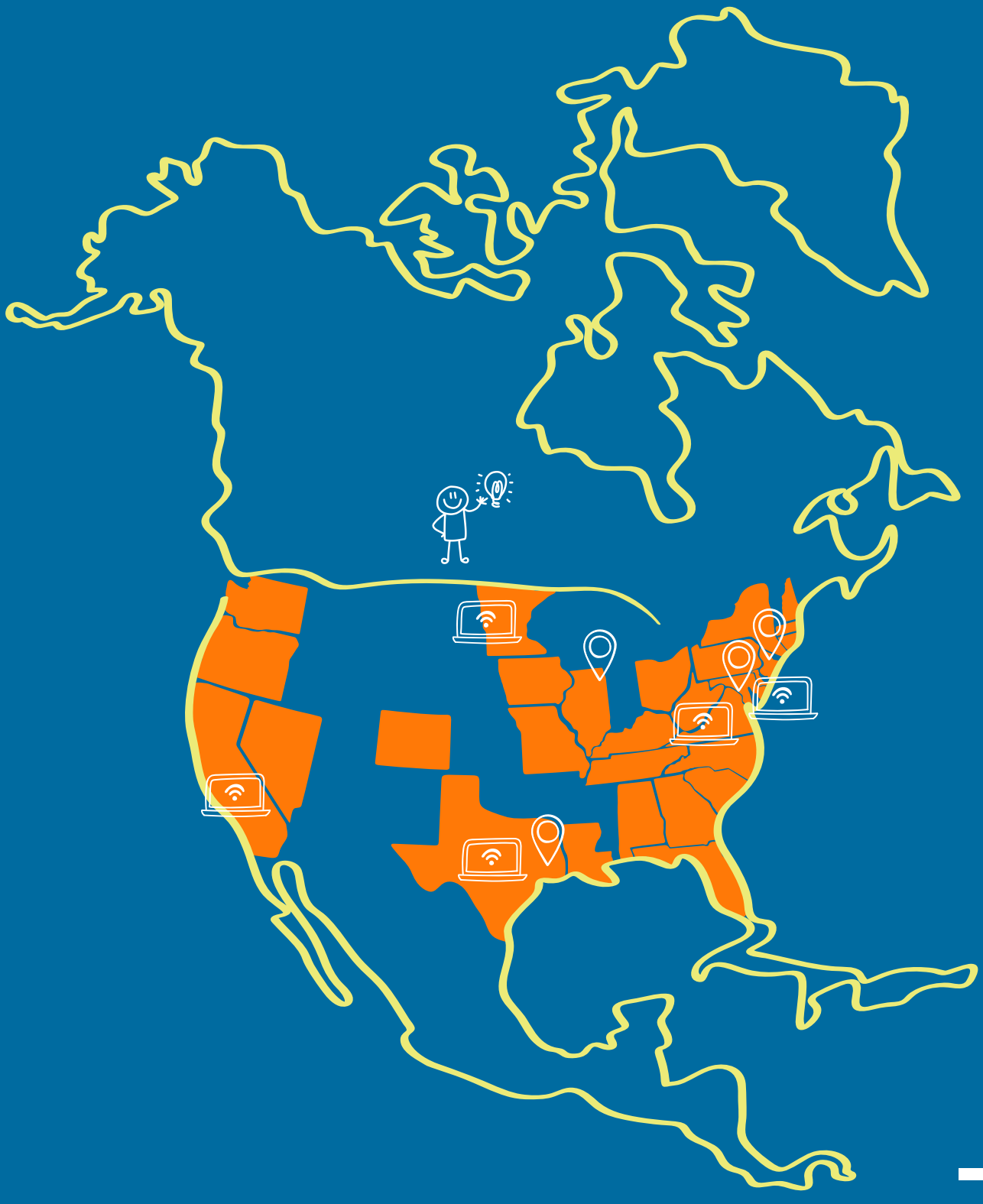
Key Takeaways

- Curriculum themes: Energy, Sustainability and Artificial Intelligence.
- Students practiced the Engineering Design Process (EDP) through hands-on, team-based challenges.
- Projects emphasized creativity, ethics and real-world problem-solving.

Who We Reached

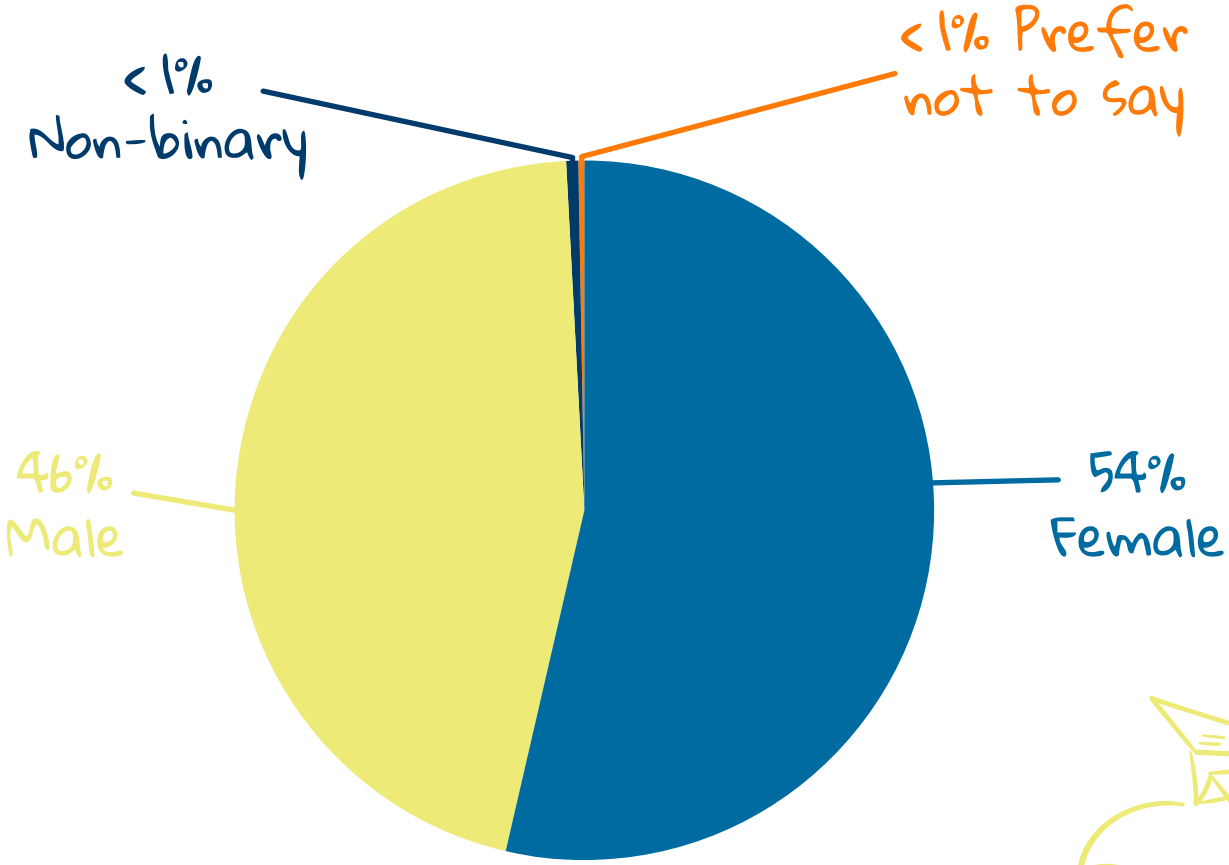
NSBE SEEK continues to reach students from a wide range of communities, grade levels and backgrounds. In 2025, the program registered 483 participants, including 202 virtual students (42%) and 281 in-person students (58%) across Houston, Chicago, Washington, DC, and East Orange, New Jersey. The program's reach reflects its continued accessibility and appeal.

Among virtual participants, most students joined from Texas, Maryland, California and Virginia, representing nearly two-thirds of the total online enrollment. NSBE SEEK also welcomed five students from Canada.



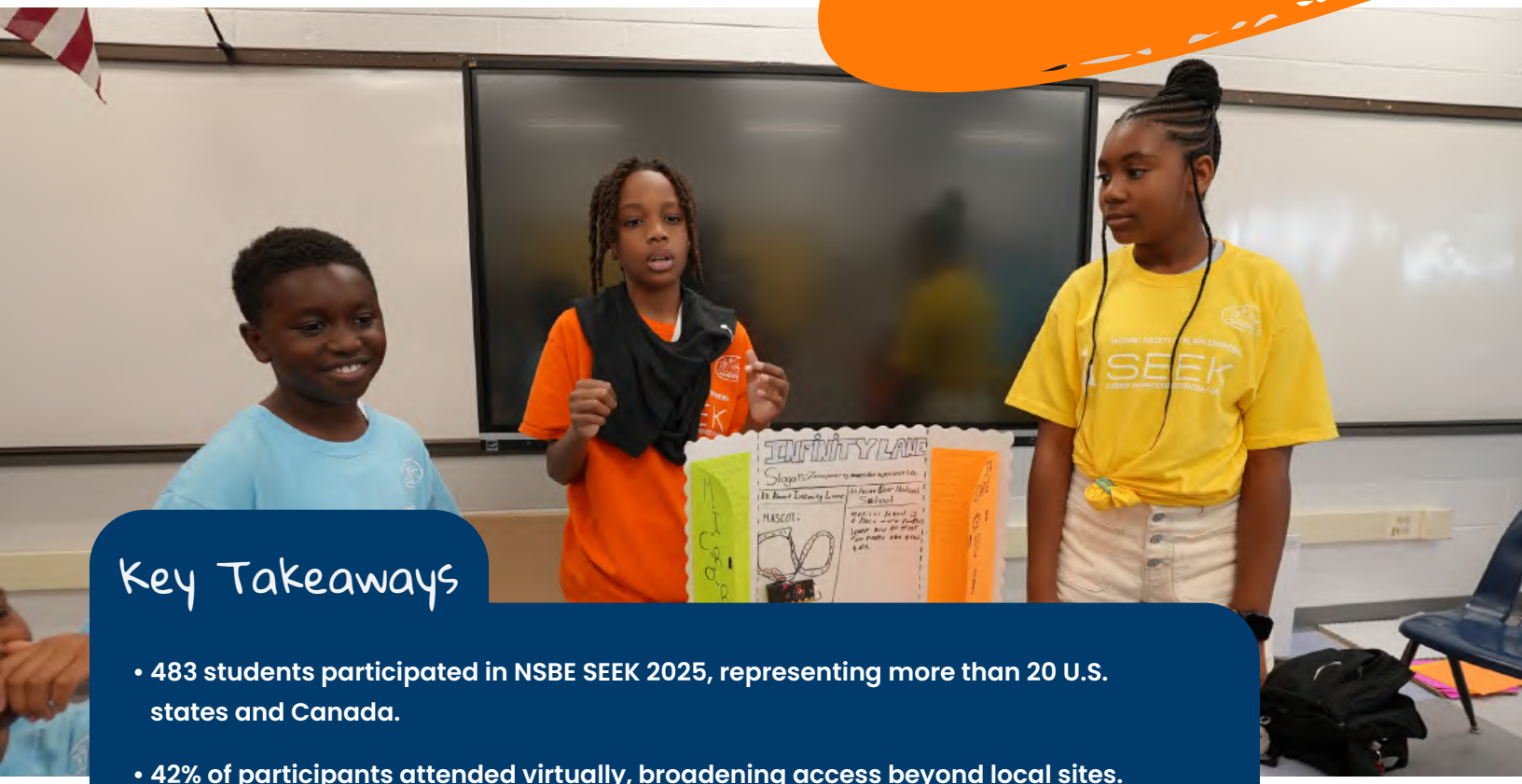
Breakdown of Virtual Participants by State		
Location	**Number of Participants**	**Percent**
Texas	51	26
Maryland	37	19
California	17	9
Virginia	17	9
Minnesota	8	4
Georgia	6	3
North Carolina	6	3
Canada (All Provinces)	5	3
Florida	5	3
South Carolina	5	3
Colorado	4	2
Tennessee	4	2
New Jersey	4	2
Pennsylvania	3	2
Alabama	3	2
Massachusetts	2	1
Nevada	2	1
Kentucky	2	1
Ohio	2	1
Illinois	2	1
District of Columbia	2	1
Missouri	1	1
New Hampshire	1	1
Louisiana	1	1
New York	1	1
Oregon	1	1
Iowa	1	1
Delaware	1	1
Connecticut	1	1
Washington	1	1
West Virginia	1	1

Gender Breakdown



NSBE SEEK's reach continues to expand geographically and demographically. In-person participation grew across all four U.S. sites, with many students returning from previous years. This is a sign of sustained engagement and family trust. The program also saw a higher percentage of girls in engineering activities, particularly through the Houston all-girls site, reinforcing NSBE's commitment to gender equity in STEM.

> "I have an 11-year-old who has been in the NSBE kids camp for the past three years, and it's been one of the best experiences for my child."
>
> – Parent



Key Takeaways

- 483 students participated in NSBE SEEK 2025, representing more than 20 U.S. states and Canada.
- 42% of participants attended virtually, broadening access beyond local sites.
- NSBE SEEK's all-girls Houston site remains a model for gender inclusion in STEM.
- The no-cost program design continues to eliminate access barriers for families.

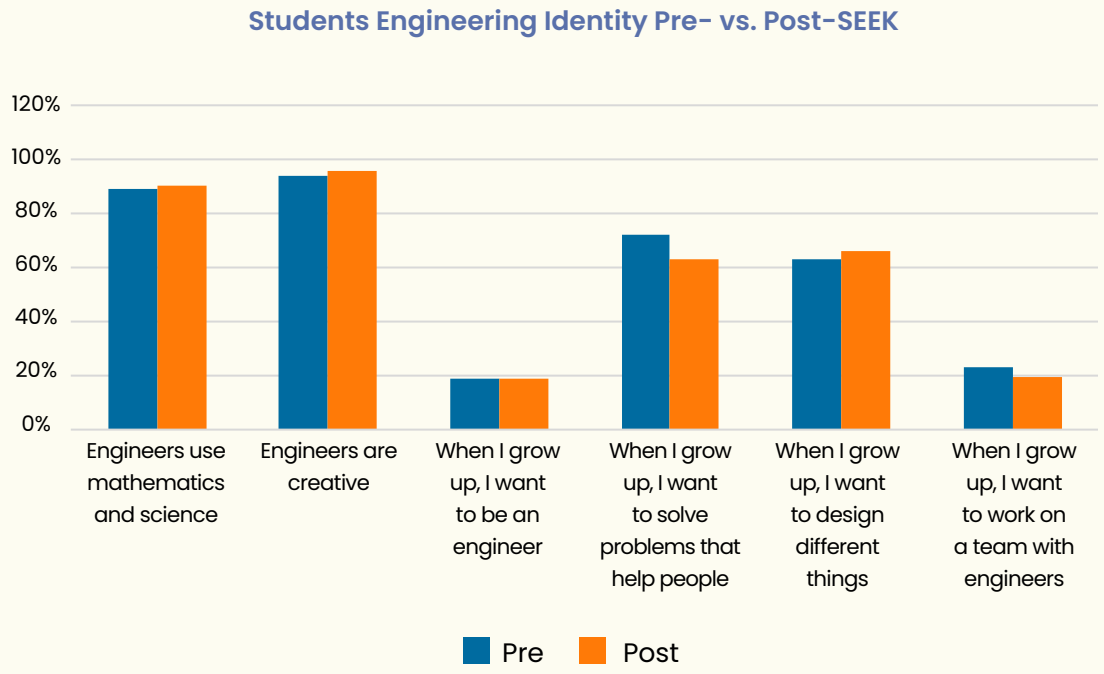
Measuring Student Growth

Beyond reach and participation, NSBE SEEK measures critical outcomes of student learning, confidence and identity as future engineers. Each year, pre- and post-assessments capture changes in students' attitudes toward STEM, teamwork and problem-solving.

In 2025, 425 students completed pre-assessments and 183 completed post-assessments across both in-person and virtual camps. Results showed consistent learning gains in both formats. In-person students benefited most from mentoring relationships and teamwork, while virtual participants demonstrated equal growth in curiosity, digital collaboration and perseverance.

To ensure reliability, NSBE SEEK researchers used established tools, including the Engineering Identity Development Scale (EIDS), Youth Life Skills Inventory, Attitudes Toward Math and Science, Perceptions of Engineering Survey and Student Future Aspirations Survey. These instruments were streamlined to minimize redundancy and fatigue, making the process both credible and student-friendly.

Engineering Confidence & Identity



Students showed notable gains in their confidence as problem-solvers and future engineers. Across both in-person and virtual camps, participants increasingly saw themselves as creators and innovators.

This progress reflects the value of hands-on projects and mentorship in making engineering confidence accessible and personally relevant.

> **"It felt good to think like a real engineer. It was a really good new experience."**
>
> **– Student**

Gender Insights

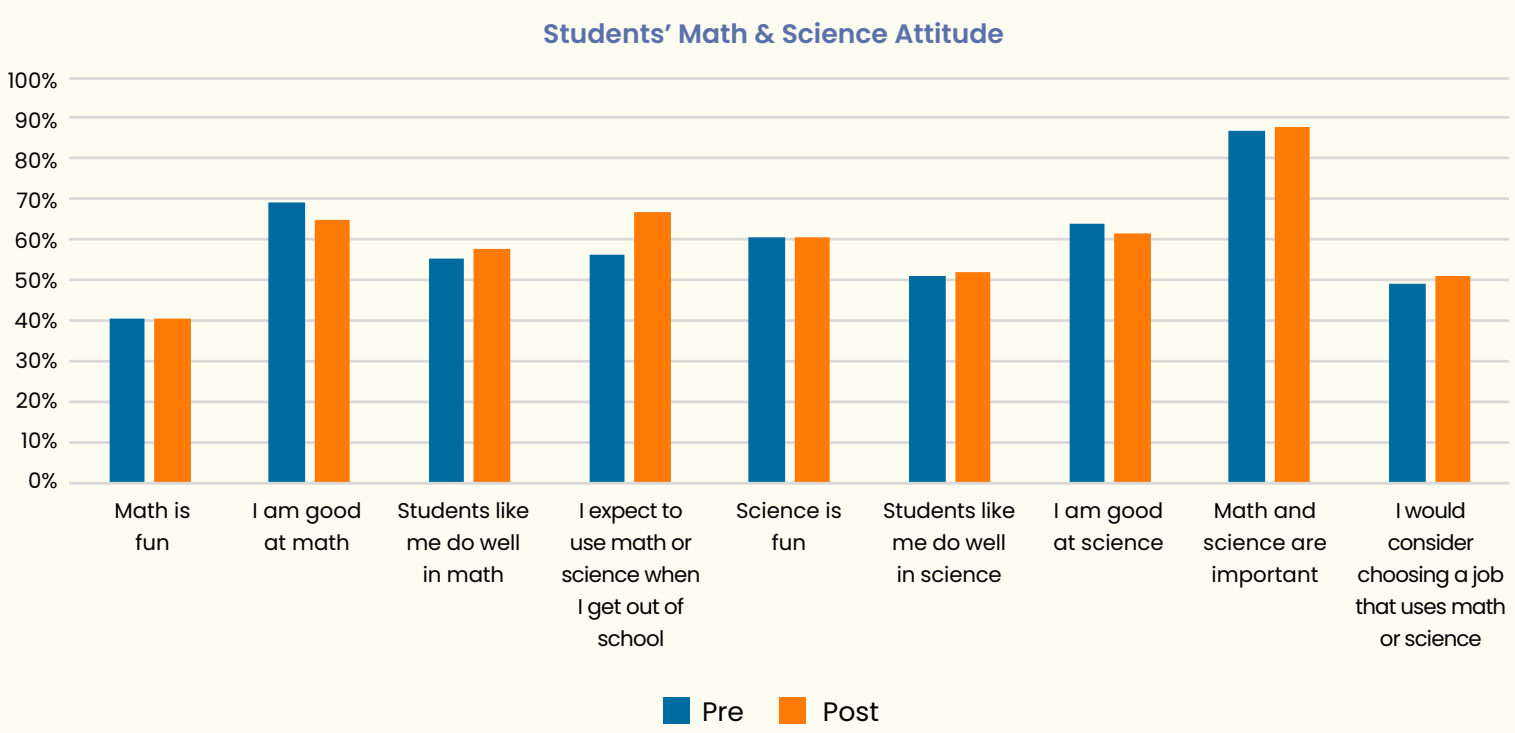
Across both in-person and virtual camps, NSBE SEEK helped narrow gender gaps in engineering confidence.

NSBE SEEK 2025 helped narrow gender gaps in engineering confidence. Girls made notable gains in science confidence. They began the program less likely to identify as engineers, but their post-assessment scores nearly matched those of male peers. At the all-girls Houston site, participants showed some of the strongest gains in self-efficacy.

- **Girls reported strong gains in science confidence, with those feeling "good at science" rising from 46% to 70% and those believing "students like me do well in science" from 38% to 59%.**
- **Math confidence results were mixed: belief in doing well in math improved (42%→59%), while self-ratings of being "good at math" dipped slightly (65%→63%).**
- **STEM career interest among girls declined slightly (58%→52%), possibly reflecting greater realism after exposure to engineering challenges.**
- **Engineering identity strengthened, with interest in becoming an engineer increasing (19%→26%) and understanding that "engineers use math and science" reaching 100%.**

By contrast, male students maintained or increased confidence across nearly all areas, particularly in expecting to use math or science after school (52%→83%) and in teamwork and design-related measures. These results highlight NSBE SEEK's dual impact. It boosts confidence for all students but also reveals where sustained mentorship and exposure can sustain girls' long-term confidence and engagement in STEM.

Attitudes Toward Math & Science



After NSBE SEEK, more students expected to use math and science in the real world, and some considered careers requiring these skills. While enjoyment of the subjects remained stable, NSBE SEEK increased belief that math and science are useful and applicable beyond the classroom. The belief that "I expect to use math or science when I get out of school" rose by 11 percentage points, from 56% to 67%. This supports NSBE SEEK's goal of strengthening academic foundations early in the pipeline.

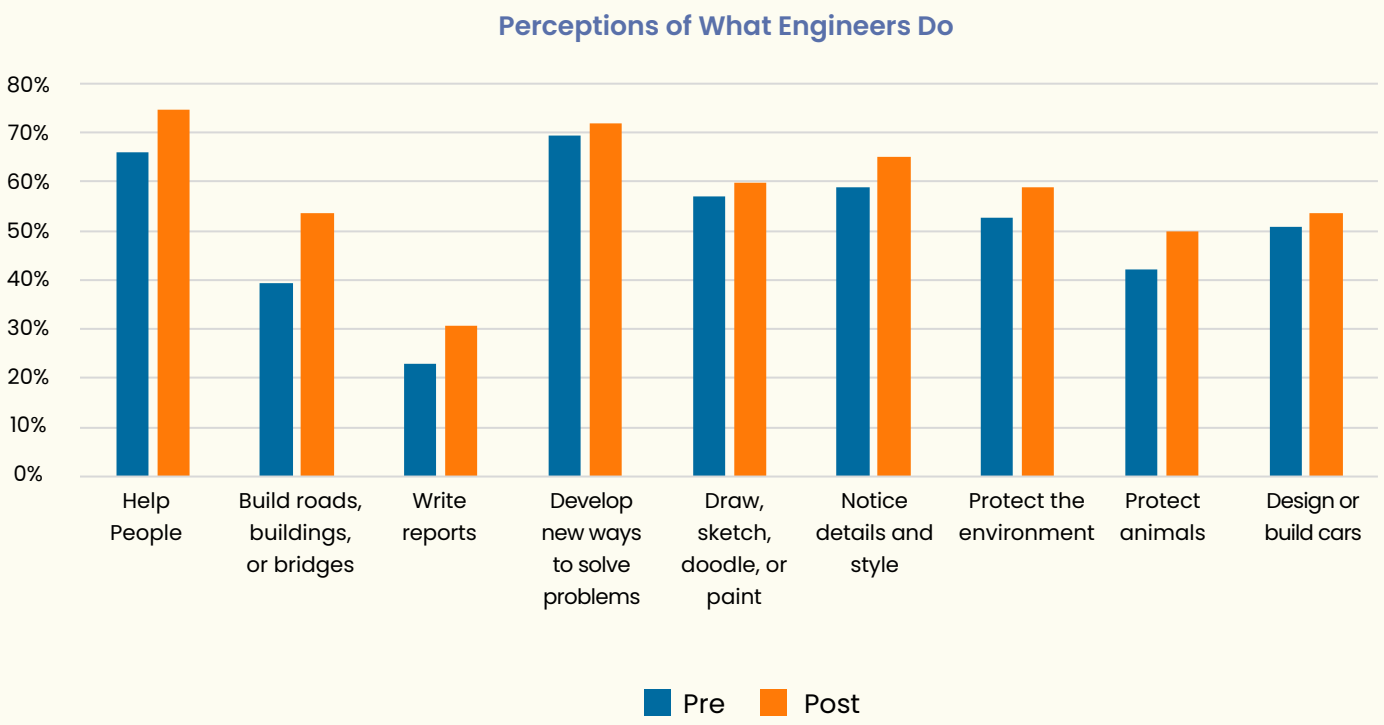
"Something I'm really impressed with is their understanding of code at this level and being able to apply it to the United Nations sustainable development goals."

– Madison Simmons, Honeywell Volunteer

"They have been focusing on artificial intelligence, and they were able to answer some questions around large language models, prompts, and algorithms. To learn emerging technology will really help and prepare them for college and careers."

– Zack Draper, Target Volunteer

Perceptions of Engineering



Before NSBE SEEK, many students associated engineering primarily with "building things" or "working with machines." After three weeks of hands-on projects and mentorship, students' perceptions broadened dramatically.

They began describing engineers as problem solvers, helpers and innovators. They described engineers as people who design solutions that improve communities and make life better for others.

This shift captures NSBE SEEK's core benefit. It expands how students see both engineering and themselves in it. By humanizing the profession, NSBE SEEK helps young learners connect engineering to purpose, creativity and service.

Key Takeaways

- **NSBE SEEK students showed measurable growth in STEM confidence, curiosity and persistence.**
- **Girls made substantial gains in science confidence, with some mixed progress in math self-ratings, suggesting a need for continued mentorship.**
- **Students left NSBE SEEK with a more accurate and inspiring understanding of what engineers do.**
- **NSBE SEEK's hybrid success confirms the model's strength as both an in-person and virtual STEM experience.**

Parent, Volunteer & Staff Perspectives

Parent Perspectives

While student assessments show clear gains in confidence and STEM identity, parents tell the story behind the data and provide an essential perspective. Families described the joy of seeing their children come home excited to build, explore, and talk about engineering. Their feedback served as proof that NSBE SEEK's influence extends far beyond the classroom and plays a unique role in making STEM accessible, fun, and relevant.

Parents consistently expressed gratitude for NSBE SEEK's hands-on learning, mentorship and accessibility. Many parents emphasized that NSBE SEEK's no-cost model allowed them to provide an enriching summer experience that might otherwise be out of reach. Families repeatedly cited affordability, quality instruction and mentorship as leading reasons they enrolled again or referred new participants.

In the end, they described visible growth in their children's confidence, teamwork and enthusiasm for STEM, turning curiosity into confidence.

> **"I see such a change in my daughter, from the standpoint of her being confident in herself and then understanding what engineering is all about. I could not wait for my daughter to experience all of the things that NSBE has to offer by the way of this camp."**
>
> **– Parent**

> **"I think the biggest 'wow' moment for me and my family has to be when we come here every week. Not only do we get to see what my child is working on; we get to see the people, we get to see the mentors, the directors, the other parents. It was really a family-oriented program."**
>
> **– Parent**

Across all sites, more than 90% of parents reported being satisfied or very satisfied with the program overall. Each metric showed an increase from summer 2024. The strongest satisfaction indicators related to:

- The quality and enthusiasm of collegiate mentors,
- Hands-on engineering challenges, and
- Visible growth in students' confidence and teamwork.

Parents Survey Results Year-Over-Year		
Metric	**2024 Parent Survey**	**2025 Parent Survey**
Satisfied with communication with staff	81%	98%
Satisfied with curriculum quality	93%	98%
Satisfied with overall program	93%	100%
Gained insight into child's interests and strengths	84%	94%
Feel empowered to facilitate child's education and development	81%	85%
Program facilitated supportive community with parents	71%	85%
Would recommend NSBE SEEK to a family member or friend	96%	100%
Program met their expectations	90%	96%
Program met child's expectations	88%	95%

Parents of virtual participants noted the program's flexibility and the creativity of online engagement, while parents of in-person campers highlighted the value of community and direct mentor interaction.

Key Takeaways

- **Parents overwhelmingly rated NSBE SEEK as a transformative summer experience.**
- **Families praised the mentorship, engagement and accessibility of the program.**
- **NSBE SEEK continues to maintain its no-cost model, thanks to our partners, removing financial barriers that often limit participation in STEM programs.**
- **Parent feedback reinforces NSBE SEEK's impact beyond academics. Participation helped increase confidence, curiosity and joy in learning.**

Voices of Our Mentors, Staff & Volunteers

"The creativity, confidence, and teamwork these boys displayed was more than a presentation; it was a reflection of growth, brilliance, and brotherhood."

– Kendria Johnson, Site Director

Mentor Perspectives

NSBE SEEK mentors , NSBE collegiate members and young professionals, serve as instructors and role models. In 2025, more than 50 local mentors and staff guided students through hands-on engineering projects while inspiring confidence and curiosity.

Mentors consistently described the experience as rewarding and transformative, both for students and for themselves. Many shared that NSBE SEEK strengthened their own leadership, communication and teaching skills, and several plan to return in future years or recruit peers to join.

> **"I've been involved in NSBE since I (was) 8. I actually went to the camp. I've been a part of NSBE Jr., and now I'm a Collegiate member of NSBE actively working at LSU. NSBE just truly put me on that path."**
>
> **– Savannah Williams, Mentor**

> **"I just love the fact that you can see how their brains work, and you can see when they get it and they get so interested. I just learned how to be a better person being around kids."**
>
> **– Soleli Brewer, Mentor**

Through mentorship, NSBE SEEK advances NSBE's mission to increase the number of Black engineers and improve pathways from classroom to career.

> **"Seeing these young Black boys in a space where there's no limit to engineering and what it could look like has really been amazing; it's a special space. Just because they're in elementary school doesn't mean these concepts are too complex for them to grasp and really fly with them. If you have the opportunity to work with NSBE, it is life changing."**
>
> **– Ashley Wallen, Site Director**

Volunteer Feedback

This year, NSBE SEEK welcomed 160 community and corporate volunteers across all camp locations. Their support enhanced Showcase Fridays, expanded learning, and created opportunities for meaningful connections between students and STEM professionals.

The volunteer survey results reflected high satisfaction, commitment, and support of NSBE's mission:

47%	have participated in NSBE SEEK before.
76%	believed that their experience contributed to their decision to continue to support NSBE SEEK.
88%	of respondents felt that their company will (very) likely renew its partnership with NSBE SEEK in the future.
88%	were satisfied with the overall program.

> **"This program is important because it's taking kids from the inner city and giving them an opportunity to learn more at an early age. The impact it's having on these kids is awesome!"**
>
> **– Torian Farrar, Target Volunteer**

NSBE remains deeply grateful for these volunteers whose partnership, time, and expertise enrich the NSBE SEEK experience and help empower students nationwide.

Key Takeaways

- **More than 210 mentors, staff, and volunteers supported NSBE SEEK students nationwide.**
- **Mentors served as role models and catalysts for student confidence.**
- **NSBE SEEK continues to build representation and leadership capacity within NSBE's membership.**
- **Mentors and volunteers reported high satisfaction and personal growth, with many planning to return in future summers.**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HELLO
Buzzer 1

Looking Ahead

As NSBE SEEK concludes its 19th summer, we celebrate a program that continues to transform how students see themselves and what they believe is possible. Across four in-person sites and a national virtual camp, NSBE SEEK reached nearly 500 students from more than 20 U.S. states and Canada, igniting curiosity and confidence through hands-on engineering experiences.

Key Findings for 2025

This year's assessments and reflections affirm that NSBE SEEK remains one of the most effective early interventions for shaping engineering identity and interest in STEM:

- Students showed significant gains in engineering confidence and problem-solving skills.
- Science confidence among girls rose sharply, while attitudes toward math and career interest in math and science remained steady overall, underscoring the need for continued, sustained mentorship.
- Participants left with a broader, more accurate understanding of engineering as creative, community-centered work.
- Both in-person and virtual models delivered strong learning outcomes, demonstrating NSBE SEEK's adaptability and reach.
- Parents and mentors observed increased confidence, teamwork and curiosity, underscoring NSBE SEEK's holistic impact.

These insights will guide program enhancements and partnerships as NSBE continues to refine NSBE SEEK's curriculum, deepen mentor development and strengthen family engagement.

Looking Toward 2026

In 2026, NSBE SEEK will celebrate its 20th summer, a milestone that honors nearly two decades of partnership, innovation and impact. As we look forward, NSBE remains steadfast in advancing our mission to help students and graduates excel academically, succeed professionally and positively impact the community.

The story of NSBE SEEK is still unfolding. Each summer, we learn from our students and communities. We build on the previous year by creating more opportunities for discovery, connection and belonging in engineering.

"Together, we can continue building the pipeline, one student, one summer, one success story at a time."

We invite partners, funders, NSBE members and community champions to join us in this next chapter, to nurture curiosity, expand opportunities and invest in the next generation of engineers.

Appendix

A2. In-Person vs. Virtual Post-Assessment Comparison

Outcome Measure	In-Person (Avg % Increase)	Virtual (Avg % Increase)
Engineering Confidence	+18%	+17%
Science Confidence	+22%	+19%
Math Confidence	+12%	+11%
Interest in Becoming an Engineer	+9%	+10%

Both delivery formats produced comparable growth in confidence and STEM identity, demonstrating NSBE SEEK's adaptability across learning environments.

A4. Perceptions of Engineering Survey Results

"Engineers ..."	Pre-Assessment (%)	Post-Assessment (%)
... help people and improve communities.	46	79
... build or fix machines.	62	41
... design solutions to solve problems.	54	83
... work with teams to create new ideas.	39	72

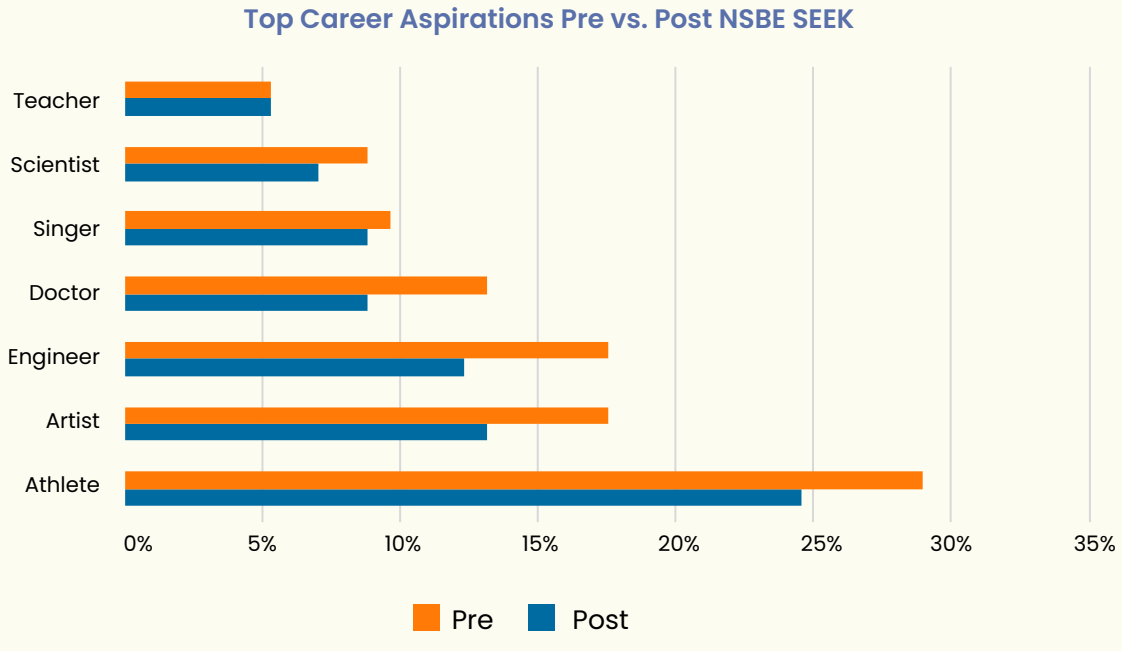
After participating in NSBE SEEK, students were more likely to describe engineers as creative problem-solvers who help people, showing a clear shift in perception.

A5. Gender-Based Analysis Summary

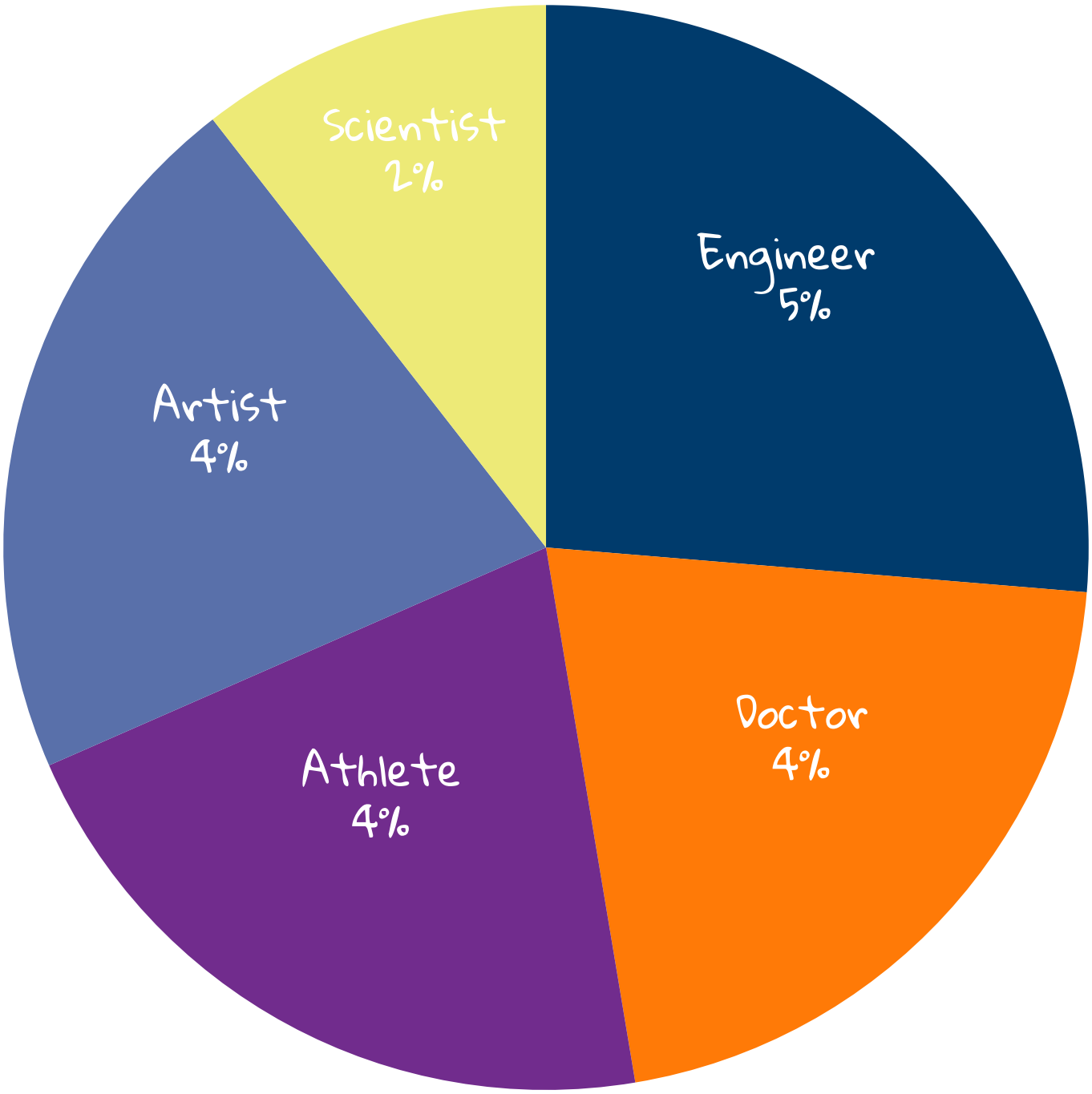
Measure	Girls (Pre %)	Girls (Post %)	Boys (Pre %)	Boys (Post %)
Feel Good at Science	46	70	55	71
Feel Good at Math	65	63	68	74
Want to Be an Engineer	19	26	29	33

Girls showed notable growth in science confidence and engineering identity; boys maintained steady gains across all measures.

A6. Career Aspirations Pre- and Post-Survey Results



Top 5 Professions Increased After SEEK Program



Empirical Evidence on NSBE SEEK Program Impact

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2. Fletcher, T., Alharbi, A., Qasim, M., Hooper, K., & Collins, E. (2025). Examining Black students' and mentors' experiences in a summer engineering experience for kids program. *Journal for STEM Education Research*. https://doi.org/10.1007/s41979-024-00142-z

3. Fletcher, T., Hooper, K., Fernandez Alfonso, D., & Alharbi, A. (2024). Gender & STEM education: An analysis of interest and experience outcomes for Black girls within a summer engineering program. *Education Sciences*, 14(5), 518. https://doi.org/10.3390/educsci14050518

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