

Stronger Than You Know

From Hopkinton, Massachusetts, we are a Girl-Powered team consisting of seven engineers with a goal of **team equality**. We collectively set goals for ourselves & our team.



Disha
She/Her
Coach
Builder

Joey
He/Him
Coach
Programmer

Sidhi
She/Her
Builder
Programmer

Jahnvi
She/Her
Programmer
Builder

Rylee
She/Her
Driver
Builder

Emily
She/Her
Documenter
Builder



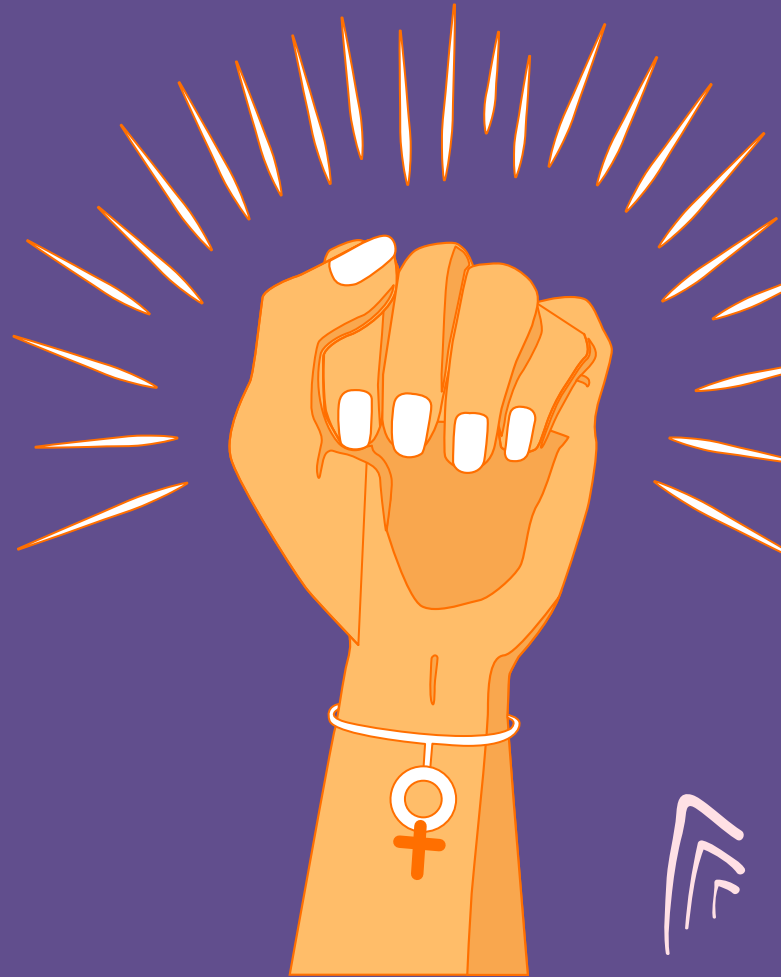
Dylan
She/Her
Builder
Documenter

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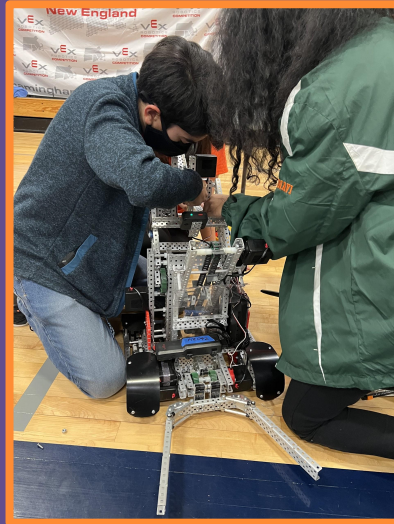
Women **defy sexist expectations** by displaying courage, giving future generations inspiration. Without Marie Curie & Susan Anthony, we may not have been apart of the STEM community.

“At the end of the day, we can endure much more than we think we can”

- Frida Kahlo



Though we have specialized roles, we try **different aspects of robotics**, gaining engineering & teamwork **experience**. Jahnavi began building and after programming exposure, she realized that was her preference. Our team enthusiasm allowed her to comfortably change her roles.



Through experiences like these, we learned the importance of passion, communication and challenge.

With different roles, skills & diverse backgrounds, each of us have **new perspectives** on our robot & team chemistry. Even with this, we share two traits: our **dedication & determination** to succeed. Making memories, each of us grew closer which provided a comfortable environment to share ideas.



Our robot is not only a combination of our technical abilities, but also important **memories**; inside jokes, & team dinners <3



Bonding is the secret to our success. We went to four different competitions winning **3 Excellence Awards** & the **Design Award** at the WAVE WPI Signature Event.



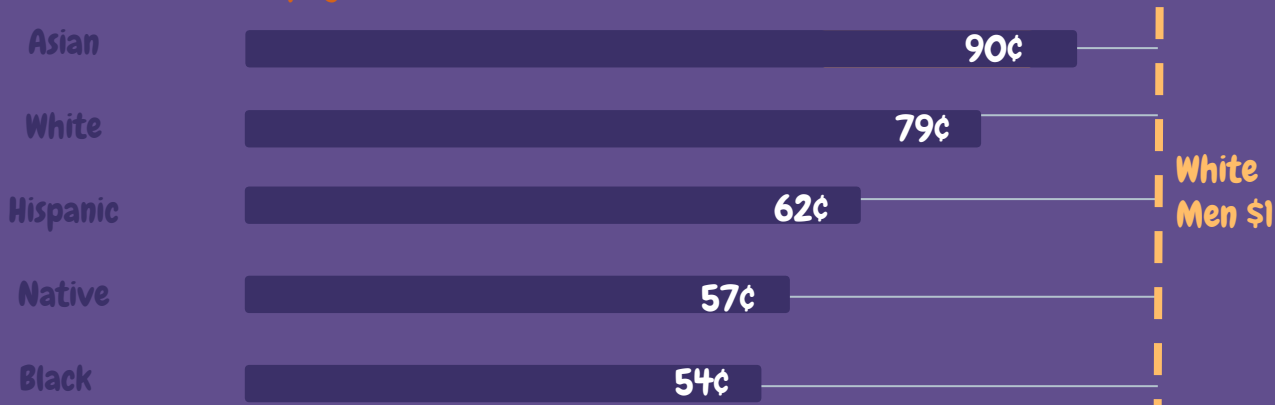
What is Girl-Powered?

Girl-Powered is **empowering women to join STEM & promoting feminism**. We **inspire** girls to take STEM courses and join a STEM career which are male-dominated. Young girls are given barbies while boys are given cars. **What is this saying about our society?** If we have to segregate children's toys, then of course the percentage of women in STEM is so low. **Girls have been taught by society to stand in the shadows of men.** Girl-Powered, is showing **women that they are a part of the spotlight too** so their voice matters.

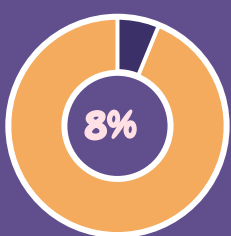
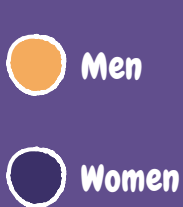


Women Career Statistics

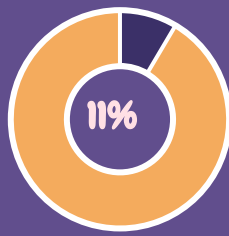
Median annual pay, 2018, USA



Gender Pay Gap is when women are paid less than men for doing the same jobs. Women are on a path for financial dependence which can lead to **domestic abuse**. Coincidentally, female dominated jobs typically receive a **lower pay**.



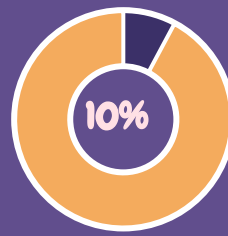
2016



2017



2018



2019

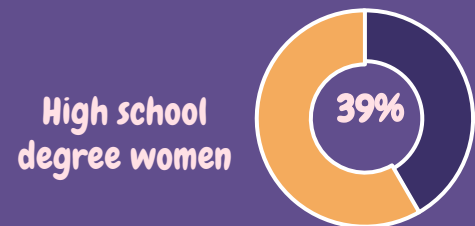
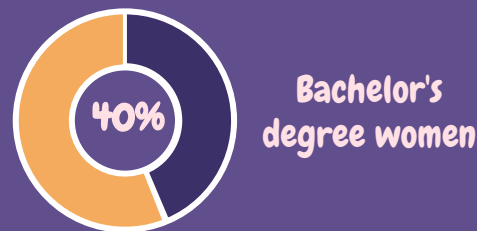
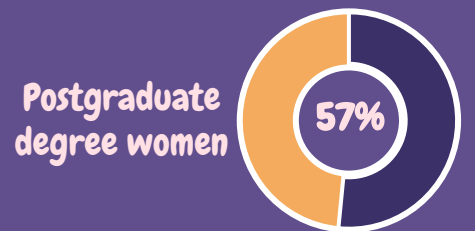
Women vs. Men in STEM

Women at work

“mothers...were more likely than fathers to say they needed to reduce their work hours, felt like they couldn't give full effort at work and turned down a promotion because they were balancing work and parenting responsibilities.” – Pew research center, 2019

	Men	Women
Earned less than a woman/man doing the same job	5	25
Treated as if they weren't competent	6	23
Received less support than a woman/man doing the same job	7	15
Been passed over for important assignments	5	10
Felt isolated in the workplace	6	9
Been denied a promotion	5	7
Been turned down for a job	4	7

Women who hold higher college degrees tend to face a greater amount of discrimination at the workplace.



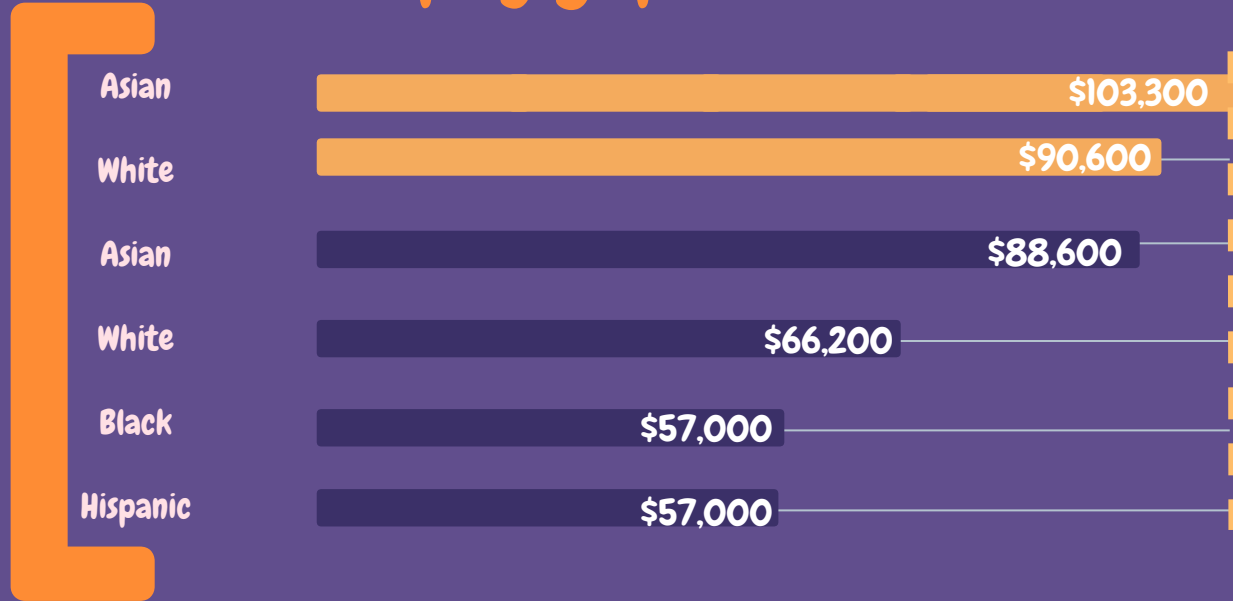
 % of women who have faced discrimination in the workplace



Median annual earnings
of full-time STEM
workers ages 25+
2019

- Men
- Women

STEM pay gap



Since women earned **53% of STEM colleges degrees** (2018), lack of education is not the cause of the wage gap. Society is the issue, woman are assumed to put in less dedication compared to their male co-workers. Along with the pay gap, 42% of women in the US face discrimination in the workplace. Our team wanted to see if the **same pattern** occurred in our **robotics community**.

	Taking survey	Want to pursue STEM career	Teased for doing STEM	Silenced when giving ideas	Have seen enough representation	Have been mansplained to
Male	40	87.5%	62.5%	2.5%	100%	50%
Female	40	27.5%	80%	100%	2.5%	100%
Non-binary	5	40%	20%	0%	0%	100%

At each competition, our team asked players to take a survey. Based on their answers we noticed a **disturbing trend of female students facing sexist behaviors** at only the high school level. In response, our team decided we **needed to amplify women's' voices** in our community. We **initiated a 3 part process** proving how powerful we could be.



What we did to help



Met with Middle School teams



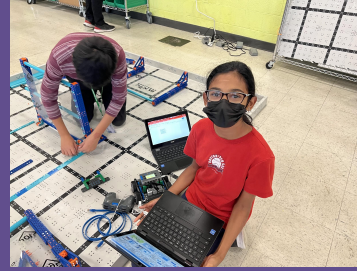
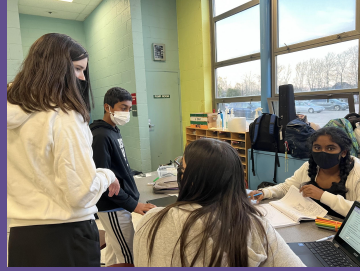
Ran Girl-Powered event



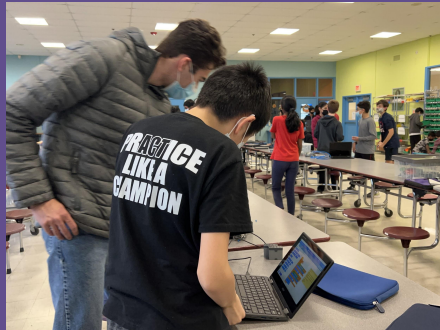
Volunteered for Moving Health



Met with middle school teams



While observing the middle school VEX teams, we noticed **girls were designated for notebook** while **boys took programming and driving**. Why was it that girls were automatically given notebook? Was it because all girls truly only enjoyed endless hours of writing and drawing? Curious, we **investigated further**, specifically into team 1715Y.



1715Y

After talking with Vaagmi a member of 1715Y, she **admitted she wanted to program and build**, even though she was given the documenter role.

2602H

How do you make sure everyone's heard?



Do you know what these girls want to do?



Vaagmi

No I want to build. I want to program.

“Coming in to talk our team really made us think about **contributing** more...As a girl in a male dominated club, you guys really **inspired us** to make our own decisions and show courage”

Vaagmi

Miscommunication was not their fault but society's. Boys are trained to assume dominance and **girls stay quiet**. Girls begin to lose interest in STEM around 15 (Microsoft). Let's not let “boys be boys” anymore and hold accountability so we don't lose any more **brilliant girls** to what society says.

Boys of 1715Y

If we have something to say we just say it.

Yes. They want to do notebook.

Girl-Powered Event

01

Programming games

On code academy we taught girls to use blocks by moving a character



02

3D Printing pens

We taught the girls to make their own shapes with the pens.



03

Robot driving

The girls got to tour the High School while driving the robots around.



04

Rocket building/launching

They constructed rockets out of cardboard and had the chance to launch them.

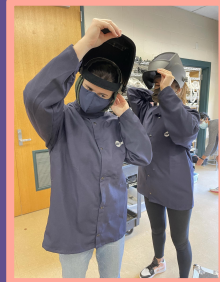


Moving Health

“Saving lives, one ride at a time”



Female-run non-profit, *Moving Health*, modifies motorcycles into detachable ambulances in Africa and to help their cause, our team funded, designed, and built trophies from motorcycle pieces & frames from African cloth as prizes for their sponsors.



STEM Role Model – Moving Health



Did you experience something that made your ideas feel not wanted?

“First, I don’t think I ever saw someone that looked like me that was in charge on an engineering team. I think that was really motivating to me to try and become one of those leaders. I found most of the internships I had, I’d usually be the only female on the team and was given more medial tasks than some of the male engineers, and I really took that as motivation into showing everyone that was a waste of talent.”

Any advice for an aspiring female engineer?

“There is so much good in the world that you can do as a female engineer and if more women were involved in engineering, I truly think the world would be a better place. Being able to lend your perspective on the world provides so much more than just having everything be designed by males, is extremely rewarding with so many challenges to solve. It has been really rewarding for me and is an amazing direction to take your career”



Emily Young, CEO/Co-founder

STEM role model

Cailyn
Hansen
Software
Engineer



Anna
Gusman
Product
designer

Duolingo, is a language learning software with 8.2 million daily users & a software for schools. Sidhi interviewed Cailyn Hansen who works on it & Anna Gusman who works on new initiatives. Woman like Cailyn and Anna contribute to the much needed representation of females in STEM making up the **50% of female employees at Duolingo**.

Future goals

1. Online advice

For robotics advice, teams can fill out forms and our most experienced member will respond.



2. Fundraise for Malala Fund

They “champion every girl's right to 12 years of free, safe, quality education.”



3. Middle school trip

Middle school was the time where girls leaned away from STEM. We want to help decrease the amount of girls who quit.



Advice

Thank you everyone for making this world a more inclusive place. Together we can eliminate bias, sexism, and discrimination from our little community to across the ocean. Let's strive for inclusion and a safe space for everyone.

Girls:

1. Reach out for support, someone will understand
2. Support other girls
3. Use your confidence, you won't realize how much you can achieve until you actually do it

Everyone else:

1. Listen. Every girl has a story. Please listen.
2. Make an inclusive environment for everyone (invite people to join, allow for ideas to be shared)



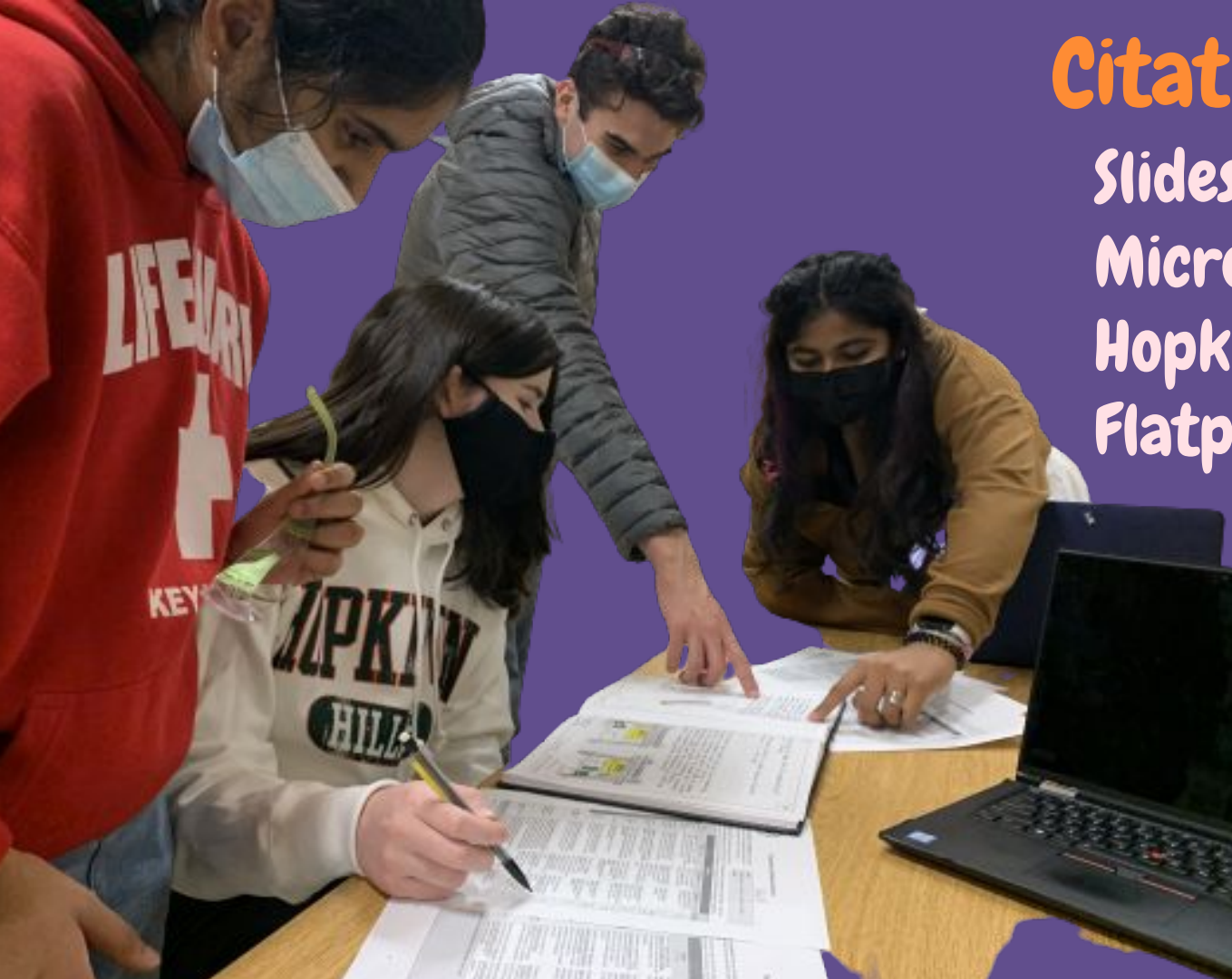
Citations

Slidesgo

Microsoft

Hopkinton BTE data

Flatpik



Thank you for your support!

Hopkinton High School
Hopkinton Middle School

VEX Robotics
REC Foundation

Mr. Scott

Ms. Allen

Mr. Spiegel

Mr. Challinor

Moving Health

Duolingo

Vaagmi

1715Y

