"Girl Powered" Essay

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VEX ROBOTICS COMPETITION
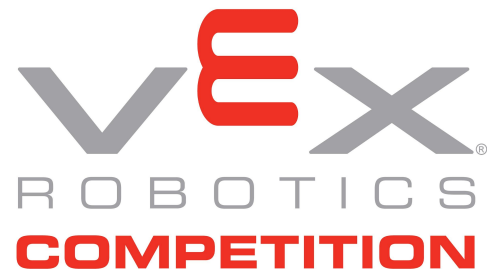
Introduction - Who Are We?

Hey! I'm Addison, and I am currently in the 8th grade and also Team Captain of 4073B. Being my third year of robotics and second year of VEX, I am pretty familiar with the main aspects of robotics (designing, building, and programming, and most of all, having fun!!). As a girl, I have run into many challenges for, well, being a girl, so the concept of Girl-Power is an amazing idea to me.

Hello! I'm Hailey, and I'm currently in 7th grade and I am one of the engineering notebook writers and a builder for team 4073B. This is my first year of being in the robotics industry, sometimes it is a struggle but it is an awesome opportunity to be a part of something like this. Being in the robotics industry as a girl can be hard at times because certain people don't think us girls are worthy enough to be a part of the robotics world, so the idea of Girl-Power is an amazing notion to me!

We **both** attend Joe Walker Middle school... GO JETS!!
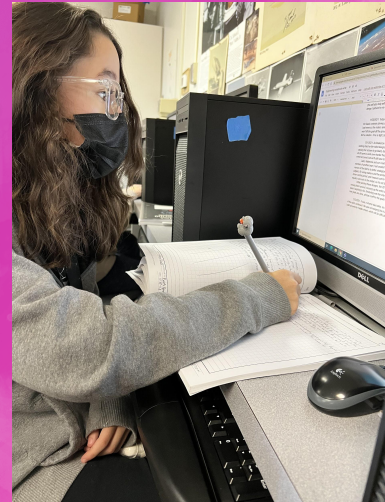
"Girl-Power," What Comes to Mind?

Girl-Power, its concept is inspiring to us, and for other women, as well. When the phrase "Girl-Power" arises, we picture a VEX Robotics team with females working together. Even though this is what we picture, this isn't all of Girl-Power. There is a lot more to Girl-Power than what shows at its surface.

Girl-Power, in the dictionary, means that it is "used in reference to an attitude of independence, confidence, and empowerment among young women." To us, this is true, when girls put their mind to it, they can have confidence, they can empower others, while not being too dependent on others.

Why is "Girl-Power" an Important Movement to Us?

Girl-Power holds a special meaning to most girls. Girl-Power is the reason we're here in robotics today, it's the reason, some ideas and inventions exist in our world. It's been giving females the confidence to speak up, to throw their ideas out there, regardless of whether their ideas will be put down or brought up.

It's quite unfair, how girls are usually seen. They're usually not given the same opportunities and are usually judged for being a girl in an engineering program, or other activities that men usually participate in.

This is the reason Girl-Power is important to us, and why other girls should, not just hear the word, but know the meaning and find what gives them confidence so they can step up!
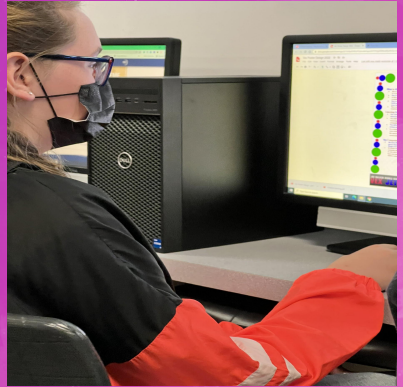
How do we take the Initiative?

We've heard talk about other girls feeling left out because all of the men in their class or program take credit for their ideas or just take all the opportunities. We reach out to those girls, telling them about Girl-Power, rather than just letting them figure it out on their own. We spread the word of Girl-Power, saying that it will give them the confidence to step and speak up.

If more girls learned about Girl-Power, females and males would have almost equal lives, especially in engineering careers.

What do our Team Members learn from their Experience in VEX?

Our team members are mainly builders with smaller side jobs (this includes programming and the engineering notebook). The other members work on Inventor and will sometimes help with the construction of our robot. The builders learn to push through problems and compromise. That's what they learn. Not everything is a straight path. Builders need to put their thinking caps on and find a way to solve the problem.

Programmers need to understand the programming language, which takes time and practice. Programming can also teach our team members that they are not alone. There are many people out there who are willing to aid them on their path through programming.

Inventor can be a frustrating program, especially when the team is changing their robot constantly for remakes. As the team could be faster at checking for problems, learning to be flexible around problems is one thing working on Inventor can teach you.

```cpp
void usercontrol(void) {
  // User control code here, inside the loop
  // User control code here, inside the loop
while (1) {
  Left_Motor.spin(directionType::fwd, (Controller1.Axis2.value() + Controller1.Axis1.value()), velocityUnits::pct); //(Axis1+Axis2)/2;
  Right_Motor.spin(directionType::rev, (Controller1.Axis2.value() - Controller1.Axis1.value()), velocityUnits::pct);//(Axis1-Axis2)/2;
  Center_Motor.spin(directionType::fwd, (Controller1.Axis3.value() + Controller1.Axis4.value()), velocityUnits::pct); //(Axis1+Axis2)/2;

  if(Controller1.ButtonL2.pressing() == 1) {
    //When the L2 Button is being pressed, the conveyor will carry the rings up
    Right_Conveyor.spin(vex::directionType::fwd, 80, vex::velocityUnits::pct);
    Left_Conveyor.spin(vex::directionType::rev, 80, vex::velocityUnits::pct);
  }
  else if(Controller1.ButtonL1.pressing() == 1) {
    //When the L1 Button is being pressed, the conveyor will carry the rings down
    Right_Conveyor.spin(vex::directionType::rev, 80, vex::velocityUnits::pct);
    Left_Conveyor.spin(vex::directionType::fwd, 80, vex::velocityUnits::pct);
  }
  else{
    Right_Conveyor.stop(brakeType :: hold);
    Left_Conveyor.stop(brakeType :: hold);
  }
```

How does the diversity of perspective change our robot design?

Diversity of perspective, the different ways to look at problems, specifically. We have lots of good ideas that lie in the heads of our team. Although some ideas are put down, we keep them in the back of our heads as a backup plan.

With different ideas coming in, it's the reason our robot looks the way it does now. If just one member of our team were to design our robot, our ideas would be so limited, we'd probably run low on new ideas or upgrades. Diversity of perspective changes our robot design positively and unlocks a wide range of ideas to design, fix, and upgrade our robot.

STEM Role Model

We currently do not have a STEM Role-Model, but if we did, we have ideas for a role model that could greatly help and influence our team.

- A strong female leader that could give us insight on aspects of robotics (Programming and building tips, how strategies work, and how to make them).
- Team management ideas and, for captains, pointers to become a successful and influential leader
- Supporter for Girl-Power and can spread the word on Girl-Power to increase its strength.

If this were a person in our real world (which, who knows, there might be), they would inspire our team to continue pushing past problems, mistakes, etc., and greatly influence us.