

EV EDUCATION RALLY > Rules and Regulations

Please refer to the following documents for additional information regarding event location and schedules:

**EV RALLY SCHEDULE
EV RALLY ANNOUNCEMENT**

The schedule and location of events is subject to change. Copies of all Rules, Specifications, and Forms are posted on the Forms page of the EV Education Program web site at www.eveducation.org

Please consult the site frequently for updates. Be sure to pick up a copy of the final schedule at Registration.

ELIGIBLE VEHICLES

Four classes of vehicles will be included in the EV Education Rally. Each vehicle must comply with the appropriate vehicle specifications, provided separately, for that class of vehicles. Schools may compete in one or more classes and may enter more than one vehicle in a particular class. Teams and their vehicles must compete in all events. Trophies will be awarded for each event in each class as well as overall awards for each class. Refer to Scoring for discussion of multiple entries.

1. Full-size vehicle conversions – include vehicles manufactured by a recognized auto manufacturer that have been converted by students to operate exclusively on electricity. Note: Each vehicle shall be “street-legal” with a current license tag and appropriate state-required liability insurance. Full-size vehicles may be driven on public roads as part of the competition and must comply with all applicable laws and regulations.
2. E-Karts – include electric vehicles fabricated from commercially manufactured, gas-powered racing go-karts.
3. EM-TVs – includes electric vehicles meeting the prescriptive specifications for this class or assembled from kits provided by EV Master, Inc. Single and dual motor vehicles will compete in the same class.
4. Innovation Class – student build or converted vehicles using bio fuels and/or hybrid drive systems utilizing internal combustion and electric components

TEAM MEMBER CONDUCT/UNSPORTSMANLIKE CONDUCT

Alcohol, drugs, and other controlled substances are not allowed. The use of these substances by any team member will disqualify the entire team. Smoking is prohibited in all competition, display, charging, and garage areas.

Any participant who at any time or in any place uses improper, inflammatory language or gestures or exhibits reckless behavior shall be guilty of unsportsmanlike conduct and will be removed from the competition immediately. Teams may be disqualified from an event for unsportsmanlike behavior.

The EV Rally reserves the right to revoke any participant’s credential. Also refer to the Protest Procedure described on the last page of these rules.

EV EDUCATION RALLY > *Rules and Regulations*

FORMS AND WAIVERS

Before the EV Rally begins, team members and faculty advisors **MUST** sign forms, waivers of liability, etc. These documents will be sent several weeks prior to the event. Any participant who does not complete the appropriate form will not be allowed to register. That person will remain a spectator at all competitive events. PROPERLY SIGNED WAIVERS FOR ALL TEAM MEMBERS MUST BE PRESENTED AT REGISTRATION.

REGISTRATION FOR TEAMS

Pre-registration is required for all schools planning to compete. All team members **MUST** be registered by the close of registration in order to compete. Team members and teachers who are involved in Technical Inspection may register for the entire team. (See section on Technical Inspection below.)

PLEASE BE SURE TO ALLOW ENOUGH TIME IN CASE OF DELAY

Teams will be assigned times for Troubleshooting and Oral Presentations. Starting positions for acceleration, autocross and range competitions will be assigned. This order will be announced at registration and posted on the official notice board.

TEAM SIZE

There is no limit on the size of each school team. As indicated on the registration form, each team must pay an entry fee and a fee for each participant to cover costs. Competition is designed for a minimum of five team members. Under no circumstances will only one student compete in the Troubleshooting competition. If necessary, faculty may supervise more than one team from the same school.

Teams are free to invite any VIPs, parents or guests to the event. These attendees must register with Teddie Lohmeier, 706-757-3535 or by sending email to teddielohmeier1@cs.com

DRESS CODE

Rally participants are expected to dress and present themselves in a professional manner. Refer to vehicle specifications for specific protective clothing requirements during vehicle events.

HOSPITALITY

Water will be provided at the competition site. No food will be provided. Teams may bring their own picnic lunches and refreshments. A concession stand is available for lunch and snacks.

Refer to the separate sheets on area hotels.

EV EDUCATION RALLY > *Rules and Regulations*

DRIVER QUALIFICATION / DRIVER EQUIPMENT

Drivers of full-size vehicles for all events must be at least 16 years of age, must possess a valid driver's license, and must have experience driving the competition vehicle.

Drivers of all vehicles must submit a completed, signed waiver at Registration. It is the responsibility of the driver, their teachers, advisors, and school to have sufficient experience and capability to drive the vehicles in competition. The EV Rally and its sponsors assume no responsibility for evaluating the ability of drivers to compete but reserve the right to disqualify drivers from competition. Drivers must wear a competition safety helmet with a rating of Snell 90 or better. Team members must comply with all safety requirements detailed in the vehicle specifications for the appropriate vehicle class. Teams shall be responsible for providing all specified equipment.

MOVEMENT OF VEHICLE

Whenever vehicles are moved at the competition site, vehicles must be driven at a walking pace with at least one team member walking beside the vehicle. When vehicles are moved from the competition site to an outside site, they must be hauled appropriately or properly escorted.

MODIFICATION OF VEHICLES DURING THE COMPETITION

Teams are encouraged to build well-rounded vehicles that perform well in all driving events that test the performance of a vehicle under a variety of conditions. Vehicles must compete in all events. Modification of vehicles during competition to gain a performance advantage is limited to drive system and tire changes (including motor wiring and gear ratios). These modifications may only be performed during the lunch break. Teams will not be provided additional time for modifications. Modifications and repairs required as a result of equipment and component failure may be performed as needed. ***EV Rally staff must be notified before performing all modifications and repairs. Following all modifications and repairs, the vehicle must be re-inspected before it can be allowed to compete.*** Refer to vehicle specifications for additional guidance on modifications and component replacement.

VOLUNTEER SUPPORT

10 POINTS

All competing teams must supply at least one volunteer to assist the EV Rally staff in each event. It is not necessary that the same person serve as volunteer for every event. Teams may rotate members through volunteer positions. To obtain points for volunteer duty, teams must submit a list of volunteers at registration. Volunteers must check in with event coordinators prior to the start of the event and assist as directed until the event coordinator releases the volunteer. A maximum of five points will be awarded per team for volunteer efforts.

EV EDUCATION RALLY > *Rules and Regulations*

TECHNICAL INSPECTION

5 POINTS

Technical Inspection will be conducted on a first-come, first served basis. Inspection must be completed before competition commences. Please allow adequate time to arrive, unload and prepare for inspection. Technical inspection will be located at the competition site. Directions to the site may be found on the Local Info sheet. Teams who arrive late and cannot complete inspection during the prescribed time will forfeit 3 points.

Only two students and one adult are required to be present at Technical Inspection. Two students will lead inspectors through the checklist. The checklist for this inspection is available on the Forms page of the EV Education Program website <http://www.eveducation.org>. You are strongly encouraged to download the checklist and inspect your own vehicle before coming to the competition to insure compliance. If your vehicle is rejected during tech inspection, you will not be able to compete in the first driving event. You will be allowed to work on it and present it for re-inspection during the lunch break and if the vehicle passes, you may enter subsequent driving events. YOUR VEHICLE MUST SUCCESSFULLY COMPLETE TECHNICAL INSPECTION TO PARTICIPATE IN ANY OF THE EVENTS

Note: Innovation class vehicles will be individually inspected with an emphasis on safety.

VEHICLES SHOULD COME TO THE COMPETITION FULLY CHARGED. There will be no on-site charging.

TROUBLESHOOTING

20 POINTS

Check notice board for specific location. The troubleshooting event is intended to provide students with an opportunity to diagnose faults in an EV. Each team will select three members to participate in the Troubleshooting competition. Teams will be scheduled to compete and a schedule will be posted at registration. Teams, which arrive late for their scheduled time, will forfeit 3 points. Note: this event is scheduled concurrently with the Oral Presentations

Troubleshooting is a timed event. Prior to the start of the timed period, an EV Rally staff member will review the rules with contestants, make sure they are wearing proper safety gear, and answer questions. The total time of the event is seven (7) minutes for visual inspection, identification of several faults that have been placed in the vehicle's electrical system, and written assessment. Students will be provided with the vehicle's wiring diagram and an assessment sheet to record their assessments. Students may use a multimeter and the vehicle's wiring diagram to diagnose the faults. Notes may not be used. A multimeter will be provided for the teams that do not bring one. *STUDENTS MUST WEAR RUBBER GLOVES AND SAFETY GLASSES OR GOGGLES FOR THIS EVENT.*

The team must provide its assessment entirely on a written form provided. Students will be expected to provide both a diagnosis for the fault and a possible solution.

Judging and scoring will be based on the following categories:

Fault Diagnosis	50%
Prescribing solution	50%

The winner of the event will be the team that most accurately describes the faults and provides the best solutions. In the event of a tie between teams, the winner will be the team that has the quickest time in submitting their written assessment and the clarity and completeness of the written assessment.

The entire team may be present to view this competition, however, other teams are excluded. Teams will be escorted to and from the competition site. A team will be disqualified from Troubleshooting if viewing team members communicate with participating team members. Efforts will be made to ensure that students from other teams will not be allowed to view the competition before their scheduled time.

A wiring diagram for the E-MTV is available under "Forms, E-MTV Schematic".

EV EDUCATION RALLY > *Rules and Regulations*

STUDENT ORAL PRESENTATIONS 15 POINTS

This competition will be held concurrently with the Troubleshooting competition. Check notice board for specific location. Teams will be scheduled to compete and a schedule will be posted at registration. It will be the responsibility of each team to make sure that they are on time. Teams that arrive late for their scheduled time will forfeit 3 points. Please see the Oral Presentation Score sheet for current year's question and scoring procedures.

Teams must prepare an abstract and bibliography and submit three copies to the judges. Each team will select no fewer than two students and no more than four students to be involved in the presentation. Presentations must be live, without the aid slides, overheads, TV and video equipment, or computer-based presentations. No AV equipment will be provided. If props and supporting materials are utilized, the time limit will include any set-up time. The presentations should focus on the topic and effective delivery, not the mechanics of AV presentation. The presentations must be no less than 4 minutes and no more than 7 minutes in length. Presentations will be judged on effectiveness of addressing the topic (45%), overall creativity (45%), and adherence to rules (proper length, etc. 10%). Please refer to the Oral Presentation Scoring sheet.

ACCELERATION 10 POINTS

Teams will run in the order posted on the notice board. Failure to enter your vehicle in its required order for each attempt will result in a Did Not Finish (DNF) for that attempt. Remember, your vehicle must pass technical inspection before competing.

The course will be a timed straight-line course. A starting flag or light will signal the start. Vehicle elapsed time will be measured from the starting signal to the end time the vehicle exits the course. Vehicle speed at the end of the course will also be measured. Competition staff may flag a driver to stop if unsafe conditions are observed. Failure to comply with rules, competition staff instructions, or reckless operation can result in disqualification for that event.

There will be least two attempts per team. The field of vehicles will be able to make as many attempts as time allows. Teams can use the same driver on each attempt or change drivers. A team's fastest elapsed time will be the recorded team time. The fastest overall elapsed time will be the competition class winner.

AUTOCROSS COURSE 15 POINTS

Teams will run in the order posted on the notice board. Failure to enter your vehicle in its required order for each attempt will result in a Did Not Finish (DNF) for that attempt. Remember, your vehicle must pass technical inspection before competing.

The course will be a timed course marked by rubber pylons that will require both left and right turning. A time penalty will be assessed for each pylon that is knocked over. The course may also utilize a "stop box." Vehicles must come to a complete stop within the "box" or be assessed a time penalty. Competition staff may flag a driver to stop if unsafe conditions are observed. Failure to comply with rules, competition staff instructions, or reckless operation can result in disqualification for that event. Drivers will be given an opportunity to walk the course prior to the competition.

EV EDUCATION RALLY > *Rules and Regulations*

There will be at least two attempts per team. The field of vehicles will be able to make as many attempts as time allows. Teams can use the same driver on each attempt or change drivers. A team's fastest time will be the recorded team time. The fastest overall time will be the competition class.

EV QUIZ BOWL

20 POINTS

Check notice board for specific location and start time. Each team will select no fewer than two students and no more than four students to be involved. The competition will consist of two rounds with the winners determined by the highest cumulative score from both rounds.

ROUND 1

- All questions valued at 5 points each
- A reader will read the question aloud to the group. The question will be read only once. After the question is read, teams have 20 seconds to record their answers
- Teams will provide written answers. (Cards and markers furnished)
- No penalties for incorrect answers
- Answers will be Fill-in-Blank or Multiple Choice
- Round 1 concludes in 20 questions or 30 minutes, whichever comes first

ROUND 2

- Points from Round 1 continue
- A reader will read the question aloud to the group. The question will be read only once. After the question is read, teams have 20 seconds to record their answers.
- Teams will provide written answers. (Cards and markers furnished)
- All questions are valued at 10 points each.
- No penalties for incorrect answers.
- Answers will be Fill-in-Blank or Multiple Choice.
- An optional "Bonus Question" valued at 15 points could be asked.
- Round 2 concludes in 20 questions or 30 minutes which ever comes first.

RANGE

15 POINTS

Teams will start in the order posted on the notice board. Failure to enter your vehicle in its required order will result in a Did Not Finish (DNF). Remember, your vehicle cannot compete unless it has passed technical inspection. Note: there are separate instructions for Full-size vehicles and for E-karts/EM-TVs.

Full-sized vehicle conversions will complete laps on a closed course utilizing roads on the competition site property.

Objective - Full-size

- The objective is to complete the greatest number of laps within a specified time limit of between one and two hours. The specific time limit will be announced at registration.

Start & Driving - Full-size

- Vehicles will line up in the designated start area in the order posted on the notice board.
- A pace car will be used to start the event. After a few laps, the pace car will exit the course and vehicles will proceed around the closed course loop at a safe speed. It is up to the teams and drivers to set their own pace. Passing is permitted. However slower moving vehicles not intending to pass should stay to the right. All passing should be done in using caution and turn signals should be used to indicate intentions.

EV EDUCATION RALLY > *Rules and Regulations*

Communications – Full-size

Each vehicle will contain a driver and a separate radio operator. Radio operators will be provided with a handheld radio by the GAEVR staff and will remain in constant communication with the event control tower. ***Note: Radio Operators must wear the same protective gear as the driver.***

Safety – Full-size

If the GAEVR staff spots unsafe conditions, or vehicle operation, they will, at their discretion, signal one or more vehicles via radio with a warning or penalty or institute a full-course caution.

In the event of a safety violation, the GAEVR staff may issue a warning via radio. For more serious infractions or repeat offences the staff will issue a penalty. In that case, the vehicle must enter the pits immediately on the next lap and remain parked in the pits for a penalty period of 5 minutes. At the end of the penalty period, the vehicle may re-enter the course. Any vehicle that receives more than two penalties will be disqualified for this event. The decision of the staff is final and is not open to dispute. In the event of a full-course caution, all teams will be notified via radio. A yellow caution flag will be displayed, and the pace car will enter the course. All vehicles must line up behind the pace car and no passing will be permitted. Once the staff decides the situation has been resolved, all vehicles will be notified, a green flag will be displayed, and the pace car will leave the course.

Because more than one vehicle will be operating on the course at a given time, drivers must exercise caution – especially when entering and leaving the pit area and passing. Vehicles must stay to the right except to pass. Driving at an excessive speed, erratic driving, or driving at very low speed will prevent you from achieving maximum range within the time limit. Drafting is not effective at these speeds and vehicles will be penalized for this.

Vehicles that are unable to proceed at a safe speed or experience vehicle failure must report to the staff and should continue if possible to the pit area. If the vehicle cannot make it to the pits, it must pull completely off the course as soon as it is safe to do so and ensure that their vehicle is parked safely out of the flow of traffic.

Once the vehicle is off the course, team members should remain with their vehicle, unless doing so presents a hazard, and then they shall exercise judgment that will minimize the risk to themselves and to others.

Pit stops – Full-size

During the event, teams may enter the pits at any time. Vehicles must stay within the designated pit area and caution must be exercised since a portion of the infield will be in use for other activities. Speeds on the pit road must be held to less than 10 MPH and this will be strictly enforced. Penalties may be given for speed limit violations.

At regular intervals (20 – 30 minutes) during the event, mandatory pit stops will be signaled via radio and red flag. When signaled to do so, vehicles must enter the pits, change drivers, and record the battery pack voltage on the form provided. Once these tasks have been completed, vehicles can return to the course. **Note:** you can exchange drivers and radio operators. Both the driver and radio operator must be wearing the required safety gear and have seat belts fastened before leaving the pits.

Crew duties – Full-size

Additional team members in the “pit crew” will be required to record lap numbers on forms provided. To insure fair counting, we may swap volunteers between teams so that other teams’ members will observe the counts.

EV EDUCATION RALLY > *Rules and Regulations*

E-Karts and EM-TVs will complete laps on a closed course.

Range will be determined by measuring the number of laps completed of a closed course during a prescribed time interval between 30 and 60 minutes in length. The interval will be announced at registration.

Vehicles will line up on a starting grid in the order assigned. They will start from a standing start and proceed around the closed course loop at a safe speed. Team members will be required to record lap numbers and elapsed time (to the nearest second) of each lap on a form provided. **Teams should furnish their own stopwatches for timing.**

To insure fair counting, we may swap volunteers between teams so that other teams' members will observe the counts.

Each team will be assigned a pit area adjacent to the course. "Pit stops" will be required at regular intervals (5 – 10 minutes) during the event. During the pit stop the driver must switch and the pit crew must record battery pack voltage on the forms provided at registration. Note: Teams must switch drivers. Therefore, a minimum of two drivers are required. Teams may use as many different drivers during the competition as desired. This is a good way to involve more of your team.

Because more than one vehicle will be operating on the course at a given time, drivers must exercise caution – especially when entering and leaving the pit area. Vehicles must stay to the left (inside lanes) except to pass. Passing will only be permitted in designated areas on the course. Penalties will be issued for illegal passing, drafting, or reckless operation.

Course monitors will use a set of flags to signal the drivers.

- o Red flag = stop on next lap for pit
- o Yellow flag = caution – no passing - used if an unsafe condition exists on the course.
- o Black flag = Penalty – this will be used if a driver is observed operating a vehicle in a reckless or unsafe manner or violates the rules. A black flagged driver must pull off the course and stop as soon as it is safe to do so. In the event of a safety violation, GAEVR officials may issue a warning. For more serious infractions or repeat offences the official will issue a penalty. In that case, the vehicle must enter the pits immediately on the next lap and remain parked in the pits for a penalty period of 2 minutes. At the end of the penalty period, the vehicle may re-enter the course. Any vehicle that receives more than two penalties will be disqualified for this event. The decision of the officials is final and is not open to dispute.

Heats may be run to reduce the number of vehicles on the track at the same time and allow grouping of similar vehicles.

SCORING

The overall EV Rally winner in each class will be determined by adding points earned for each competition based on the value assigned. For schools that enter more than one vehicle in a class, the highest of scores from the acceleration, autocross, and range events, and the lowest score from technical inspection will be used in computing the overall class score. For schools that enter vehicles in more than one class, overall class scores will be computed using the school's troubleshooting, oral presentation, and quiz bowl scores. Ties will be broken first by the student oral presentation and then by the troubleshooting scores. Point values for each event are as follows:

Volunteer Support (10 points maximum)

Team assists with conducting assigned event (plus)	5 points
Team volunteer assistance during rally	up to 5 additional points
No assistance	0 points

EV EDUCATION RALLY > *Rules and Regulations*

Technical Inspection (5 points)

0-1 faults	5 points
2 faults	4 points
3 faults	3 points
4 faults	2 points
5 faults	1 point
6 or more	0 point

PLEASE NOTE: NO AWARDS WILL BE GIVEN FOR PLACEMENT IN TECHNICAL INSPECTION
or VOLUNTEER SUPPORT

Troubleshooting (20 points)

1 st place	20 points
2 nd place	17 points
3 rd place	14 points
4 th place	11 points
5 th place	8 points
All others (except DNF)	5 points

Student Oral Presentations (15 points)

1 st place	15 points
2 nd place	13 points
3 rd place	11 points
4 th place	9 points
5 th place	7 points
All others (except DNF)	4 points

Acceleration (10 points)

1 st place	10 points
2 nd place	8 points
3 rd place	6 points
4 th place	4 points
5 th place	2 points
All others (except DNF)	1 point

Autocross Course (15 points)

1 st place	15 points
2 nd place	13 points
3 rd place	11 points
4 th place	9 points
5 th place	7 points
All others (except DNF)	4 points

EV Quiz Bowl (20 points)

1 st place	20 points
2 nd place	17 points
3 rd place	14 points
4 th place	11 points
5 th place	8 points
All others (except DNF)	5 points

EV EDUCATION RALLY > *Rules and Regulations*

Range (15 points)

1 st place	15 points
2 nd place	13 points
3 rd place	11 points
4 th place	9 points
5 th place	7 points
All others (except DNF)	4 points

CHARGING

It is the responsibility of each team to charge their vehicle(s) prior to arrival at the competition area.
There will be no on-site charging.

PROTEST PROCEDURE

Any participating team can file a protest. The protest can be against a) an entry or team's qualification and conformity to the rules, or b) an incident or person related to the competition during the competition.

In order to discourage unreasonable protests by participants, the protesting team will surrender, as bond, 10 points per protest to the Jury, to be restored or retained based on the outcome.

The protest must be made on the Protest Form, signed by the faculty advisor, include the names of witnesses, and presented to the Competition Headquarters for review by the Jury. All protests must be made within an hour of the incident. The Jury will hear the protest as soon as practical, and all parties concerned will be given adequate notice of the time and the location of the hearing. The Jury will be comprised of 2 teachers randomly selected plus one EV Rally staff member. The Jury is the only authority to hear and rule on a protest. The Jury's decision is final.

VEHICLE NUMBER

All competing vehicles must have numbers. Refer to the vehicle specifications for number size and placement. Vehicles without numbers will be assigned one at the competition.

AWARDS

Trophies will be awarded for in every event for each class except Technical Inspection. Overall trophies will be awarded for each class. Trophies will be awarded one place deep for events with 3 or fewer competitors, two places deep for four competitors and three places deep for five or more competitors.

QUESTIONS

If you have a question regarding these Rules and Regulations, if you need a rule clarification, if have a question regarding the Technical Specifications or if you need a technical clarification please use email to communicate with EV Rally staff.

If you have a question regarding registration, payment, lodging, or completion of forms and waivers, contact Teddie Lohmeier via email at teddielohmeier1@cs.com or call (706) 757-3535, cell (706) 338-9316