NORTH CAROLINA
SCIENCE OLYMPIAD

Virtual Tournament: Rules and Protocols

NCSO Coach's Clinic - October 2nd, 2021
Jonathan Hiser, Nathan Hiser

Safety Disclaimer:
- Adult supervision is required while students are working on devices, building devices, and testing devices.
- Safety glasses are required.

How this works

- On February 3rd, 2022 a distance will be announced to everyone (during the virtual office hours)
- Prior to the February 5th, 2022 tournament day, practice logs will need to be submitted early via a Google Form
- Teams will join the Zoom room at their self scheduled times. During this time teams will:
  - Check in
  - Run through device check
  - Be sent to a "track"
  - Complete up to 3 runs within the 10 minutes
- Team size is limited to (2) students
  - But family members can be recruited to assist as needed (especially important for video submission of the runs).

Google Form!

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Gravity Vehicle - Raleigh Regional

Submit all requested information by 3pm on Feb 20. Late submissions will not be accepted.

Email address *

Valid email address

This form is collecting email addresses.   Change settings

School/Team Name *

Short answer text

Team *

○ Varsity

○ JV1

○ JV2

Team Member Names

Short answer text

Practice log - upload a pdf of your practice log.

⬆ Add file

Size Verification - take a picture of the car & the ramp in the ready to run position from above that shows the width & length of the setup in cm. *

⬆ Add file

Size Verification #2 - use only if needed for an additional picture.

Size Verification - take a picture of the car & the ramp in the ready to run position from the side that shows the height of the setup in cm. *

⬆ Add file

Run #1 - this should be your best run. This should be a continuous video from the time of release through measuring the car (dowel to target). Without stopping the video, run a tape measure from the target point to the start line to verify distance. *this must be one continuous video in order to be counted. *

⬆ Add file

Self report - what was your distance to the target to the nearest 0.1cm for Run #1? *

Short answer text

Run #2 - this should be your second best run. This should be a continuous video from the time of release through measuring the car (dowel to target). Without stopping the video, run a tape measure from the target point to the start line to verify distance. *this must be one continuous video in order to be counted. *

⬆ Add file

Self report - what was your distance to the target to the nearest 0.1cm for Run #2?

Short answer text

Run #3 - this will be used only to break ties. This should be a continuous video from the time of release through measuring the car (dowel to target). Without stopping the video, run a tape measure from the target point to the start line to verify distance. *this must be one continuous video in order to be counted.
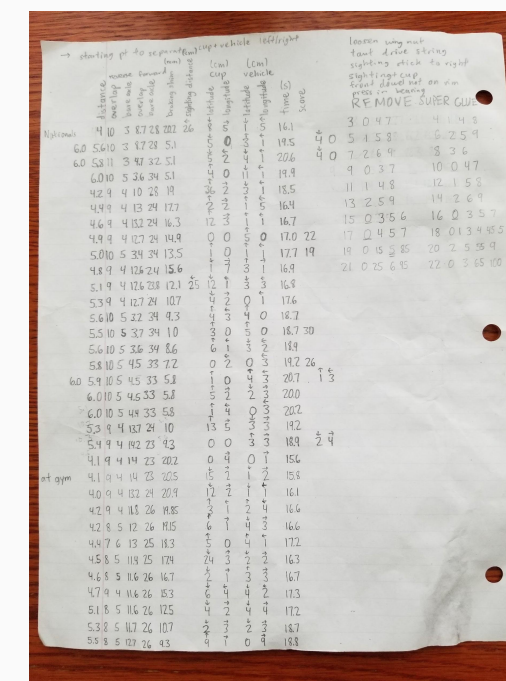
⬆ Add file

Submission Examples - Practice Log

- Practice logs to be submitted through the google form. (include team name in file name)
- Practice log <u>must</u> record the Target Distance, Vehicle Distance, and one additional parameter. (example: # of string wraps around the axle)
- Time is not part of scoring and is not a valid third parameter
- Submissions can be any file type for event supervisors to open and view
  - (a clear photo of a handwritten log, a Word document, or Spreadsheet)
- (4c): If parts are 3D printed, lasercut, or similar, information must be logged:
  - Information about tool used, details of source file, and description of how the team used the tools

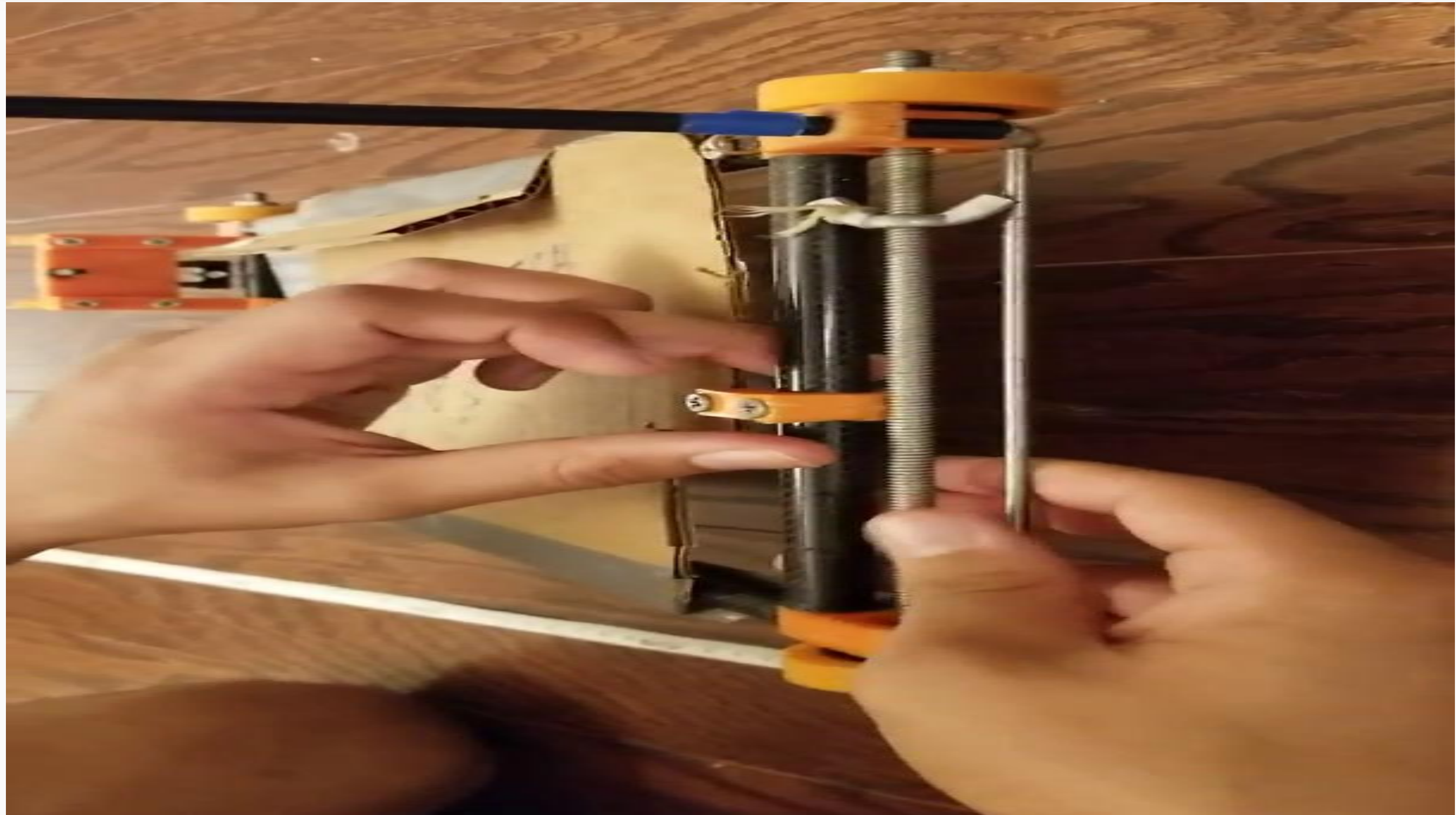| Run Number	Target Distance	Vehicle Distance	(additional parameter)
1	6.5m	75.6cm	[data entry]
2	7.5m	37.5cm	[data entry]
…	…	…	…

Size Verification (Gravity Vehicle)

- Device in ready-to-run configuration to show (as clear as possible) a measurement of devices in height, width, and length.
- Size verification will be handled either at check-in or in the "track room".

Size Verification (Mousetrap)

- Device in ready-to-run configuration to show (as clear as possible) a measurement of devices in height, width, and length.
- Size verification will be handled either at check-in or in the "track room".

Live Video - Camera On Musts

- Cameraperson does not have to be a participant, recommended a third person is handling the camera while students compete.
- Participants will be asked to verify the following items while videochatting:
  - Verification of track distance (make sure it is the same as what is announced)
  - Be a continuous video keeping the vehicle in the frame at all times (verifies video is not edited)
  - Shows the vehicle distance measurement (this will be used to verify the self-reported number)
  - Ideally, competitors are verbally announcing the measurements for additional confirmation.

Video Submission Example:
Gravity Vehicle

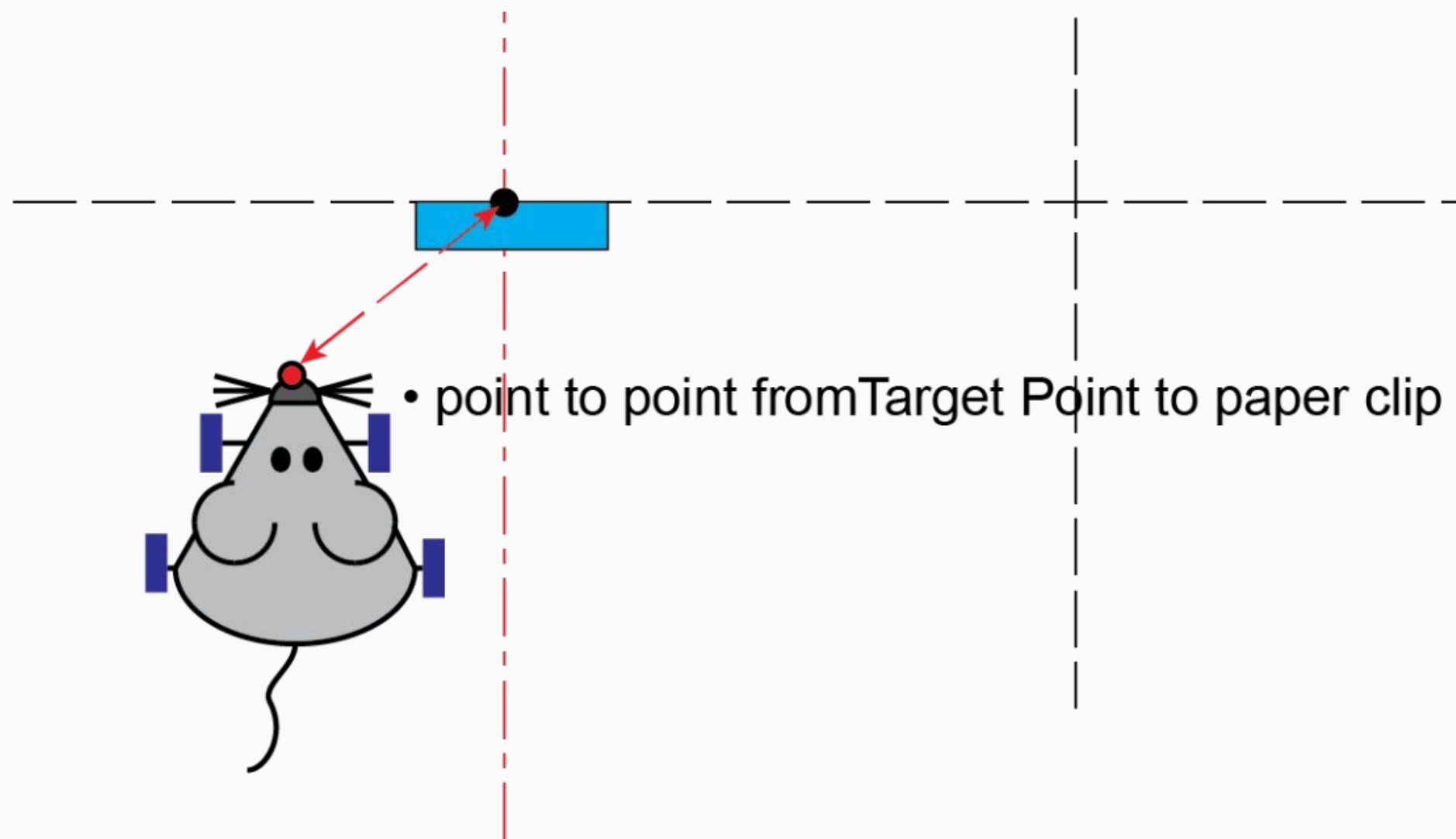# Video Submission Examples: Mousetrap Vehicle

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- No time scoring this year, based solely on distance.
- Time will be recorded by event supervisor as a tiebreaker.
- Each team's Final Score is the sum of their 2 best Run Scores out of their 3 runs + any Final Score Penalties.
- Final Score Penalties:
  - Incomplete Practice Log: 250 points added to the team's Final Score
  - Missing Practice Log: 500 Points added to the team's Final Score
  - Competition Violation: 1500 points added to each Run Score that has 1 or more Competition Violations
  - Construction Violation: 3000 points added to each Run Score that has 1 or more Construction Violations
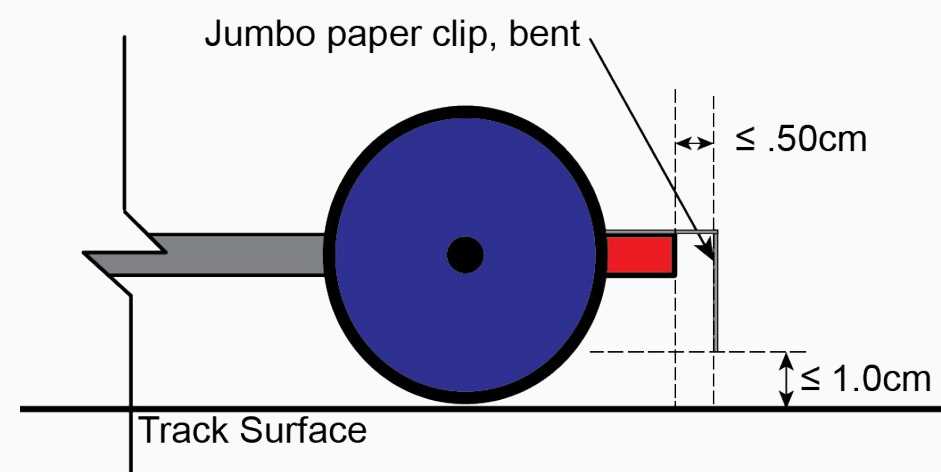- Low Score wins

- Point to point measurement from paperclip (Measurement Point) to Target Point, rounded to the nearest 0.1cm
- Distance score for a failed run is 2500 points

• point to point fromTarget Point to paper clip

Scoring and Construction: Rule Changes

- NCSO: The target distance will be a chosen distance between 2 and 5 (Gravity Vehicle) meters or 1 and 4 meters (Mousetrap Vehicle). (Teams should find a roughly 7 meter clear space for the runs).
- Vehicles may be run on any surface available to the competitors.
  - Allows a fun exploration of friction on different surfaces! Do some testing, find what works best for your design! Can be outside, just weather would be a factor.
- Jumbo Paperclip
  - A jumbo paperclip must be attached to the front of the Vehicle and bent so that one end of it is pointing down toward the Surface of the Track. The paperclip must not be cut or shortened. The end toward the track surface will be the Vehicle's Measurement Point for distance measurements. The Measurement Point must be at least 0.5 cm beyond the front of all parts of the vehicle and extend within 1 cm of the track surface.

Jumbo paper clip, bent

≤ .50cm

≤ 1.0cm

Track Surface

Tips and Questions

- Build your vehicle for the surface you have available to you. If you are going to run on carpet, concrete, asphalt, wood flooring, etc. you should design around that.
- Ensure you have clear space of up to 7 meters (+/- 23 feet)
- Wear your safety glasses.
- And most importantly have fun and learn something!
- Questions: Feel free to email Jonathan Hiser at jhiser13@gmail.com
- We are also working with NCSO to have virtual "office hours" to help answer questions as well.
- Check the NCSO website for rule clarification and FAQs!