

# Q&A

## VEX V5 Robotics Competition 2024-2025: High Stakes

Tagged: G2

Welcome to the official VEX V5 Robotics Competition Question & Answer system, where all registered teams have the opportunity to ask for official rules interpretations and clarifications. This Q&A system is the only source for official V5RC High Stakes rules clarifications, and the clarifications made here from the Game Design Committee (GDC) are considered as official and binding as the written [Game Manual](#) itself.

**Please review the [Q&A Usage Guidelines](#) before posting.** This system is only intended for specific V5RC High Stakes rules questions.

- For event, registration, or other competition support questions, please contact your [REC Foundation Regional Support Manager](#).
  - For VEX technical support, contact [support@vex.com](mailto:support@vex.com) or [sales@vex.com](mailto:sales@vex.com).
- For game questions, suggestions, or concerns outside of specific and official rules questions, contact [GDC@vex.com](mailto:GDC@vex.com).

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## 552: Coach Interaction During Match

15-Feb-2020

G2 R12

During a elementary IQ finals match at a tournament I was at, a team's battery went down. An adult coach proceeded to throw the team a fresh battery, in the middle of the match. Is this an illegal action in any way? Mainly referring to rules R12 or G2?

### Answered by committee

First, this would not be considered an R12 violation. R12 is intended to prevent Teams from using additional Robot Batteries as counterweights or finding ways to double their available power. As noted in [this Q&A](#), swapping out a battery mid-Match is not illegal, provided that it is done under a legal G17 / RSC5 interaction.

G2 is quoted below, with a portion bolded for emphasis:

<G2> VEX IQ is a student-centered program. **Adults may assist Students in urgent situations, but adults should never work on or program a Robot without Students on that Team being present and actively participating.** Students should be prepared to demonstrate an active understanding of their Robot's construction and programming to judges or event staff.

Some amount of adult mentorship, teaching, and/or guidance is an expected and encouraged facet of the VEX IQ Challenge. No one is born an expert in robotics! However, obstacles should always be viewed as teaching opportunities, not tasks for an adult to solve without Students present and actively participating. Violation of this rule could be considered a violation of <G1> and/or the REC Foundation Code of Conduct.

In the specific scenario that you have described, this would likely be considered an "urgent situation", especially because the Students were the ones who identified the root cause of the problem and physically changed the battery ("worked on the the Robot") mid-Match.

Therefore, the act of a Team receiving a spare battery mid-Match is not illegal in itself.

With that being said, we definitely do not want adults to get into the habit of throwing batteries at Students! This could be deemed an S1, G1, G2, or Code of Conduct violation, depending on the manner in which it is handled in the context of the event. It would be impossible for us to provide a blanket response that would encompass all possible hypothetical interactions.

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## 342: Student Definition

31-Aug-2019

G2

I was wondering about the legality of gap year participants. They have already graduated but aren't taking any university classes which doesn't allow them to compete in VexU. I was just wondering if they took a class to get a GED would that qualify as working up to the equivalent of a high school diploma? Or since they had already gotten their high school diploma, they can never meet the student definition?

### Answered by committee

The definition of "Student" in the VRC Game Manual is as follows:

Student - A person is considered a Student if he or she meets both of the following criteria:

1. Anyone who is earning or has earned credit toward a high school diploma/certificate or its equivalent during the six (6) months preceding the VEX Robotics World Championship. Courses earning credits leading up to high school would satisfy this requirement.
2. Anyone born after May 1, 2000 (i.e. who will be 19 or younger at VEX Worlds 2020). Eligibility may also be granted based on a disability that has delayed education by at least one year.

We will assume that the hypothetical individual in question satisfies criteria 2.

Although the definition does not explicitly include the words "provided that the student has not already achieved a high school diploma", this is supposed to be implied.

The intent of the "earning credit toward a high school diploma" verbiage in criteria 1 is to permit eligibility for both traditional and non-traditional students. This could mean those attending homeschool, who are enrolled in remote learning programs, or who are otherwise unable to participate within a "standard" school system.

To be clear: Graduating from high school, and then re-enrolling in high-school-equivalent courses for the sole purpose of competing in VRC is not within the intent of the rules, and this student would not be considered eligible to compete as a High School Student.

Now, because the question is being asked by a VEX U team, and we have established above that this hypothetical individual is not eligible for VRC HS, we should also look at VEX U rule VUG6:

<VUG6> Each Robot is allowed up to three (3) Drive Team Members, as stated in <G6>.

- a. Drive Team Members MUST be post-secondary school individuals. Any matriculated individual enrolled in post-secondary school is eligible to be a Drive Team Member.
- b. Professionals not enrolled in post-secondary education are not eligible to be Drive Team Members or participate on a VEX U Team.
- c. Students that are dual-enrolled in both a secondary school and in post-secondary courses are not eligible to be Drive Team Members or participate on a VEX U Team.

As you noted, a GED in the US is typically considered equivalent to a secondary school diploma, not post-secondary school. Therefore, an individual pursuing a GED would not be considered "matriculated" or "enrolled in post-secondary education". Therefore, they would not be eligible to participate on a VEX U team.

The VEX Robotics Competition is intended to be an educational competition for students enrolled in educational institutions. For an individual who is not enrolled in formal education but still wishes to participate, we would advise mentoring a VRC team or volunteering at local events until they become eligible again.

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## 2584: G2 (Student Centered), G4/R2, and Custom Cut Plastic – Levels of Assistance

27-Feb-2025

G2 G4 R2 R19

G2 states that adults "should not provide an unfair advantage by providing 'help' that is beyond the Students' independent abilities." Given the student's developmental level, access to tools and safety concerns around tool usage, at times it may be challenging for a student to independently do some tasks. At a recent competition, the level of outside assistance allowable came up for question about custom cut plastic. Specifically:

If the students design their own CAD files for custom cut plastic, is it a violation of G2 for the coach or mentor to run the CNC machine and/or laser cutter to cut the material for the students, or do the students need to operate the machine themselves?

Is it a violation of G2 if the mentor/coach makes slight modifications to the file so that the tool works correctly (for example removing duplicate lines or changing the order of the cuts to put less strain on the machine)?

If students at school A develop their own CAD files for custom cut plastic but do not have access to a laser cutters and/or CNC machine, is it a violation of G4/R2 to send the file to school B to have it cut for them?

If students at school A develop their own CAD files for custom cut plastic but do not have access to laser cutters and/or CNC machine, is it a violation of G2/G4/R2 to send their CAD files to an outside commercial service to have the plastic cut for them?

I suppose the same issues would be raised for cutting metal as well.

Relevant rules and Q&As: G2: **V5RC is a student-centered program.** Adults should not make decisions about the Robot's build, design, or gameplay, and should not provide an unfair advantage by providing 'help' that is beyond the Students' independent abilities. G4: **The Robot must represent the skill level of the Team.** R2: **Robots must represent the Team's skill level.** The Robot must be designed, built, and programmed by members of the Team. R19: **A limited amount of custom plastic is allowed.** Robots may use custom-made parts cut from certain types of non-shattering plastic. c. Plastic may be mechanically altered by cutting, drilling, bending, etc. It cannot be

Thank you!

### Answered by committee

All of the scenarios you describe would be [<G2>](#) Violations. Adults should not provide an unfair advantage by providing 'help' that is beyond the Students' independent abilities.

In the case of a Team that lacks the necessary tools to create legal Student-designed parts, it would be legal for the Student designers to use another organization's tools to create the parts themselves using those borrowed tools.

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## 242: Legality of "coaching" from the stands/audience by team members and adults

13-Feb-2019

G1 G2 G3

I have a question regarding the legality of students or adults calling out from the stands/audience to drivers during a match. By far the two most common examples I have seen of this are:

- Someone periodically calling out the remaining time in the match, particularly if the students on the drive team are unable to see a match timer.
- Someone calling out "Get the yellow hub" or "Go hang" near the end of the match.

I have never seen this done in a disrespectful way so assume for this question that nothing is being said in a derogatory or offensive manner.

I have been told *"All Drive team members are in Drivers stations and are students. There are NO coaches - Thus the coaching from any location is illegal."* and that teams could be disqualified because of this. The reasoning for this was based on their interpretation of the following from the game manual and Code of Conduct:

G1 In all aspects of the VEX IQ Challenge program, the Students make the decisions and do the work with adult mentorship. Code of Conduct: • Student-centered teams with limited adult assistance.

G3 When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Challenge.

Nothing in the above would apply to students "coaching." Also, "adult mentorship" and "limited adult assistance" could be interpreted to allow adult "coaching" during a match.

So, I have two specific questions.

1. Are students in the stands/audience allowed to call out time or things like "Go hang"?
2. Are adults in the stands/audience allowed to call out time or things like "Go hang"?

For completeness here are rules G1, G2, and G3 in their entirety.

G1 Treat everyone with respect. All Students and adults associated with a Team are expected to conduct themselves in a respectful and positive manner while participating in the VEX IQ Challenge. If Team members are disrespectful or uncivil to staff, volunteers, or fellow teams at an event, the team may be Disqualified from their current or upcoming Match. Judges may also consider team conduct and ethics when determining awards.

In all aspects of the VEX IQ Challenge program, the Students make the decisions and do the work with adult mentorship. The VEX community prides itself on being a positive learning environment where no one is bullied, harassed, or berated. Teams avoid placing unnecessary stress upon students and/or event volunteers; instead, challenging situations are viewed as teachable moments to model positive behaviors and good sportsmanship.

This rule exists alongside the REC Foundation Code of Conduct. Violation of the Code of Conduct can be considered a violation of <G1> and can result in Disqualification from a current Match, an upcoming Match, an entire event, or (in extreme cases) an entire competition season. The Code of Conduct can be found at [http://link.roboticseducation.org/recf\\_codeofconduct](http://link.roboticseducation.org/recf_codeofconduct).

G2 VEX IQ is a student-centered program. Adults may assist Students in urgent situations, but adults should never work on or program a Robot without Students on that Team being present and actively participating.

> Some amount of adult mentorship, teaching, and/or guidance is an expected and encouraged facet of the VEX IQ Challenge. No one is born an expert in robotics! However, obstacles should always be viewed as teaching opportunities, not tasks for an adult to solve without Students present and actively participating. >  
> When a mechanism falls off, it is... > ...okay for an adult to help a Student investigate why it failed, so it can be improved. > ...not okay for an adult to put the robot back together. > > When a team encounters a complex programming concept, it is...> > ...okay for an adult to guide a Student through a flowchart to understand its logic. > ...not okay for an adult to write a pre-made command for that Student to reference.

G3 Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Challenge.

### Answered by committee

There is no one-size-fits-all blanket answer for this topic. In general, infrequent comments from the stands in the spirit of cheering on the students are aligned with the student-centered policy of the Game Design Committee and the REC Foundation.

Cheering from the stands, especially for a key end-of-match moment, is an exciting part of the VEX IQ Challenge's intensity; there is no positive learning experience to be gained by penalizing Student Drivers for receiving encouragement from their excited fans.

Similarly, calling out the amount of time remaining in a Match is a common practice for many play-by-play announcers, and is even included in the [relevant Referee Training video](#) as a suggestion to help with the 30-second Driver switch.

However - frequent, direct, and specific coaching instructions ("turn left, now pick up the Hub, now turn right, now go score") would not be within the spirit of the various student-centered guidelines in the Game Manual, Code of Conduct, Judges Guide, etc.

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## 2386: Is a student allowed to be on a VRC and IQ team at the same time?

12-Dec-2024

G2

Recently, we have heard some that a student (or students) cannot be on a VRC (Vex robotics competition, aka "metal robotics") and IQ (VIQRC, aka "plastic robotics") team at the same time. There seems to be nothing in the game manual preventing this (and would therefore be legal), and we believed that this has already been clarified in a Q and A in a **previous season**. However, we want to clarify if this it is **still the intent for the GDC to allow students to be both a**

part of a VRC team and VIQRC team as long as they suffice the definition of a student (under 15 years of age by vex worlds, etc.), and is it officially legal to do this? (G2 is tagged, as the question pertains to whether or not a student in metal is considered a legal student but the definitions section cannot be tagged and a tag must be added)  
Thanks in advance! -282S

### Answered by committee

The rules for VIQRC and V5RC teams do not prohibit a Student from participating in both competitions.

Students (especially Drive Team Members) on both VIQRC and V5RC Teams that are competing at the same event should be expected to choose which Team they are competing with for the duration of that event. "Our driver is in a VIQRC Match" would not be considered an acceptable justification for being late to a V5RC Match (or vice-versa).

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## 2233: Audience Participation in Rapid Relay

28-Oct-2024

G2

<G2> During Driving matches (skills and teamwork) can the audience G2 states "During Match play, it is...

Okay for an Adult to provide cheerful, positive encouragement as a spectator. Not okay for an Adult to explicitly shout step-by-step commands from the audience."

1. Would it be allowed for the audience to shout "15 Seconds?" during teamwork matches. A. Seems to be the same as counting down the last 5 seconds, which is common.
2. If that is okay, would it be okay to shout "Rapid Load" at 15 seconds? Or is that more specific than simply stating the time?
3. And if the audience shouting "Rapid Load" is okay at 15 seconds, would it be okay for them to do that at the driver switch during a teamwork match.

I am specifically referring to the audience as a whole, not for a coach to do this and only when their team is driving. It's more of a way to engage the audience and have it still be uniform.

### Answered by committee

All of these would qualify as coaching from the stands, and would be considered Violations of rule <G2>.

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## 1693: powder coat paint on a robot

13-Oct-2023

G2

I have a question that I am hopeful you will be able to provide guidance on. We have a high school team in our program that has designed, built and programmed the robot in the attached picture. They have done a great job with it and really put a lot of effort into it. Here is where my questions come in. The students thought that it would be cool to paint the robot and they investigated different options for painting metal. While doing this they found that an option for painting metal is powder coating it. As it turns out the coach of their team works at a place that does powder coating. So he told the team that he would take it to work and powder coat it, and that is what he did as you can see in the pictures. The coach did not design, build, or program the robot but he did apply the powder coating. So my question is this "Has this team committed a <G2> violation by the coach applying the powder coating?"

I would like to get this resolved before we have our first tournament. If there is no violation then great we will have them continue to move forward with building their robot. If there has been a violation then we will have the students remove the powder coated parts and replace them with not painted parts. I really appreciate your help in this matter. <G2>

## Answered by committee

Has this team committed a [<G2>](#) violation by the coach applying the powder coating?

No, the Team has not violated rule [<G2>](#) by having the coach apply powder coating. The REC Foundation Student-Centered Policy states:

The overarching mandate is that adults should not provide an unfair competitive advantage by having students use designs, programs, and game strategies that are inconsistent with the students' ability and knowledge base.

Powder coating a Robot does not provide an unfair competitive advantage, and is in no way related to the Team's design, programming, or strategy.

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### 1636: What Constitutes a Potential G2 Violation (GDC edition)

1-Sep-2023

[G2](#)

In [Q and A 1624](#) the REC Foundation Competition Judging Committee stated that despite this being a question related to judging, since it discussed game manual rules they could not rule on it. So, I ask the GDC for clarifications on what constitutes a potential G2 violation. All rulings in the Code of Conduct discuss what should be down in a potential code of conduct violation; however, there is not a general consensus about what actually classifies as a potential code of conduct violation. There has been much discussion around this issue and without an official ruling, this will be decided by each local event. Some judges and EPs state that if a team is not capable of fully recreating their code without any access to the internet, then they would be in violation of G2. Others have stated that nothing should be done unless there is a direct admission of doing something illegal. Both of these rulings seam on the extreme side however I am confident that both will occur without an official clarification. I believe that in order to have consistent rulings, there need to be examples of what the "correct" or "most accurate" ruling would be in the following scenarios (or any other scenarios the GDC believes would help clarify the situation)

" Since all of the scenarios listed below contain evidence of students not fulling understanding their code, should every one of these scenarios be treated as potential rule G2 violations? Should all of these scenarios result in the RECF being contacted by the EP and the team's coach being spoken to about the concern in accordance with the Event Code of Conduct Process, or would some of the scenarios not constitute a potential rule G2 violation?

A.

Judge: Can you please explain to me how your team's programming works?

Student: We use the built-in Vex code commands.

Judge: Can you elaborate on how you use this to tell the robot to move around the field?

Student: We put in the dimensions of the robot base and then we can just tell the robot to move a certain distance and turn to certain angles.

Judge: Can you explain any of the math or code behind how this works?

Student: No.

B.

Judge: Can you please explain to me how your team's programming works?

Student: We use the built-in PROS (a third-party software) commands.

Judge: Can you elaborate on how you use this to tell the robot to move around the field?



Student: We put in the dimensions of the robot base and then we can just tell the robot to move a certain distance and turn to certain angles.

Judge: Can you explain any of the math or code behind how this works?

Student: No.

C.

Judge: Can you please explain to me how your team's programming works?

Student: We use a PID control loop to tell our robot how far to travel. This allows the robot to slow down as it approaches its desired value.

Judge: Can you elaborate on the process of how you tuned your PID constants?

Student: We just changed the numbers until it worked.

Alternatively, if the CoJ does not like the example scenarios I provided, could a few examples stating what conduct should and should not be reported be provided?"

### Answered by committee

Note: This response has been co-authored by members of the committees responsible for Game Design, Judging, and Code of Conduct investigations.

The subject of investigating G1 and G2 Violations is inherently subjective, and intentionally designed to be handled case-by-case. We will continue to deny providing blanket guidance for hypothetical scenarios; at best, these scenarios undermine the case-by-case nature of investigations for teams who are innocent, and at worst, provide an "answer key" to teams who wish to circumvent G1/G2.

With that in mind, a [revised Code of Conduct reporting process](#) has been published. This process provides clear guidelines for exactly what a Judge (or any other volunteer, event participant, or event attendee) should do when they have a concern about a potential G1 or G2 Violation.

**There is no case in which a volunteer Judge will have to decide whether a team has violated either rule.**

As described in the article linked above, all concerns should be brought to the attention of the Event Partner, Head Referee, and/or Judge Advisor. This group of people will make a decision in coordination with the REC Foundation, and the incident will be reported to the Code of Conduct Committee for any needed action or follow-up.

If your question (as an Event Partner) is how to address these concerns once they have been brought to your attention, the article above also outlines your recommended procedures and escalation steps.

Regarding your scenarios A-C, they serve as examples for why this process is necessary. Any of these scenarios could reasonably be reported to the Judge Advisor if the Judges feel that the Robot's code is beyond the abilities of the student Team members. Or, it is also possible that each of these scenarios would not raise any student-centered "red flags" to the Judges, based on other factors or context. It is not realistic, or fair to the teams involved, to make a determination based on two lines of a judging interview.

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## 163: Programming Skills: Ending Early

28-Nov-2018

G2 Robot Skills Challenge

The rules state:

**Programming Skills Match** – A Programming Skills Match consists of a sixty (60) second Autonomous Period. There is no Driver Controlled Period. Teams can elect to end their run early, however this will count as an official run.

A team asked if they were to program their robot to drive over the platforms if they can then request to end the match while they are top. This appears to be allowed by the rules, however isn't really programming. So G2 may apply here:

**G2** Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX Robotics Competition.

Can teams stop early as a strategic advantage (to stay on a platform, avoid descoring a flag, avoid to touch a cap, etc.)? Or should the robot run to completion, and then, only if their completion is shorter than the 60 seconds (most are), they are allowed to end early?

Thanks.

### Answered by committee

The verbiage, "*Teams can elect to end their run early*", is intended to give Teams and event staff an option to end a run if a Robot's autonomous routine does not take the full 60 seconds. Usually, this occurs once the Robot has stopped moving.

It is not intended to provide an option for teams to strategically stop the Match and/or disable their Robot while it is still moving. Such a stop would be considered a human input, and would violate the spirit of the Programming Skills Challenge.

Appendix B defines a Programming Skills Match as follows:

Programming Skills Match – A Programming Skills Match consists of a sixty (60) second Autonomous Period. There is no Driver Controlled Period.

Appendix B also includes the following line:

Please note that all rules from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

With this in mind, G9 reads as follows:

<G9> Autonomous means "no humans". During the Autonomous Period, Drive Team Members are not permitted to interact with the Robot in any way, directly or indirectly. This could include, but is not limited to:

- Activating any controls on their VEXnet Joysticks or V5 Controllers.
- Unplugging or disconnecting from the field in any way.
- Triggering sensors (including the Vision Sensor) in any way, even without touching them.

Just as unplugging from the field would be considered a human interaction per G7, ending a Programming Skills Match early with the intention of stopping a Robot on the Center Platform using the field control's "disable" command would be considered a human interaction.

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## 1613: Team Member Student

11-Aug-2023

G2

Hi I am the Coach of Team 847X and asking a question on behalf of one of the team members. One of my student on this team have passed the California High School Proficiency Examination and is contemplating to withdraw form High School to attend Community College starting August 2023. I checked the rule book and I don't see any rule which would prohibit him from continuing to participate in the High School Vex Robotics as he is under 18 years of age as he is currently 16 years old. Please review this matter and advise at your earliest.

Best Regards.

### Answered by committee

Thank you for your question. The definition of "student" in the game manual provides guidelines to determine whether a specific individual is eligible to participate as a member of a VRC team. The individual you've described clearly meets the age requirement, so let's consider another part of that definition:

Anyone who is earning or has earned credit toward a high school diploma, certificate, or other equivalent during the six (6) months preceding the VEX Robotics World Championship.

The first day of the 2024 VEX Robotics World Championship for high school teams is April 25, 2024. The six-month period that precedes that date begins on October 25, 2024. If the student in your example withdraws from high school in August, they will be ineligible to compete on a VRC team this season. They would, however, meet the definition of a VEX U student and would be eligible for that competition.

To further clarify or discuss any specific edge-case scenarios, feel free to contact your [REC Foundation Team Engagement Manager](#).

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## 1266: Does rule <G6> apply to Scrimmage?

30-Oct-2022

G2 G6

Hello GDC: In the rule <G6>, it is stipulated that players who play certain roles must meet some special conditions to switch teams. The assignment of players' work is mainly based on engineering notes.

However, on Scrimmage for practice purposes, players are not registered before the competition, and there is no need to submit engineering notes on the day of the competition, so does this rule still apply?

Is it a violation of <G6> or <G2> if a player attends the Scrimmage temporarily with another team because they want to increase their practice opportunities?

### Answered by committee

Thank you for your question. Unofficial scrimmages and practices are not required to follow the rules in the Spin Up Game Manual, and <G6> does not apply.

Because all aspects of the VEX Robotics Competition should be student-centered, Teams should follow rule <G2> during all activities—whether the Team is at official events or unofficial practices/scrimmages.