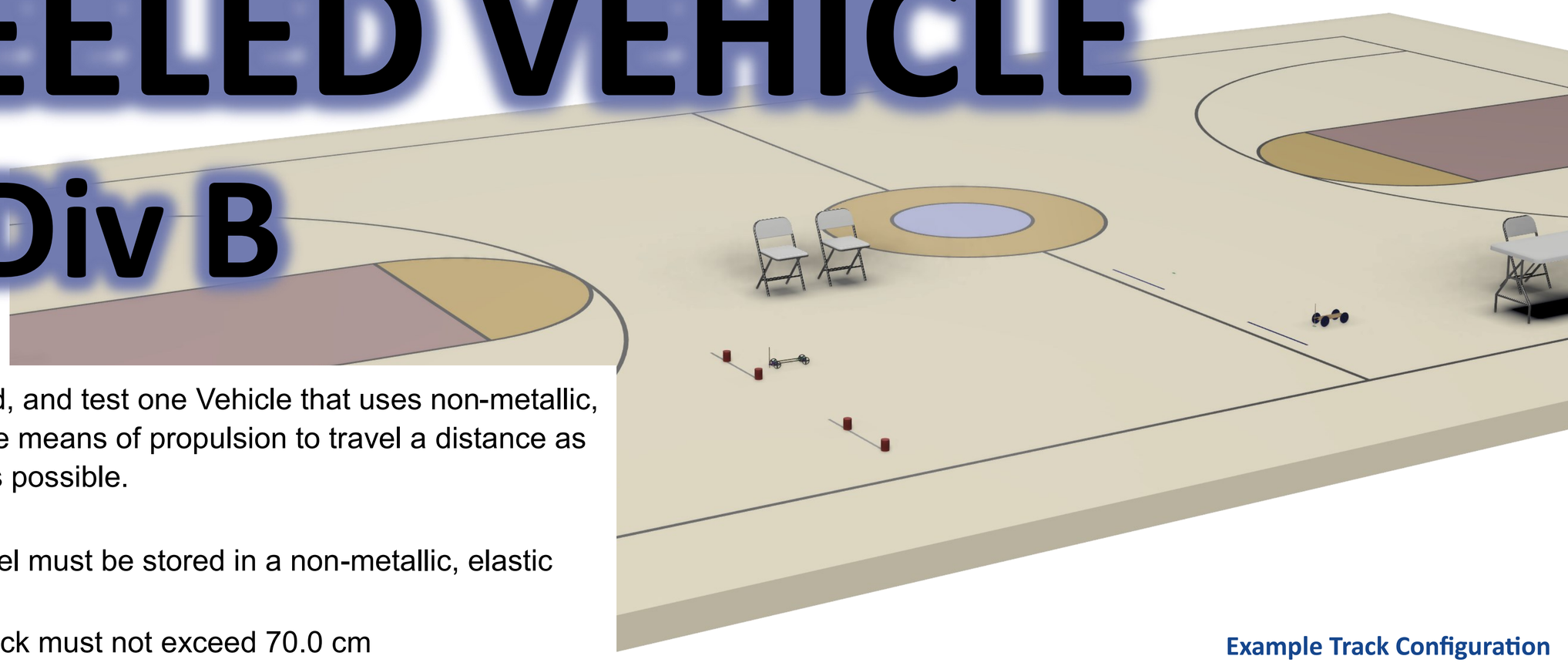
WHEELED VEHICLE

2024 Div B



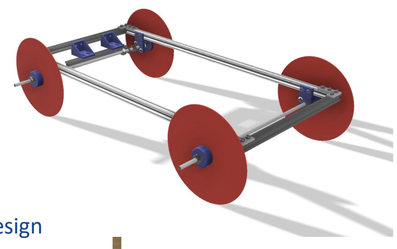
Example Track Configuration

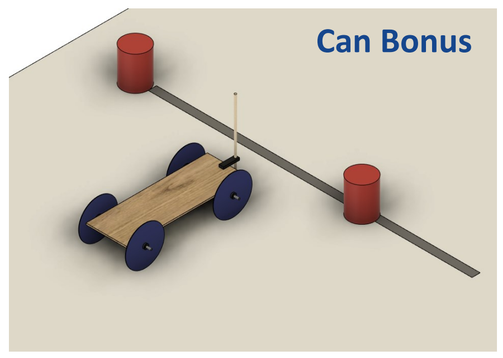
EVENT DESCRIPTION

Teams must design, build, and test one Vehicle that uses non-metallic, elastic material as its sole means of propulsion to travel a distance as quickly and accurately as possible.

BUILD SUMMARY

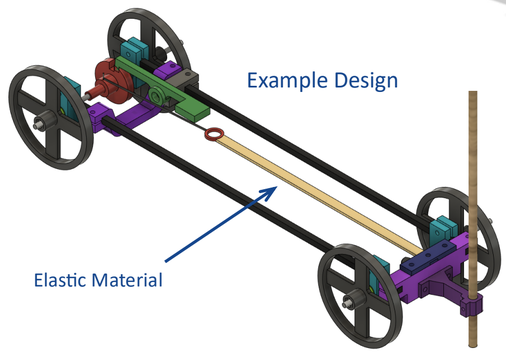
- All energy used to propel must be stored in a non-metallic, elastic material
- Wheels from front to back must not exceed 70.0 cm
- Vehicle width must not exceed 30.0 cm
- 1/4” to 3/8” Dowel attached to front of Vehicle
- Use #2 pencil to trigger start in vertical motion
- All parts must move as a whole. No tethers or separate pieces allowed.





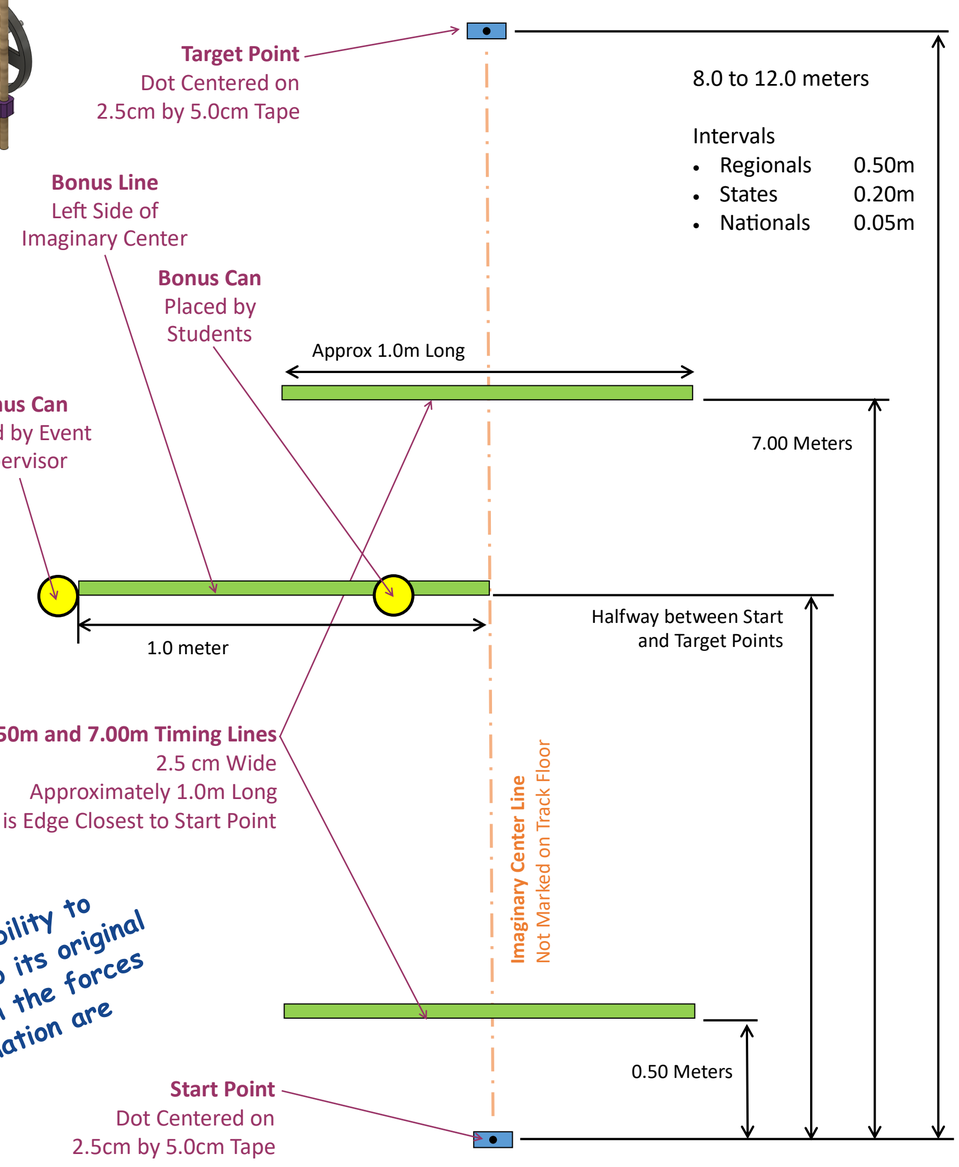
TRACK SUMMARY

- Target Point : Between 8 and 12 meters
- Start Point & Target Point marked on 2.5 by 5.0 cm tape
- Timing Lines at 0.5m and 7.0m from Start Point



COMPETITION SUMMARY

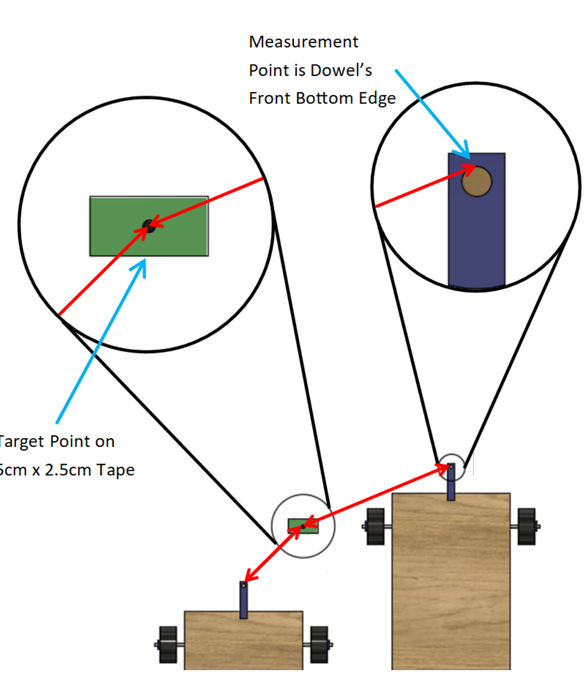
- Impound Event
  - Released after Impound : Distance to Target Point
- Distance to Target Point (8 to 12m)
  - Regionals/Invitationals : Interval 0.5m : 8.0, 8.5, 9.0, 9.5, 10.0, to 12.0
  - States : Interval 0.2m : 8.0, 8.2, 8.4, 8.6, 8.8, 9.0, 9.2, 9.4, to 12.0
  - Nationals : Interval 0.05m : 8.00, 8.05, 8.10, 8.15, 8.20, 8.25, to 12.00
- Event Time : 8 mins
  - Up to 2 Runs can be completed. Best scoring run used.
  - Modifications allowed during Event Time
- No electric or electronic tools except a calculator
- Runs receive a Competition Penalty when Vehicle fails to reach the 7.0m Timing Line



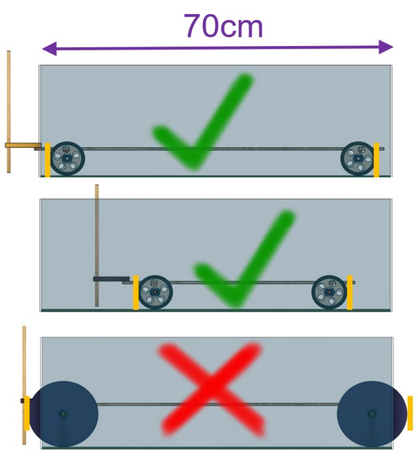
SCORING SUMMARY

- Team with the lowest Final Score wins
- Final Score is lowest Run Score of the team’s runs
- Run Score = Distance Score + Time Score + Can Bonus + Log Bonus
- Time Score = Run Time x 2
  - Run Time begins when the dowel crosses the 0.5m Timing Line and ends when the dowel crosses the 7.0m Timing Line
  - Time Score is zero (0) for runs failing to reach 7.0m Timing Line and for Failed Runs
- Distance Score = 1 point per cm the Measurement Point (Dowel) is from Target Point
  - Distance Score is 2000 points for a Failed Run
- Can Bonus : A smaller gap between cans earns a higher bonus
- Log Bonus awarded for correctly recording practice runs
- Failed Runs occur:
  - Vehicle travels backwards at Start Point
  - Dowel Rod failed to reach the 0.50m Timing Line
  - Team is unable to complete the run(s) within the 8 mins

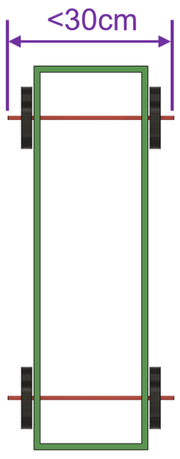
Elastic Material : ability to deform and return to its original shape and size when the forces causing the deformation are removed



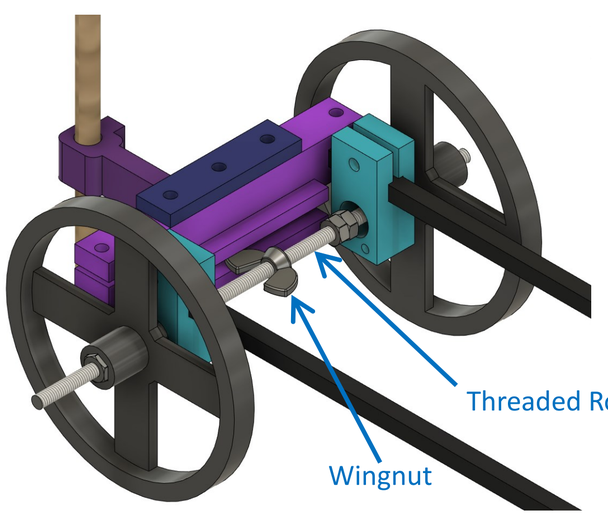
Distance Measurement Examples



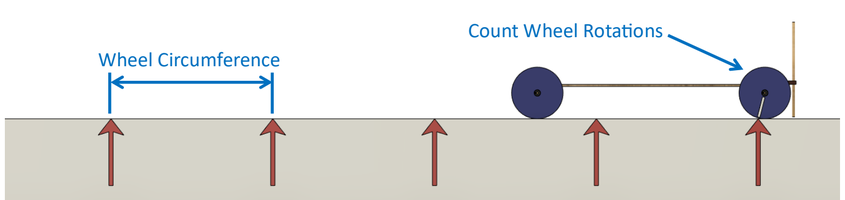
Vehicle Length



Vehicle Width



Wing Nut Braking Example



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