



**KEYSTONE  
SCIENCE SCHOOL**

**2024 IMPACT REPORT**



**KEYSTONE SCIENCE SCHOOL  
GIRLS IN STEM**

# GIRLS IN STEM



In 2024, Keystone Science School's Girls in STEM program provided unique and inspiring opportunities for **74 female-identifying/non-binary students** to explore the wonders of science, technology, engineering, and math. Across four dynamic programs—**Snow Science, Medical Explorers, Film Fest, and Water Wonders**—participants gained hands-on experience, built confidence, and connected with female mentors in a supportive, empowering environment.

In today's professional world, women remain underrepresented in STEM fields. This gender gap extends beyond the workforce, affecting the pursuit of post-secondary STEM degrees. Research points to several factors, including lower self-esteem in STEM subjects among young women, limited access to mentors in STEM fields, and societal gender stereotypes that influence both educational and career paths.

At Girls in STEM, we believe in turning these challenges into opportunities. Our programs provide an all-girl+ environment where participants feel empowered to ask questions, share ideas, and explore new possibilities. According to the National Education Association, "Girls who learn in all-girl environments are believed to be more comfortable responding to questions and sharing their opinions in class and more likely to explore more 'nontraditional' subjects such as math, science, and technology."

By creating supportive, hands-on experiences led by female mentors, we aim to inspire girls to see themselves as scientists, creators, and leaders. Our 2024 programs made strides toward breaking barriers and building the next generation of innovators. Let's dive into the highlights and impact we made this year!



## PROGRAM HIGHLIGHTS



### Snow Science

**10 Participants | 280 Contact Hours | 10 Mentors**

Students became snow scientists, learning to analyze snowpack, study crystal structures, and simulate avalanche scenarios. Working alongside **female ski patrollers from Arapahoe Basin**, who shared their expertise in avalanche safety and snow science. With hands-on experiments and expert guidance, they uncovered the science behind the snow-covered landscapes we all love.



### Medical Explorers

**25 Participants | 700 Contact Hours | 11 Mentors**

Students jumped into the fascinating world of medicine, removing glitter from "Patient Billy Bob Joe's" knee during a mock surgery, mastering pipetting techniques, analyzing cells under microscopes, and collecting muscle movement data. A highlight of the program was collaborating with experts from the **Steadman Philippon Research Institute**, where participants learned about cutting-edge research in sports medicine and biomechanics. With each activity, students took another step toward imagining themselves in the medical field!



### Film Fest

**46 Participants | 1,288 Contact Hours | 7 Mentors**

Budding filmmakers stepped into the spotlight, learning the art of storytelling and production from start to finish. Participants dove into the creative process, writing scripts, directing scenes, and mastering camera techniques. They learned about the science behind shot composition, lighting, sound design, and editing, transforming raw footage into captivating short films. These masterpieces premiered at the **Breck Film Fest**, earning cheers (and a few shrieks) from the audience.



### Water Wonders

**18 Participants | 504 Contact Hours | 6 Mentors**

Students dove into the fascinating world of water science, exploring the processes that keep our most vital resource clean and accessible. They identified macroinvertebrates to assess water quality, engineered DIY water filters, and discovered the science behind filtration. Ending the day with a tour of **Breckenridge 2nd Water Treatment Plant**, where students saw firsthand how water moves from the environment to our taps. The program showcased how science tackles real-world challenges.



# MEASURING OUR IMPACT



**99**

Total Enrollments

**2,772**

Hours of Exploration and Learning

**57%**

new faces to our STEM programs

**100%**

of parents would recommend KSS

**78%**

of participants now want to dive deeper into STEM fields

**89%**

of participants liked working in an all-girl/non-binary environment



## Funding & Scholarships

**\$1,480** in funds subsidized to ensure more girls could join the fun

## Students By Grade

**5th** 12 students (small but mighty)

**6th** 21 students

**7th** 27 students (They ruled the lab!)

**8th** 14 students

## STORIES OF IMPACT



"This is our second year at Film Fest. We love that its a short weekend program- and all girls in STEM! Our daughter liked how she got to work with lots of different mentors to learn to edit. We had a great time! We love that it's shown at the Breck Film Festival. It's a really special experience. We'll be back next year."

"The most valuable thing gained: "Independence in general and an opportunity to learn about actual careers that are creative/in the arts."

"Cool and valuable program topics, especially for where we live. "

"All the instructors and scientists were really cool."

"Location and quality of education, Learning about STEM jobs relating to water, my daughter loved her weekend and now thinks she wants to be a biologist."



# MENTORS



34 INSPIRING FEMALE MENTORS



At the core of every Girls in STEM program are our incredible mentors – **34 passionate women** who brought their expertise, energy, and encouragement to inspire the next generation. From leading snow science experiments to guiding students through mock surgeries and creative filmmaking, these role models showed participants what’s possible in STEM and beyond. Each program had mentors who not only taught technical skills but also shared their stories, breaking down stereotypes and building meaningful connections. With their support, students saw real-life examples of leadership, perseverance, and the power of women in STEM, creating an environment where confidence and curiosity thrived.

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“All of the mentors inspired me and they inspired me by learning about how I can do anything. Thank you this was a great weekend and thank you very much for all the counselors and people who work here thank you” – **STEM student**

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“The mentor we met on Saturday is Megan and I really liked how she talked about the process of film and it inspired me to learn more about film. I love it here and I plan to come back next year. Thanks for all the fun!” – **STEM student**

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Mentor that inspired you: “All of them because they all had their different lifestyles but they all made me feel special and empowered and really inspired in different ways.” – **STEM student**



## Moments of Magic



### Most “Eww, Cool!” Moment:

Finding a giant Caddisfly during Water Wonders’ macroinvertebrate hunt. Creepy AND fascinating!

### Loudest “WOW!” Moment:

Watching their films premiere on the big screen at Breck Film Fest. Instant standing ovation!

### Favorite STEM Snack:

Hot cocoa + marshmallows (because scientists need fuel!)

### Snow Crystal Experts:

By the end of Snow Science, students could confidently identify at least three types of snow crystals.

### Muscle Movement Detectives:

They measured and collected real data on muscle activity—and maybe a little dancing on the side!

“It was so fun and I made a lot of new friends!”

– **STEM student**





## Our 2024 Girls in STEM sponsors



## Thank you for your support!

Our Girls in STEM program continues to grow, with plans for even more innovative programming in 2025. We remain committed to providing opportunities for girls to engage with STEM in ways that are exciting, accessible, and empowering. With your support, we can continue to nurture curiosity, build confidence, and help girls envision themselves as the future leaders in science, technology, engineering, and math.

Thank you for being a part of this journey. Together, we are changing the face of STEM.

**Support our mission today at [keystonescienceschool.org](https://www.keystonescienceschool.org)**

