

**Title of submission:**

Awesome Future In Sports with VEX

(Career Readiness Challenge - Elementary  
School)

**Names of students:**

Kayly and Edward

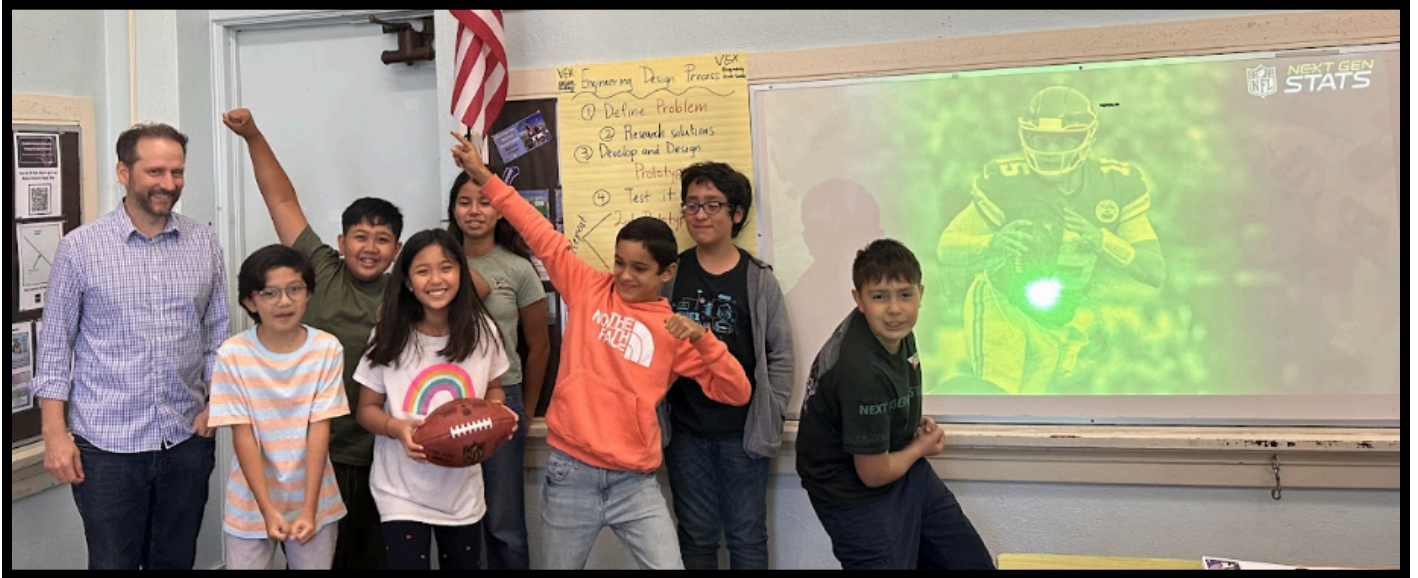
**Team Number:**

18000B

**Location of team:**

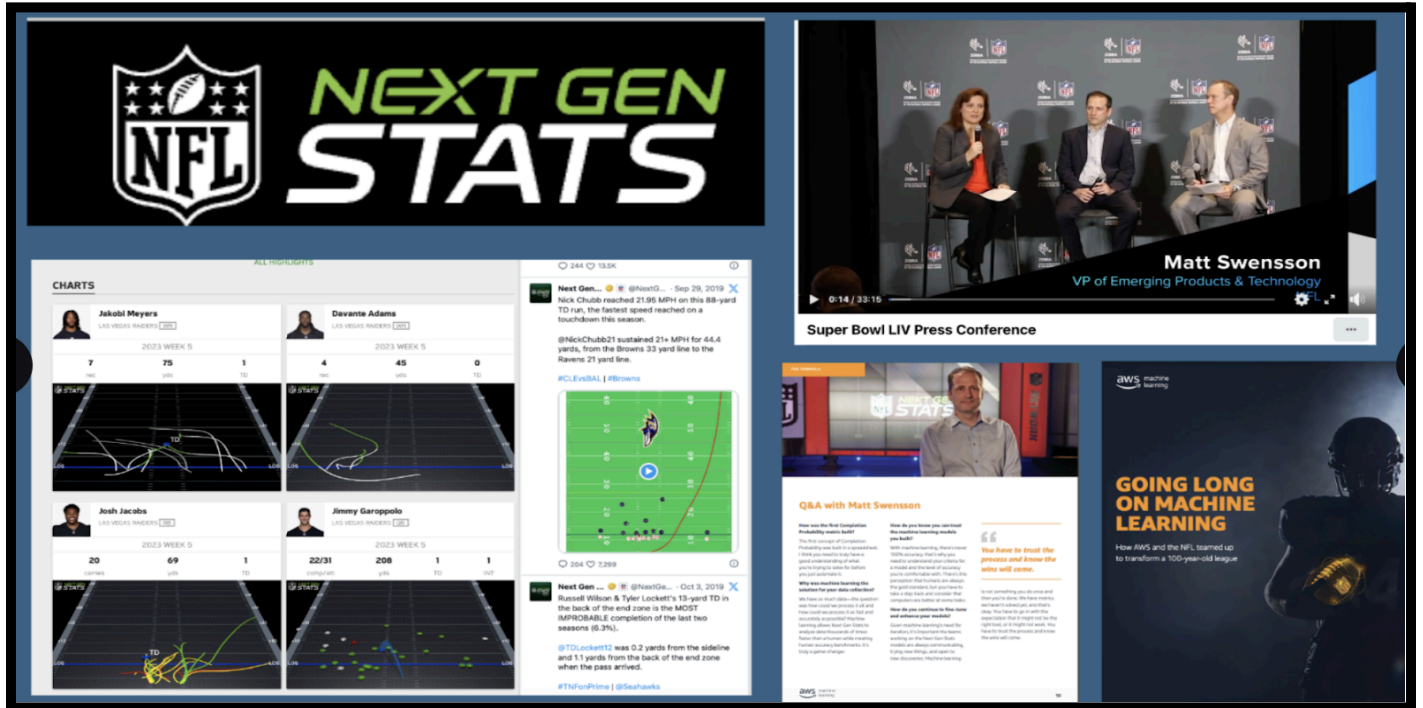
Carson Street Elementary STEAM Academy

# Awesome Future In Sports with VEX



Everyone on our VEX team grew up playing baseball, basketball, soccer, or football. Some of us may consider playing it professionally when we grow up. Even our families watch sports shows like the Super Bowl. We were thinking about how sports can connect with what we are learning in our VEX Robotics program. We discovered many similarities between sports and being a part of the VEX robotics. Teamwork is important for both VEX and sports. In the VEX competitions, teamwork is important because we can't drive by ourselves, we need to be paired with a partner and another team. Both teams have to do well in order to score the most points. We also need to work together as a team to create the lines of code to complete the task in one minute or less in our autonomous driving. In VEX we use a lot of technology and we wondered if sports also use technology and if what we learn

in VEX will prepare us for other careers like sports.



We wanted to see if there was anyone who works with sports that we can learn from. We talked to the adults and teachers at our school. One of our teachers knew someone who works for a sports company. She was able to set up a meet and greet with Mr. Swensson who works at The National Football League as the Senior Vice president of Product and Technology. He came to meet with us and share how technology is used in sports. He shared how his team uses the engineering design process. We also got to ask him questions, interact, and explore the football used at games. We also got to see the tracker that players wear. We were able to see the first, second, and third iterations of the tracker technology that is used in football games to see if a play is good or if a football player scored a touchdown.



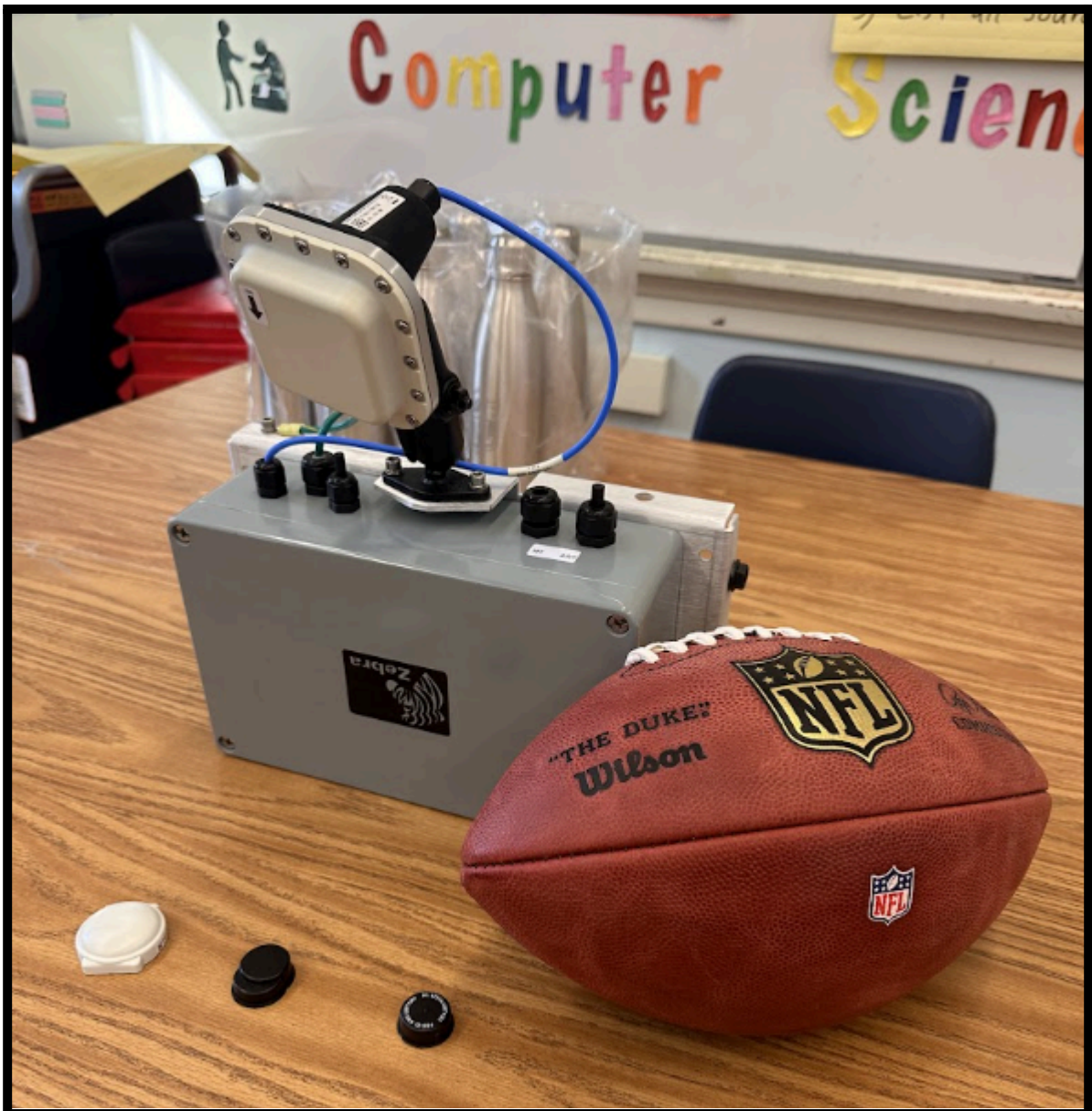
Mr. Swensson taught us that the NFL uses the design thinking process by first brainstorming ideas. Next, they research ideas and make a prototype. After making a prototype they test and see if it works properly. They evaluate a solution if it does not work how they want it and create another solution to fix the problem. They repeat the engineering design process over again.

These are the NFL Next Gen Stats Engineering Design Process:

- Start with the problem
- Brainstorm possible solutions
- Test out existing solutions from other sports
- Develop a new prototype
- Tested out the new prototype
- Modified prototype and create a new version
- Continued this process until they had the final solution
- However, it is still a work in progress, and creating new iterations

We learned that the NFL needed a better way to see if players scored a touchdown. Then the NFL had team meetings to brainstorm ideas and research

possible solutions. They looked at other sports teams' technology to get inspiration. The NFL tested out the technology from other sports to see if it would apply to football. Then the NFL tested out the new prototype in NFL games. After the games, they changed the tracker based on the results of the football games and feedback from the players.



The NFL's approach is very similar to our engineering process in VEX. We started by researching a robot that would get us as many points as possible. Then we planned out how to build it, and then we built it. We decided to first build a drivetrain and then if the drivetrain works, we would build on. After, we had tested it out. It worked! We started to build on the base to complete our robot. We assigned jobs to each member of the team. If a team member finishes their job, they can help another team member. We tested our robot out on the field and again at the competitions. After the competition, we talked about the competition and how we could improve for the next competition.

#### Carson VEX Team Engineering Design Process:

- Start with the problem which is our VEX Game
- Brainstorm possible solutions for our robot
- Build our robot prototype
- Test out our robot at the competitions
- We talk about how we can improve our robot for next competitions
- Tested out our improved robot
- Continue this process until final competition match



After our meeting with Mr. Swensson and learning about how technology is used in sports, we saw so many connections to what we are learning in VEX. Our participation in Vex Robotics prepares us for any future careers including in sports because we are learning the skills to solve problems and work as a team using the engineering design process. We are confident that being a part of VEX Robotics and competing in VEX competitions gets us ready to succeed in any STEAM careers in the future!