



## Science Olympiad 2021 National Tournament Gravity Vehicle Information

- For the 2021 National Tournament, Gravity Vehicle Trial Event does not count towards overall team standing and will be conducted through document, picture and video submission.
- The exact Target Distance for the Event, the link to the Google Form to submit all materials, and the “Event Code Word” that must be spoken at the start of the video will be available through Scilympiad on Friday, May 14<sup>th</sup> at 4:00 AM PDT/MST.
- Teams will have **5 hours** from their initial login into the event in Scilympiad to access the required Target Distance and “Event Code Word”, complete their video, and upload all materials.
- Any team competing in this event must have all materials uploaded by 11:59 PM PDT/MST, Wednesday, May 19<sup>th</sup>.
- Participants should follow all public health guidelines in effect for their community.
- An adult (parent, coach, etc.) should be in the room with the participant during their competition time. This adult should avoid coaching the participants during the event.
- The coach is advised to review his or her team’s video prior to submission to ensure that all the items presented here are covered and all rules have been followed.
- All rules published in the 2021 Science Olympiad Division C Rules Manual for Gravity Vehicle apply, except for the Target Distance and the fact that the teams will be providing measuring devices and doing the measurements on video to demonstrate compliance.

The following is the list of the **4 items** that **MUST** be submitted in order to compete in Gravity Vehicle at the 2021 National Tournament:

### **METRIC MEASURING INSTRUMENTS ARE REQUIRED**

#### **1. Practice Log:**

- Teams will submit their Practice Log as a separate file in Excel, Word, plain text or PDF format along with the video. It is the team’s responsibility to ensure that all documentation submitted is legible. Illegible Logs (due to miniscule size or poorly handwritten) **may be deemed incomplete**.
- The Practice Log must contain 3 or more parameters as specified in the official rules. This includes:
  - Target Distance - Must be between 3.00 and 6.00 meters.
  - Vehicle Distance from Target – See the diagram later in this document on how to properly measure this.

- 3rd Parameter – Some examples are listed in the official rules. This parameter CANNOT be time or speed, as they are not valid data for this tournament.
    - Team (School) name, team #, and team member’s names MUST appear in the Practice Log.
    - The Practice Log MUST contain at least 10 runs with the current 3.00 m to 6.00 m Target Distance parameters.
- 2. Vehicle and Ramp Measurement Pictures:** The file label of the picture MUST give an indication of what it is intending to show.
- At least one picture taken from above showing entire Vehicle.
  - At least one picture taken from side showing entire Vehicle.
  - A picture of the complete Vehicle on an appropriate digital or analog scale or a dual-pan balance clearly showing its mass. Other mass measuring devices are allowable, but in all cases it MUST be clear that the complete Vehicle **is less than 2.000 kg**.
  - Multiple pictures (front, side, back) of the Ramp with the Vehicle in the Ready-to-Run mode clearly showing that the entire system fits within the competition parameters listed in Rule 3.f.
  - A close up picture of the release mechanism in the Ready-to-Run mode.
  - **NOTE:**
    - A ruler / tape measure MUST be visible in most of the above pictures to clearly verify dimensions / measurements. *(If you cannot read it, then we will not be able to!)*
    - Failure to provide adequate and detailed images may result in construction violations.
- 3. Single Video of Runs**
- A single continuous video (e.g.; no editing, no multiple takes) of the Team's 10-minute Event Time (rule 5.b.) MUST be submitted in order to compete in GV at Nationals this year. Teams MUST label this file with your School’s name, Team #, and the words “Gravity Vehicle Runs.”
  - The video MUST begin just before the team's 10-minute Event Time starts.
    - Participants should introduce themselves and the adult present.
    - Participants should state the “Event Code Word” found by logging into the event in Scilympiad.
    - There should be NO pre-work performed before the video starts. The video needs to show us what you would be doing as if this tournament was a normal, in-person vehicle event, and the Event Supervisor finished their presentation to you and just said “Your 10 minutes begins now!” Show what you would be doing from that point until you finish your runs.
    - The Team’s actions MUST be clearly shown in the video (e.g, working on the Vehicle, setting the brake, placing the Ramp on or behind the Start Point, aligning, starting the Vehicle, etc.).

- The video MUST follow the Vehicle down the Ramp to the position it stops. Keep the video running as they go to measure the Vehicle Distance (this time will not be included in the 10-minute Event Time). Then go right to the next run.
- **Because of all of the above, it is highly recommended that the actual members of the GV team NOT be the ones doing the taping if at all possible. Again think of the video as the ES watching the vehicle and the team.**
- The video should NOT be taken from the POV (point of view) of from behind the Target Point toward the Starting Point.
- A **competition violation** will be awarded for each run if non-continuous, multiple individual videos are submitted.
- Distance measurements MUST be included in the video, but the time for measurements will NOT count toward the team's 10-minute time. The Video MUST clearly show the Target Point and Vehicle's Measurement Point during measurements at the end of each run. If at all possible, please use a long tape measure if the distance between the Measurement Point and the Target Point is **more than 1.00 meter**.
- The Team is allowed to follow the Vehicle as long as they do not touch the Vehicle prior to it coming to a complete stop.
- When the Team has finished all of their runs, one or both should face the camera and state that they have finished all the runs (up to a maximum of 3) for the National Tournament.
- The video MUST NOT include the track setup process.

#### 4. Completed Team Checklist:

- All sections MUST be completed on the Checklist. This includes all constructions checks. Incomplete sections could penalize your team.
- Record all distances **in centimeters to the nearest 0.1 cm**.
- The Gravity Vehicle Team Checklist MUST be downloaded from the link found in the next section.
  - [Gravity Vehicle Team Checklist](#)

**THE VEHICLE DISTANCE IS THE POINT-TO-POINT DISTANCE FROM THE MEASUREMENT POINT TO THE TARGET POINT IN CENTIMETERS MEASURED TO THE NEAREST 0.1 cm AS SHOWN IN THE DIAGRAM BELOW.**

#### Event Track Setup:

- To help set up the track, a diagram can be found at the link below. Please configure your track to match the posted Target Distance above.
- [Gravity Vehicle Track Diagram](#)
- The Start Point and Target Point MUST be clearly marked and visible on the track.

**Contact Information:**

- If you have any questions on Gravity Vehicle, please have your coach send an email to [bronigel@newyorkscioly.com](mailto:bronigel@newyorkscioly.com). Please include "National 2021 – Gravity Vehicle" in the subject line.
- Please **DO NOT** use this email to submit your required information because they will not count.
- Please **DO** use it to contact us if you are having difficulties submitting your information to the proper Google form.

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**How to Take Measurements**

The Vehicle Distance is the point-to-point distance from the Measurement Point to the Target Point in centimeters measured to the nearest 0.1cm as shown below.

