

VEX IQ Challenge - Nelson Team Grants

Frequently Asked Questions

1. How big is a team?

The minimum team size is 2 students. There is no maximum team size, but most teams have 2-12 students. The optimum team size for a new coach with a new team is 3-6 students. The coach and students of a small new team can have fun learning how to design, build, document, and drive the robot. A team with 6-12 students can also learn how to program the robot and/or work on a STEM Research Project or Online Challenges. Supervising these extra activities with a new team would make the new coach's job more challenging. The coach's job is less challenging if some of the students are high functioning. Teams that start in the Spring can start small in the Spring and then add more students and more activities in the Fall. After the first year, the optimum team size is 6-12 students. Teams of this size should be able to participate in all aspects of the program.

2. Should teams do a STEM Research Project?

This year, the STEM Research Project and Presentation changed to an optional video submission to be turned in prior the final league session or tournament. It is no longer a requirement for the Excellence Award, but judges will consider STEM Research as part of the overall team assessment. The STEM Research Project Award is optional at local events, but it will be offered at State and World Championships.

I recommend that small teams skip STEM Research their first year. STEM Research is optional for large teams and for experienced teams. Most LAUSD Leagues will not offer the STEM Research Project Award.

However, LeRoy and Anita Nelson will provide unofficial judging for STEM Research Project and Presentation videos submitted by LAUSD teams that participate in leagues that do not offer the STEM Research Project Award. Anita has been a STEM Research Project Award Judge at State and World Championships. Submissions will be due by the last day of classes in December. Depending on the number of submissions, separate awards may be offered for Elementary/Secondary and for Rookie/Experienced teams. The LAUSD STEM Research Project Awards would be presented at the final league session in January in addition to the League awards.

3. Is there a separate competition team and STEM Research Project team?

That will vary based on team size and student preferences. Small teams that want to do the project could spend part of a team meeting working together on the robot and part working on the project. For large teams, it makes sense to divide the students into robot and project sub-teams for each team meeting. Students should be encouraged to work on different sub-teams at different meetings, though. Working on the robot gives students experience doing engineering. Working on the project gives students experience doing science. Ideally, every student should do both by the second year.

4. Can teams upload STEM Research Project videos to SchoolTube instead of YouTube?

Yes. School-based teams are welcome to upload their STEM Research Project videos to [SchoolTube.com](https://www.schooltube.com) instead of [YouTube.com](https://www.youtube.com).

Key advantages of SchoolTube over YouTube:

- **Free** accounts are supported by school and age-appropriate advertisements and sponsors. Ad-free service coming soon.
- SchoolTube is fully moderated. Only videos approved by verified educators are allowed to be uploaded and shared.
- All student-created videos are hosted under SchoolTube and protected by our ASCAP blanket music licensing policy.
- Enjoy knowing that your students' and their videos are protected by a COPPA compliant video sharing **platform**.

To learn **How To Upload Videos to SchoolTube**, [view this video](#).

A SchoolTube video needs to be **Public** to share the link for judging.

5. Are all members of the competition team competing at the same time together or split up?

Two drivers participate in each teamwork or skills match. You can have different drivers in different matches. Each team should have three or four Teamwork Matches at each qualifying session and three or four Robot Skills Matches at the final session. Team members who are not driving can cheer for their team.

6. What if my team has more students than we can bring to a competition?

You could have different students participate in each qualifying session and then have the students who contributed the most and/or who drove the best represent the team in the skills matches and/or finals matches at the championship session.

7. What student grade levels can participate on teams?

VEX IQ Challenge is recommended for students in grades 4-8 and high functioning students in grade 3 (in the Fall semester). The VEX IQ robot is recommended for students of ages 8 and up.

8. What determines whether a team is Elementary or Middle School?

VEX IQ Challenge teams can have students with a mix of grade levels. Elementary school teams have students in grades 5 and below at the end of the season (grade 6 and below in a school which includes grade 5 but not grade 7). Middle school teams have students age 13 or lower or in grades 8 and below at the end of the season (grade 9 and below in a school or district which includes grade 8 but not grade 10). The highest grade level of a student on a team determines the division of the team. For teams starting in the spring, students should be one grade level lower so that they can continue as team members in the fall.

9. How does a League work?

New leagues will begin with an orientation session for new coaches in late August or early September. Teams will typically participate in five league sessions held every 2-4 school weeks between September and January. League sessions are usually held after school at locations reasonably close to participating schools. The first four sessions will be Qualifying Sessions, and the final session will be the Championship Session. For new leagues with mostly rookie teams, the first Qualifying Session will begin with one Teamwork Practice Match for each team followed by two or three Teamwork Qualifying Matches for each team. Other Qualifying Sessions will offer three or four Teamwork Qualifying Matches for each team. The final Championship Session will offer Robot Design judging for teams that submit good Engineering Notebooks and three or four Robot Skills Matches followed by Teamwork Final Matches and Awards. Participating teams must pay a league registration fee to the league host, typically \$100 for all league sessions, which covers the cost of equipment and facilities and which may help pay the registration fees of teams that qualify to attend the State Championships in late February or Early March.

10. What is the schedule for League sessions?

Typical agenda for the first four league sessions, the Qualifying Sessions:

3:00-4:00 PM Doors open. Set up
3:45-4:00 PM Volunteers check in
4:00-4:30 PM Teams check in
4:00-4:45 PM Robot Inspection
4:45-5:00 PM Opening Ceremony/Announcements
5:00-7:00 PM Teamwork Practice and Qualifying Matches
7:00-7:30 PM Tear down. Teams depart. Doors close

Typical agenda for the last league session, the Championship Session:

3:00-4:00 PM Doors open. Set up
3:45-4:00 PM Volunteers check in
4:00-4:30 PM Teams check in and turn in Engineering Notebooks
4:00-4:45 PM Robot Inspection
4:45-5:00 PM Opening Ceremony/Announcements
5:00-7:00 PM Judging and Skills Matches
7:00-7:45 PM Teamwork Finals Matches and Awards
7:45-8:15 PM Tear down. Teams depart. Doors close

11. Does my team need to attend every League session?

No. Teams need to participate in at least 60% of the Teamwork Qualifying Matches to be eligible to participate in the Teamwork Finals Matches. If it is not convenient for your team to participate in a league, your team can participate in one or more tournaments instead. Tournaments are typically held on Saturdays between October and mid-February. The event registration fee for each tournament is typically \$75-\$100.

12. How big is a League?

Leagues need at least 16 teams for the top award winners to qualify for the State Championship. Leagues with more than 31 teams will be split into two smaller leagues to make match schedules easier to manage. Leagues should provide two competition fields and two practice fields for up to 24 teams and three competition fields and three practice fields for up to 36 teams. That will allow each team to play up to four matches at each league session. LeRoy will provide fields with assembled field elements for all new leagues.

13. My school received a Team Welcome Kit. How should we use it?

The VEX IQ Challenge Team Welcome Kit ships in a small box that should arrive approximately one week after your team registration is paid. It includes several pages of useful information plus these important items:

- a. **Two VEX IQ Challenge Blank Team Number Plates.** Put your team number on both plates and attach them to opposite sides of your robot before you attend leagues or tournaments. Your robot needs these to pass inspection.
- b. **VEX IQ Engineering Notebook (5 Pack).** Have students record their progress designing, building and programming their robot. The notebooks include sample entries and suggestions. See the **Robot Design Rubric** for the criteria that will be used to judge the Engineering Notebook at the final league session or tournament.
- c. **VEX IQ Challenge Game Element Kit** (sample game elements). Your team can use these to practice driving the robot until you receive and open the game kit.

14. My school received three VEX IQ robotics kits. How should we use them?

Each school should receive one VEX IQ robot set consisting of:

- a. **Super Kit** (big box with robot set and bin with tray for organizing parts). This kit was shipped early to teams in LAUSD Local Districts Central, East and West that submitted applications before May.
- b. **Competition Add-On Kit** (small box with extra parts)
- c. **Foundation Add-On Kit** (big box with more extra parts and second bin with tray for organizing parts).

One of the first things your team should do is open all three kits and sort the small parts into the two trays so that they are easy to find when you are building robots. The big parts can go in the bottoms of the two bins.

Charge the robot battery and the controller battery. Instructions are near the back of the **VEX IQ Super Kit User Guide**. The robot battery should be charged after every team meeting and after every league session or tournament. The controller battery usually lasts several weeks between charges. Buying an extra robot battery and keeping it charged is recommended in case you ever forget to recharge the robot battery. A dead robot battery can ruin your day. Batteries need to be recharged every 4-6 months when they are not in use, so **recharge batteries before summer vacation**. Leaving the robot battery in your robot or in the charger when the charger is not plugged can kill your robot battery.

Next, the team can build and drive the **Clawbot**, which could be used to play the teamwork challenge game at your first league qualifying session. Step-by-step Clawbot build instructions are included in the **VEX IQ Super Kit User Guide**. An electronic copy of the build instructions as well as animated build instructions for Clawbot IQ are available at www.vexrobotics.com/vexiq/resources/robot-builds.

For the **NEXT LEVEL** game, the **Flex** robot is a better starting robot than Clawbot. The Flex build instructions are also available at www.vexrobotics.com/vexiq/resources/robot-builds.

Start recording team progress in the Engineering Notebook. Watch the VEX IQ Challenge game video at www.roboticseducation.org/competition-teams/current-game-information/. Watch the VEX IQ Challenge Overview video and read the Game Manual at www.roboticseducation.org/competition-teams/vex-iq-challenge/. Choose a strategy to score as many points as possible in a 60-second match. Choose a team name and robot name and update your team information at www.robotevents.com. Modify the robot or your strategy as needed to improve performance. Practice driving before each competition.

15. My school received three other boxes. How should we use them?

Each school should also receive these VEX IQ Challenge competition supplies:

- a. VEX IQ Challenge Full Field Perimeter & Tiles (ships in two boxes, each containing one-half field). It takes a few minutes to assemble or disassemble the field. Be careful not to twist the tiles relative to each other when disassembling the field, because the tabs can break off. Push one tile or wall piece down while pushing the adjacent tiles up to separate them.
- b. VEX IQ Challenge Full Field & Game Element Kit. This box contains the field elements and game elements for this year's VEX IQ Challenge game. Some assembly is required. The NEXT LEVEL field elements are easier to assemble than usual. Expect to spend 1-2 hours building the field elements. Set up the field elements and game elements on the full field to develop and test your game strategy and to practice driving the robot before competitions.

16. How do I access the programming software?

My recommendation changed. For Chromebook, iPad, Mac, Windows, or Ubuntu Linux computers, I now recommend using **Blockly** with **Robot Mesh Studio**. The free online version is available at www.robotmesh.com/studio. The Chrome browser works best on Windows. You need to create an account on RobotMesh.com so that your team can store its programs as projects. You can organize team programs in folders. Your programs will be available on any of the computers listed above after you log in. Skip the API documentation. Start with the **Blockly Activity Guide**, which can be used as an online robot programming curriculum. If you decide to use **Blockly** in the classroom, you will want to purchase a Robot Mesh Studio class or site license at www.robotmesh.com/studio-editions.

17. How can I view the match scores and rankings for my team?

During most league sessions, match scores are uploaded to the league event on RobotEvents.com and cumulative rankings are updated after each match. After all league sessions, final results and cumulative rankings are uploaded to the league event on RobotEvents.com. After the final session, skills rankings, teamwork finals results, and awards are also uploaded to the league event on RobotEvents.com. Navigate to a league event on RobotEvents.com by name or by using one of these links:

- [LAUSD Central VEX IQ League at Garvanza Elementary Technology & Leadership Magnet](#)
- [LAUSD Central VEX IQ League at Barack Obama Global Preparation Academy](#)
- [LAUSD East VEX IQ League at Elizabeth Learning Center](#)
- [LAUSD East VEX IQ League at Belvedere Middle School](#)
- [LAUSD NW VEX IQ Elementary League at Mulholland MS](#)
- [LAUSD NW VEX IQ Middle School League at Mulholland MS](#)
- [LAUSD South VEX IQ League at Samuel Gompers Middle School](#)
- [LAUSD West VEX IQ League at Augustus Hawkins High School](#)
- [LAUSD West VEX IQ League at Mark Twain Middle School](#)

After you find your event, click on **Results** and then **Division 1** to see **Match Results** for the most recent session and cumulative **Teamwork Rankings**.

You can also view the team list, team match schedule, team match results, event match schedule, event match results, cumulative rankings, skills results, skills rankings, and awards by downloading the **VEX VIA** app to an Android or Apple smartphone from:

- [VEX Via - Apps on Google Play](#) or
- [VEX Via on the App Store - iTunes - Apple](#)

The Apple version allows you to search for events by name or city and for teams by number, team name or city. Or find events by selecting Nearby Events and then scanning the list for your event by the start date (date of first session). After you find your event or team, click on the star at the top of the screen to add it to the Favorites list for quick access later.

18. Are there any other Apps for VEX IQ Challenge teams?

Download the **VIQC Hub** app to view or search the latest version of the Game Manual, a score calculator, and a match timer:

- [VIQC Hub - Apps on Google Play](#) or
- [VIQC Hub on the App Store - iTunes - Apple](#)

19. What should I do if the robot battery won't charge?

When you place the robot battery in the robot battery charger and plug it in with the power cord to recharge the battery, the charger LED should start as solid red and change to solid green when the battery is fully charged. If the charger light flashes red, the battery voltage is too low for the charger to recharge it. Try the procedure in the following video to restore the battery: [How to fix VEX IQ Flashing Light or No Charge Battery Issue](#)

If the robot charger LED still flashes red, the robot battery needs to be replaced.

20. What should I do if I need VEX IQ Technical Support?

You can email your technical support question to iDESIGN Solutions at support@idesignsol.com or contact support via the iDESIGN Solutions website www.idesignsol.com (at the top of the page Contact Us / Technical Support). A support team member will respond shortly. iDESIGN Solutions will also handle replacement of any defective VEX warranted parts. There is no cost to you for these support services.

21. Can I change the team name or other team information?

Yes, you can make changes to your registered team information whenever you want:

- Log into RobotEvents.com. If you do not see your team, click on **My Account**.
- Click on the **Edit** button to the right of your team.
- Edit any of the team information fields.
- Scroll to the bottom of the screen and click on the **Save** button.

22. Can I change team contacts?

Yes, you can make changes to team contacts in two ways:

- a. You can change the Primary Contact, Secondary Contact, or Financial Contact by using the procedure above to edit team information.
- b. You can also add, remove, or change team contacts by using this procedure:
 - Log into RobotEvents.com. If you do not see your team, click on **My Account**.
 - Click on **My Teams** on the left side of your screen.
 - Click on the **Manage Contacts** button to the right of your team.
 - Click on the **+ Add Participant** button at the bottom of the screen to add a new contact.
 - Click on a **Remove** button at the bottom right of the screen to remove a contact.
 - Click on the Primary Contact, Financial Contact or Secondary Contact fields at the top of the screen to select a different contact from the drop-down list.
 - Click on the **Save** button.

If you add a new team contact, the system will send an invitation to the new contact to join your team. The new contact will not receive access to your team information until the invitation is accepted and the new contact creates an account on RobotEvents.com.

23. Can my school add additional robotics teams so more students can participate?

Yes. Schools can have up to 26 teams with the same base team number and different suffix letters. Team registration for the first team costs \$150 each year (covered by the grant the first year), and each additional team costs \$100 each year. Each team also needs to pay for league or tournament event registration each year, which is typically \$100 per team. Each additional team should start with its own VEX IQ Super Kit (\$330) and VEX IQ Competition Add-on Kit (\$100). One field can be shared by 2-3 teams.

24. How can my school purchase additional kits or parts?

Robot kits and parts can be ordered from any of three vendors:

- a. [iDESIGN Solutions](#) – Supports our leagues, best support for school and district orders. For personal assistance, contact Steven Gutterman (steven@idesignsol.com).
- b. [Robot Mesh](#) – Fastest delivery for items in stock. Offers **Blockly** with **Robot Mesh Studio**.
- c. [VEX Robotics](#) – The manufacturer; higher shipping charges.

25. Are any funds available for additional teams or robot equipment?

If your robotics team needs financial assistance, your coach and/or robotics team could try these websites, which other teams have used to raise funds:

- a. [DonorsChoose](#). Teachers should include “STEM” in the project title, because technology companies have occasionally funded all STEM projects in California.
- b. [HEXBUG](#)
- c. [EdCo](#)
- d. [piggybackr](#)

26. What is the procedure for parts that are broken and/or lost?

The school is responsible for replacing broken and/or lost parts. LeRoy Nelson and/or Steven Gutterman usually have spare brains, batteries, and motors available at league sessions for new leagues to debug and/or replace parts that are not working.

27. Does the Kit need to be solely used for students that will be competing?

No. During the VEX IQ league season (August-January), the students on the school’s VEX IQ Challenge team should have primary use of the robot kits, but parts can be shared with other teams. The kits can be used for other purposes outside of the league season.

28. What if I have a question that is not answered here?

Contact LeRoy Nelson via email at LeRoy@LARobotics.org or call him any day between 9 AM and 9 PM at 310-529-4637.

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