



BEFORE WE GET STARTED

Register your attendance.

Complete this form for each session you attend.

Session numbers
are in the program.

CAP
CON
2024



Rosters

2024-2025 UIL ROBOTICS COACH CLINIC

James Jobe, Clear Creek ISD
Andy Schaafs, REC Foundation



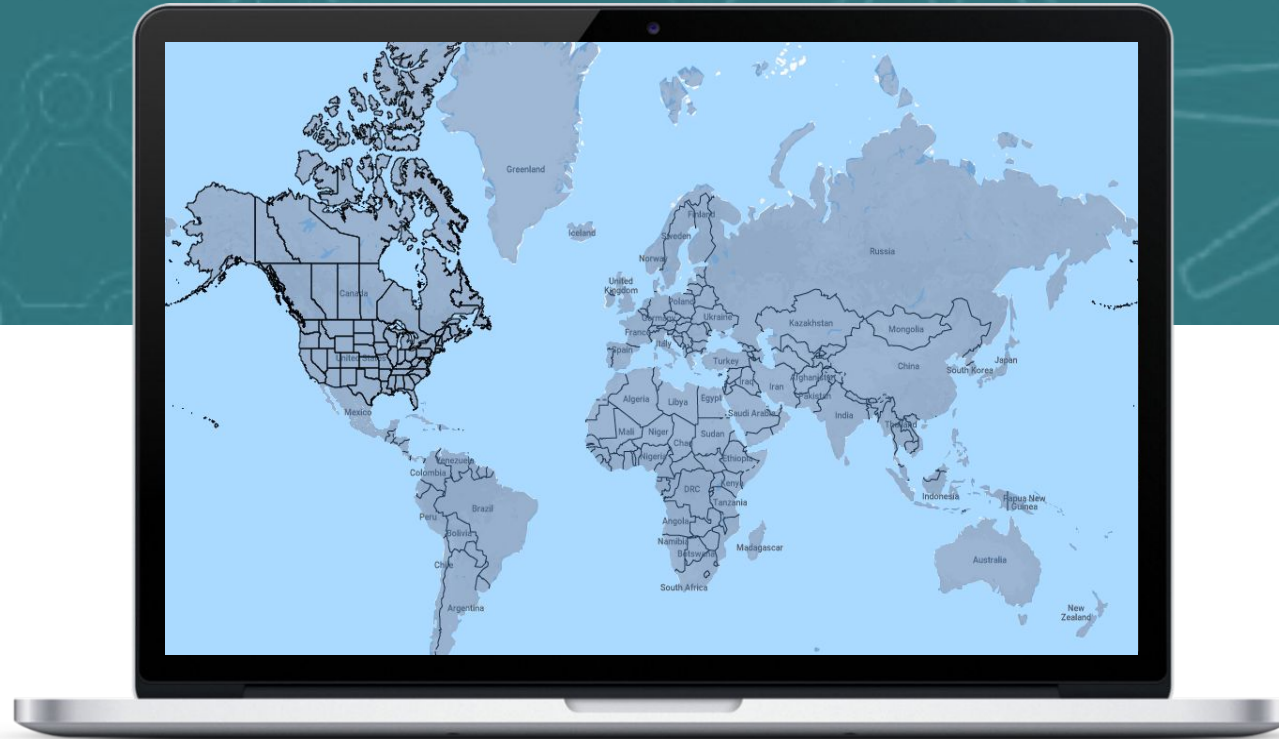
WWW.RECF.ORG



Andy Schaafs

Senior Director of Development

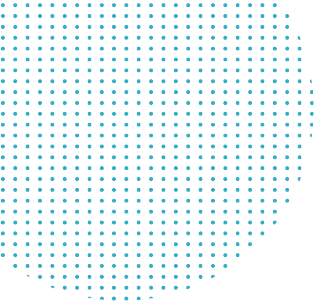
- ❑ Greenville, Texas
- ❑ B.S. Chemical Engineering from Texas A&M University
- ❑ 8 years Oil & Gas engineering
- ❑ 12 years Teacher
 - ❑ Chemistry, Physics, Env. Science, PLTW
 - ❑ Robotics and Engineering Program Manager
 - ❑ 10 years Head Soccer Coach
 - ❑ 12 years Head Robotics Coach (VRC, VIQC, FRC)
 - ❑ 7 years Event Partner
- ❑ 5 years with the REC Foundation
- ❑ Volunteer Preference: Emcee!
- ❑ Andy_Schaafs@recf.org



SUPPORT STAFF

<https://www.robotevents.com/support>

Click on your Country or State to find your support team contact information



MISSION

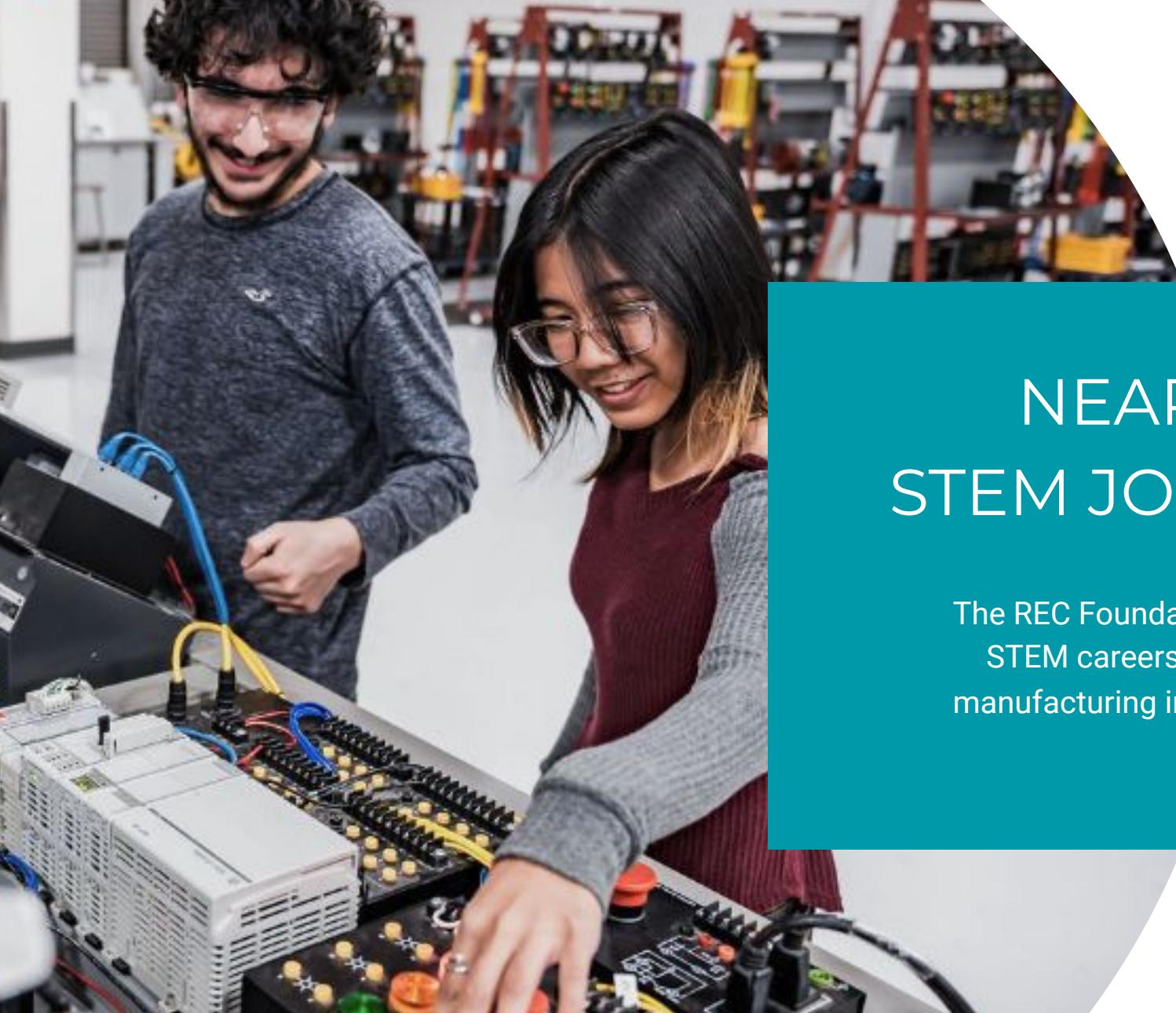
The Robotics Education & Competition (REC) Foundation's global mission is to provide every educator with competition, education, and workforce readiness programs to increase student engagement in science, technology, engineering, math, and computer science.



VISION

We see a future where every student designs and innovates as part of a team, overcomes failure, perseveres, and emerges confident in their ability to meet global challenges.





NEARLY **7 MILLION** STEM JOBS ARE **UNFILLED**

The REC Foundation's education programs pave the way to STEM careers, propelling robotics students to achieve manufacturing industry certifications **50%** faster than their counterparts.

**RAMTEC's 2018 study.*

RECF COMPETITION EVENTS

Over **40,000** teams registered for RECF competitions.

The RECF Foundation hosted **2,965** events during the season.



Our programs offer student-centered and self-paced learning opportunities, ensuring that participation and success are accessible to everyone, regardless of experience or geographic location. Additionally, we provide educators with free, easy-to-follow, hands-on STEM lesson plans, complete with guided explorations, to support their teaching endeavors.

ONE EVENT
THREE
COMPETITIONS



**Driver's Skills
Challenge
Matches**

Entirely driver controlled,
building problem solving, critical
thinking and teamwork skills



**Game
Challenge
Matches**

Multiple robots compete with
other robots to score as
many points as possible



**Autonomous
Coding Skills
Challenge**

One robot scores points
during an autonomous round
with limited human interaction

Typical Competition Cycle

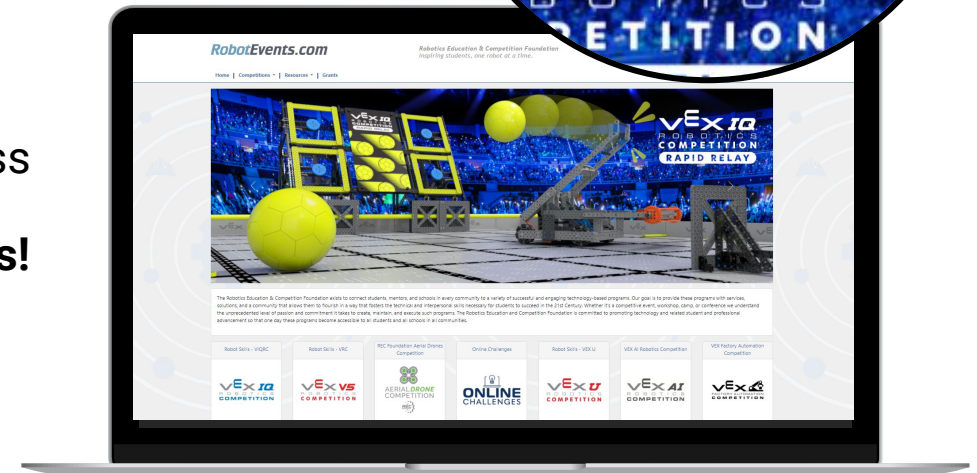


ROBOTEVENTS ACCOUNT

First thing to do as a new Coach: Register for a RobotEvents.com account!

- Go to RobotEvents.com
- Click Register
- Choose your Program
- If your school doesn't pop up, choose "Other"
- Verify your Account by confirming your email address

Now you are ready to begin the Team Registration process!



BACKGROUND CHECKS (US only)

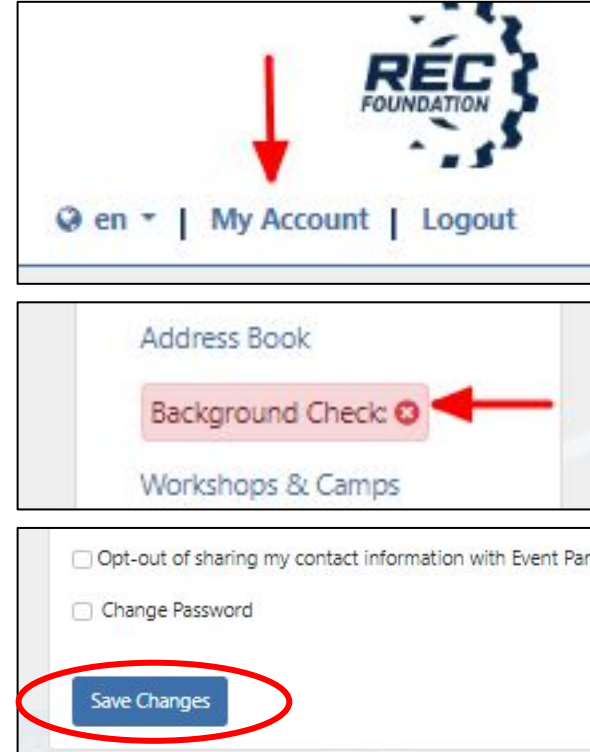
Create a RobotEvents.com account, and log in. Use this same email address throughout the process.

Open the 'My Account' option from the top-right menu in RobotEvents.com

On the left side, click on 'Background Check' in the menu with a red X next to it.

Check all information and confirm that you agree to send it to Sterling. Check the box and click the blue button.

Once saved, you will be taken to the Sterling website with further instructions to complete the background check.



The screenshot shows the top navigation bar of the RobotEvents.com website. The REC FOUNDATION logo is in the top right. Below it, the user is logged in as 'en' with options for 'My Account' and 'Logout'. A red arrow points to the 'My Account' link. Below the navigation bar, the 'Address Book' section is visible, with 'Background Check' highlighted in pink and a red arrow pointing to it. Below this, there are two checkboxes: 'Opt-out of sharing my contact information with Event Part...' and 'Change Password'. At the bottom, a blue 'Save Changes' button is circled in red.



SCAN ME

UPDATING CONTACTS

All Contacts need RobotEvents Accounts

**Primary
Coach**

**Secondary
Coach**

**Financial
Contact**

**Organizational
Administrative
District
Contact**

My Account
Dashboard
Support / Contact Us
Account Information
Address Book
Background Check:
Workshops & Camps
Grant Applications
My Teams

Teams

Team Number: Search Consent Form Submissions

My Teams

Team	Grade	Team Name	Virtual Skills Key	Program	Primary Coach
10511A	ES	Alphabots		VIQRC	Renew Manage Contacts
10511B	ES	Betabots		VIQRC	Renew Manage Contacts



CHANGING PRIMARY COACH

Use the REC Foundation Regional Support Request form

CURRENT COACH LEAVING

Contact your Regional Support Manager (RSM) with this information:

- All currently-associated team numbers needing to be transferred.
- Contact information for the NEW Coach or Administrator
- If program is discontinued - add an administrator at the school as a placeholder.

NEW PRIMARY COACH

Contact your Regional Support Manager (RSM) with this information:

- All known associated team numbers or school/organization name if team number is unknown
- Contact information for the previous Primary Coach, if available
- If previous Primary Coach is not available, include the administrator to confirm changes.



REGISTERING FOR AN EVENT

1. Log into your RobotEvents.com Account
2. Find the event and click on it
3. Check when registrations open
4. Note the payment deadline
5. Click on the arrow - find your team
6. Check box for team attending
7. Click register button
8. Go to your cart
9. Check out!!! **Check out!!!***
10. Select your payment method

2023-2024 PAS-VEX VRC Signature Event (HS/MS)
PASVEX Signature Event 2023 @ HsinChu, Chinese Taipei

Date: 15-Dec-2023 - 17-Dec-2023 [Add to Calendar](#)

Event Code: RE-VRC-23-1546

Program: VEX Robotics Competition

Event Type: Tournament

Event Format: **In-Person**

Field Control System: VEXNet Field Control

Capacity: 64

Spots Open: 31

Event Region: Chinese Taipei

Max Registrations per Organization: 3

Early-Bird Registration Opens: 26-Aug-2023 12:00 EDT

Standard Registration Opens: 9-Sep-2023 12:00 EDT

Registration Deadline: 9-Dec-2023 19:00 EST

Payment Deadline: 23-Sep-2023 00:00 EDT

Price: \$350.00

A maximum of 50% of team registrations can be from any one event region

Region	# Spots Allowed	# Spots Remaining
Texas - Region 1	32	32

Region	Maximum %	# Spots Allowed	# Spots Remaining
Chinese Taipei	50%	32	0

Early-Bird Registration is now open for EP teams and teams who have not yet registered for multiple events this season. All other teams may register starting on 9-Sep-2023 12:00 EDT

Team Number *

[Register](#)

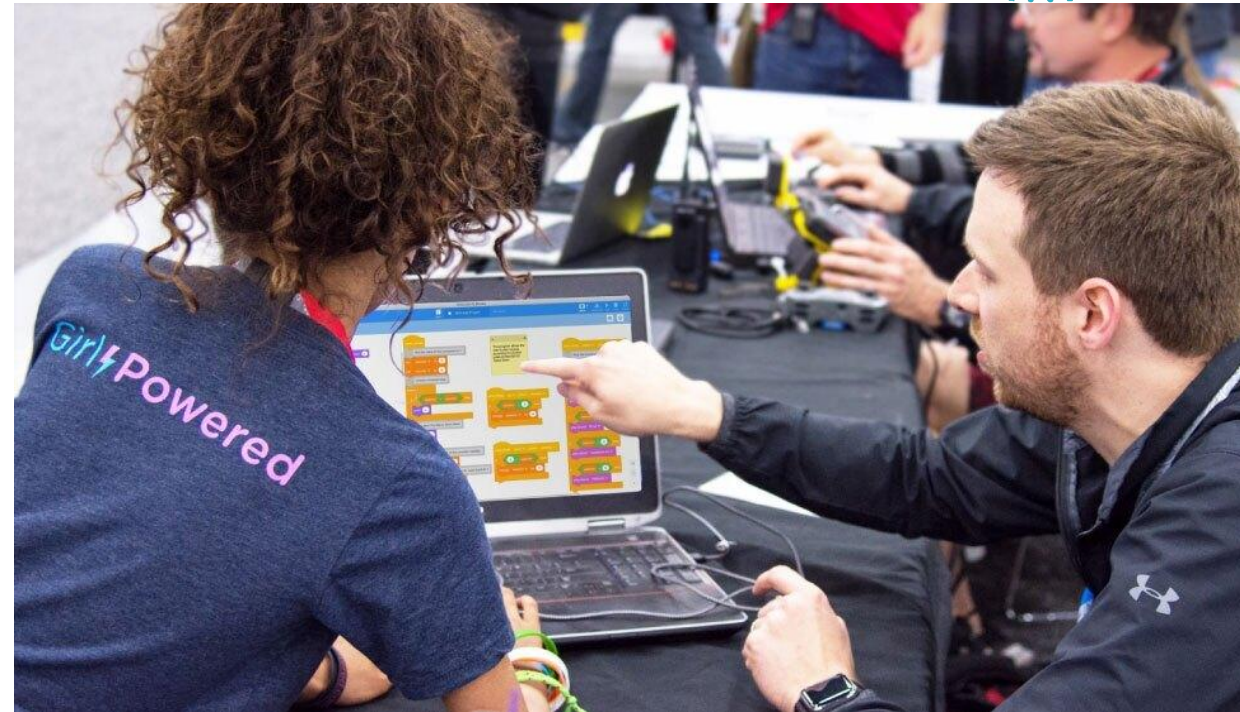
***If you don't CHECK OUT, your registration is not complete!**

Creating A Team | Taking Action

Download VEXcode on Team's Computer

VEXcode allows students to get started coding their own robot quickly and easily. The software is consistent across Blocks, Python, C++ and all VEX Brands. As students progress through elementary, middle, and high school, they never have to re-learn a new coding environment. As a result, students can focus on creating with technology.

- Scaffolded Coding from K - 16
- Blocks, C++ and Python
- Multilingual in blocks and comments
- FREE [VEXRobotics.com>Downloads](https://www.vexrobotics.com/downloads)
- [Computer Science STEM Labs](#) for Learning





CORE PRINCIPLES: STUDENT-CENTERED

Student-Centered Learning

Students are actively involved in learning opportunities to increase their knowledge and skills in the engineering design process, mechanical design, programming and teamwork under the guidance of adult mentorship.

Student-Centered Application

Students have ownership on how their robot is designed, built, programmed, and utilized in match play with other teams and Robot Skills matches.

[Student Centered Policy](#)



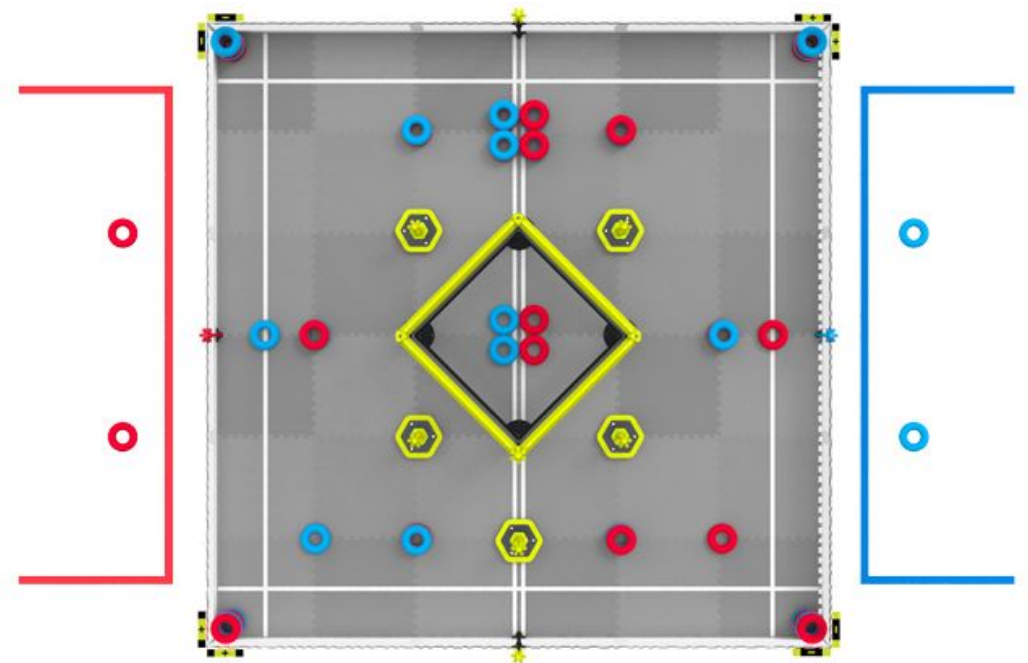
2024-2025 Competition

VEX V5
ROBOTICS
COMPETITION

VEX V5 ROBOTICS COMPETITION

VEX V5 robot represents five generations of education robotics systems developed with 20 years of experience using robotics to teach STEM principles.

The V5 mechanical system includes versatile elements that makes engineering approachable for novice users, while still providing experienced users with endless design possibilities. Students hone critical computational thinking skills needed to succeed in both the 21st century's workforce and in everyday life.





Coaching Basics

Creating A Team | Resources

Engineering Design Process



Helpful hint:
Document it all.



Define

- Scoring
- Game Rules
- Robot Design
- Game Strategy

Optimize

- Mechanisms
- Robot Design
- Game Strategy
- Check the rules

Develop Solutions

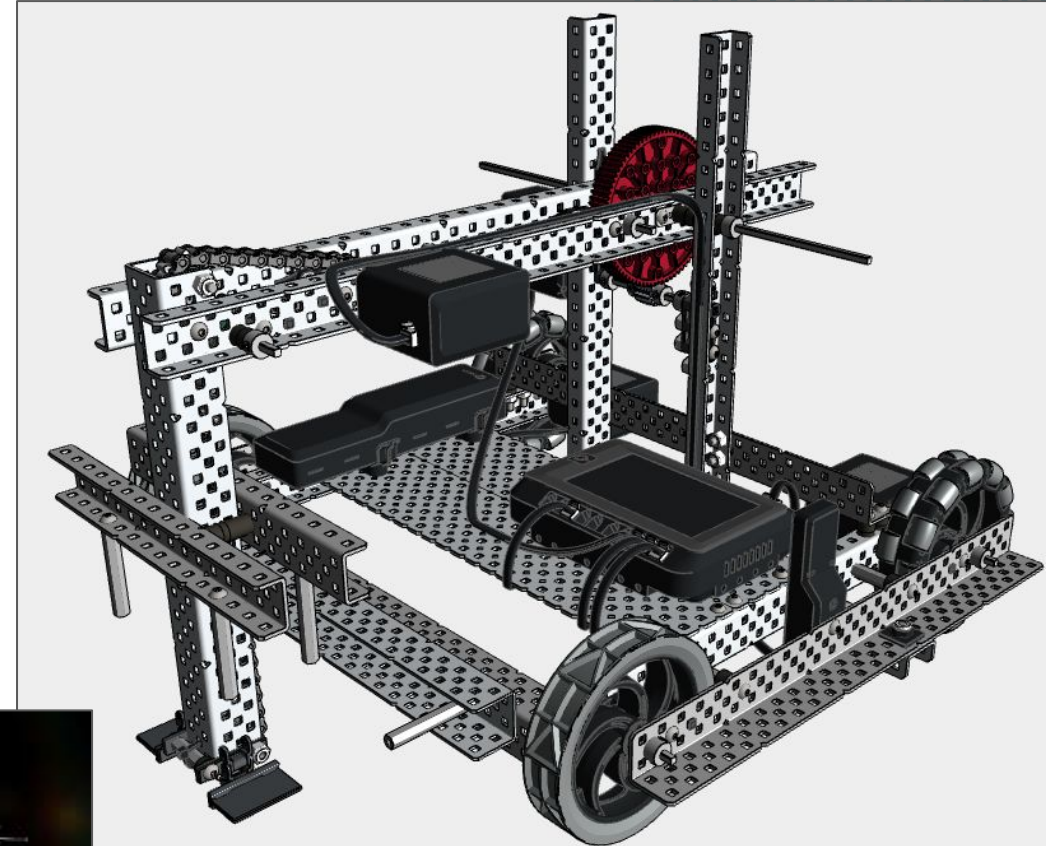
- Test
- Compete
- Evaluate
- Observe

Creating A Team | Preparation

Seasonal Herobot

Created by VEX engineers to minimally address some aspects of the seasonal game challenge

- [Download instructions](#)
- Locate in the [REC Library](#) under Robots
- Quick immersion in robot building and driving
- Intended to be modified to be more competitive
- Allows students to follow the **Design Process** while improving the design
- Competitive robots will not be a strictly standard build



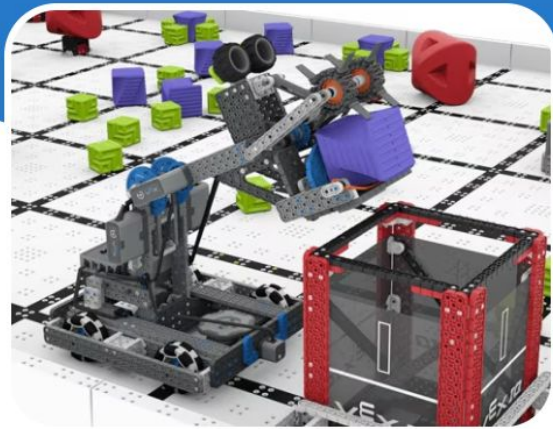
Building Confidence | STEM Labs

Curriculum and Supplemental Learning

- Free STEM labs on vexrobotics.com
- Plug-in lessons to complement existing curriculum
- Use sequentially for extended learning experience
- Find instructions how to build Byte, this year's Hero Bot

Competition

Full Volume



In this Unit, you will build Byte, the HeroBot for the 2023-2024 VIQRC Full Volume game and learn how to score. Throughout the Unit you will learn about driving Byte and how to begin to code Byte for autonomous

Building Confidence | Knowledge

REC Library and VEX Libraries

- All things VEX and REC Foundation
- Quickly find information about products, services, or topics
- FREE support content around multiple topics and themes

REC FOUNDATION

ABOUT ▾ TEAMS ▾ MORE ▾ REC LIBRARY ▾ Q DONATE NEW TO ROBOTICS?

Girl Powered Workshop

NEVER STOP EXPLORING

PRESENTED BY Google REC FOUNDATION

Gear up for the Month of the Girl!
Host a Girl Powered Workshop this October.

REGISTER HERE

New to Robotics?

VEX 123 GO IQ EXP VS PRO TOYS

STEM Labs Certifications Forum Online Help

Contact Us Sign In \$USD Quick Order Cart / Quote

Products ▾ Education ▾ Competition ▾ News Downloads ▾ Sales Get Started Support

New! VEX Professional Development Plus

Supporting Computer Science Remote Learning with **VEX CODE VR**

An easy-to-use platform to help students learn Computer Science with or without a physical robot
Web-based | No Sign-In | Free Curriculum | Teacher Portal

Try Now!

2 MILLION Users Worldwide

VEX 123 Grades Pre-K+

VEX GO Grades 3+

VEX IQ Grades 6+

VEX EXP Grades 9+

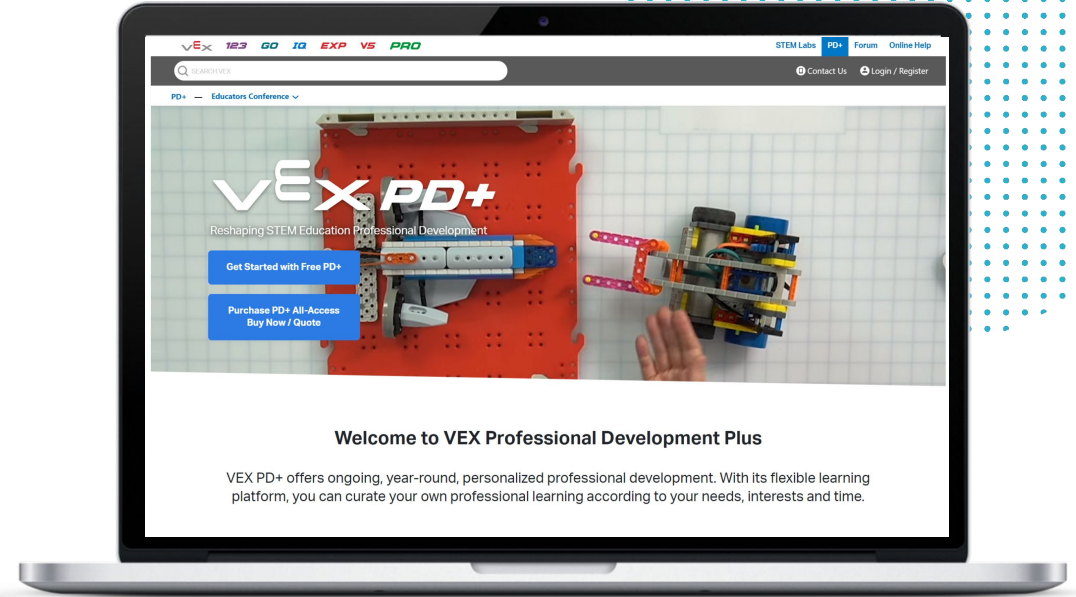
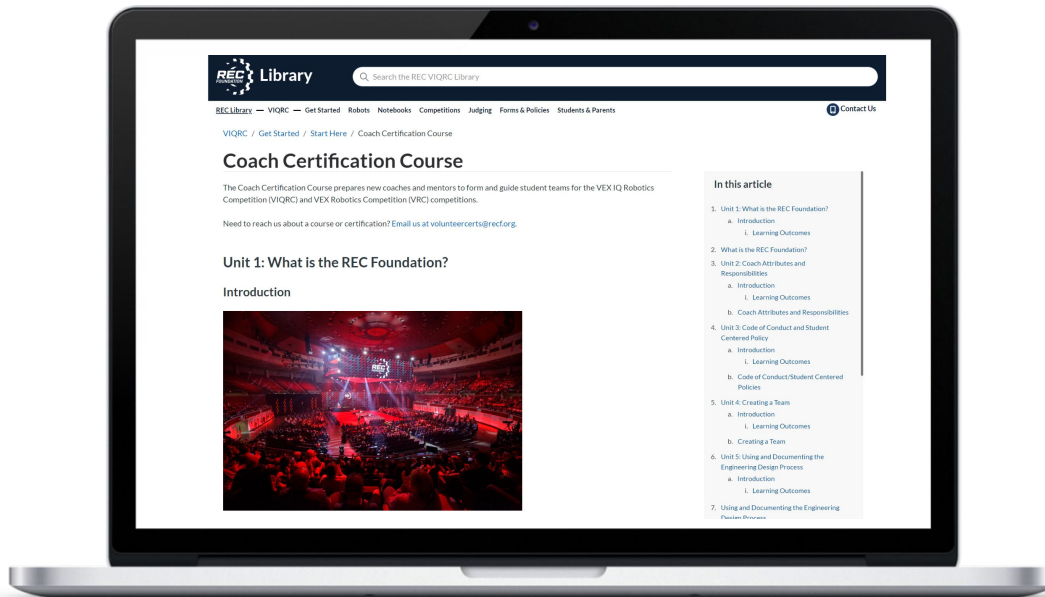
VEX VS Grades 9+



Building Confidence | Coach Certifications

Earn PD Hours

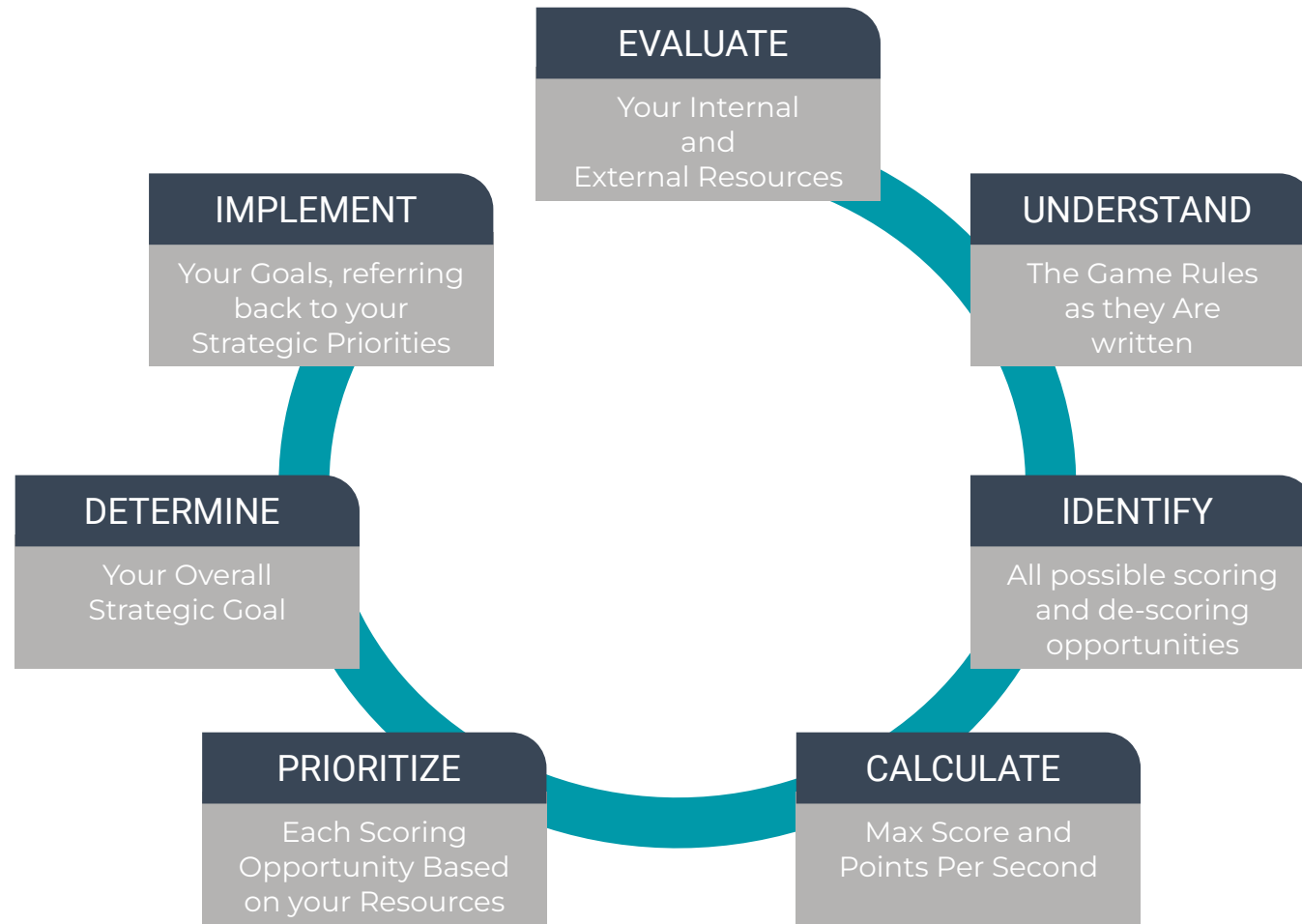
- REC Foundation Coach Certification Course
 - REC Library (kb.recf.org)
- VEX Certified Educator - FREE
 - pd.vex.com





Advanced Coaching

WHAT IS A STRATEGY DICTATED DESIGN?



UNDERSTANDING THE GAME EACH YEAR



What do the rules say?

Read the rules in a logical order and take notes for visual learners

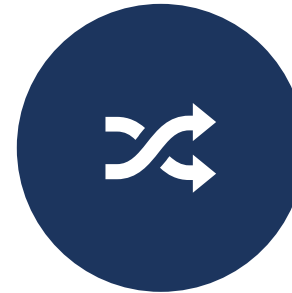
What are you ALLOWED to do?

Some things are EXPLICITLY called out as allowable actions.



What are you PROHIBITED from doing?

Some things are EXPLICITLY called out as prohibited actions.



Strategic Moves & Maneuvers

Game plays are NOT going to be called out - it's up to you to develop them

Maximum Benefit Opportunities

Is there a "flow" that you can achieve to get the most out of each match?



What don't the rules say?

Don't lawyer the rules! But, if it doesn't say you CAN'T, maybe you can?



IDENTIFYING GAME PIECES AND TIMING



Types of Game Pieces

One or multiple types?
Different or same values?
How many of each type?

Access to Game Pieces

What are the starting locations?
Physical access restrictions?
Human-load vs on field?
Are there possession limits?
Can game pieces be reintroduced?

Match Breakdown

Autonomous bonus or Win Point?
End Game bonus or Win Point?
Access time limitations?
Compounding Bonuses?

CALCULATING MAX SCORE AND CONTRIBUTION

Imaginary Game Example with Finite Scoring

Description	Accessed During	Quantity Available	Points per Action	Calculated Max Score	Contribution Percent of Total Max Score	Estimated Seconds per Action	Points Per Second
Movement Bonus	Autonomous	1*	5	5	4%	2	$5 \div 2 = 2.50$
Autonomous Bonus	Autonomous	1	10	10	8%	15	$10 \div 15 = 0.67$
Game Element A Scored	Drive Control	20	1	20	17%	8	$1 \div 8 = 0.13$
Game Element B Scored	Driver Control	2	15	30	25%	20	$15 \div 20 = 0.75$
Zone Possession Bonus	End Game	3	5	15	13%	5	$5 \div 5 = 1.00$
End Game Bonus	End Game	1*	40	40	33%	10	$40 \div 10 = 4.00$
TOTAL PER ROBOT				120			

Autonomous = 15 seconds

Driver Control = 105 seconds

End Game = 15 seconds*



FOCUS ON **WHAT** INSTEAD OF **HOW**

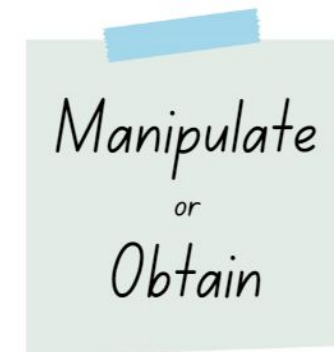
THINK ABOUT...

- What *can* a robot do?
- Words that generically *describe* a mechanism or function
- How to break down each *individual task* into smaller tasks
- What belongs *together*, and what are *stand-alone* tasks

INSTEAD OF:



THINK ABOUT USING:



DETERMINE **YOUR** OVERALL STRATEGIES

STEPS FOR STUDENT-CENTERED SUCCESS:

- Decide ahead of time - digital or physical note-taking
- Designate a Scribe
- Begin leading the discussion to get the ball rolling
- Ask Students Open-Ended questions
- Have *students* populate the notes
- Write everything down, post it, and organize it *later*
- Keep the Students *organized* and *on-task*
- Don't give them the answers!
- If something is missing, *guide* them toward the answer
- *Assist* with "what not how" phrasing



REORGANIZING YOUR PRIORITIES

QUESTIONS TO ASK YOUR TEAM:

- Realistically, what does our time together allow us to build or accomplish?
- How will our budget affect our abilities?
- Do we have access to the physical resources to make/build/program this?
- Do we already have, or can we find people to help?
- Can to work in parallel, or do we need to work in series?



DETERMINING YOUR MATCH PLAY

THINGS TO CONSIDER:

- Are there designated scoring timeframes?
- How many times can you do the action?
- How many of each game piece are there?
- How many of each field element are there?
- What is your travel time?
- Can your efforts be unscored?
- Can you perform more than one action at a time?

YOUR CONTRIBUTION:

- What is the maximum score of each match?
- What percentage of the max points can you score?
- How many points per second are you scoring?
- What is your contingency plan?
- How are you going to coordinate with you Alliance Partners each match?
- Have you calculated your *actual* contribution?



Autonomous

- Action Goal
- Point Goal
- Set up for success

First 45 seconds

- Action Goal
- Point Goal
- Contingency Plan

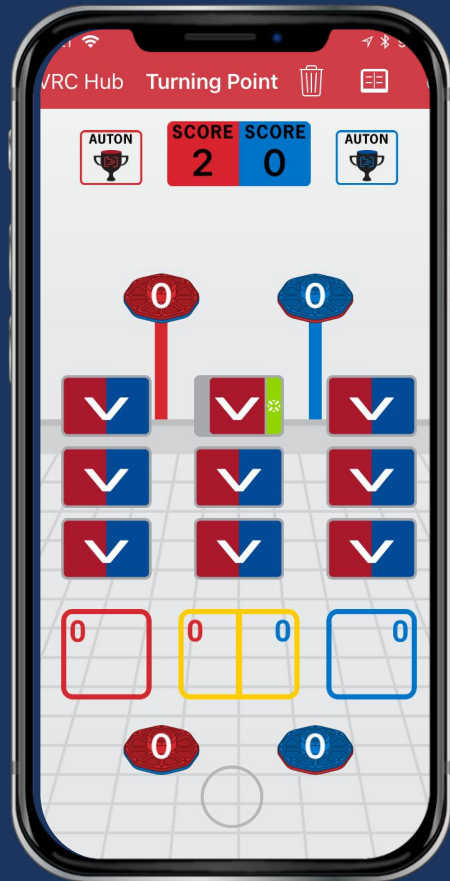
Next 45 seconds

- Action Goal
- Point Goal
- Set up for success

End Game

- Action Goal
- Point Goal
- Contingency Plan

TIPS FOR IMPLEMENTING SUCCESS



ENCOURAGE YOUR STUDENTS TO:

- Read the Game Manual- paying close attention to the red boxes
- Read the Game Manual AGAIN
- Evaluate your Team's resources
- Define Success for each individual and Team
- Check for Game Manual updates
- Read the Game Manual AGAIN
- Set and prioritize their strategic objectives
- Keep the priorities posted in a public place
- Refer back to priorities often
- Iterate, ITERATE, ITERATE!
- **Commit to Continuous Improvement!**



Funding

Grants and Scholarships

Through the generosity of our sponsors, our Team Grant Program matches schools and organizations that are interested in adopting the world's largest and fastest growing academic robotics competitions with the program resources necessary to get started. This unique program allows the REC Foundation to provide the resources needed to inspire the next generation of scientists and engineers.



[Fundraising Resources for VRC Teams](#)

About Team Grants

[Find More Grants](#)

[Terms & Conditions](#)

[Apply for a Grant](#)



THANK YOU FOR ATTENDING

Registration link,
presentations and handouts
are available on the website.

*Remember to register your
attendance for each session.*

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2024



Handouts & More

