

2023-2024 SECME Webinar

January 9, 2024

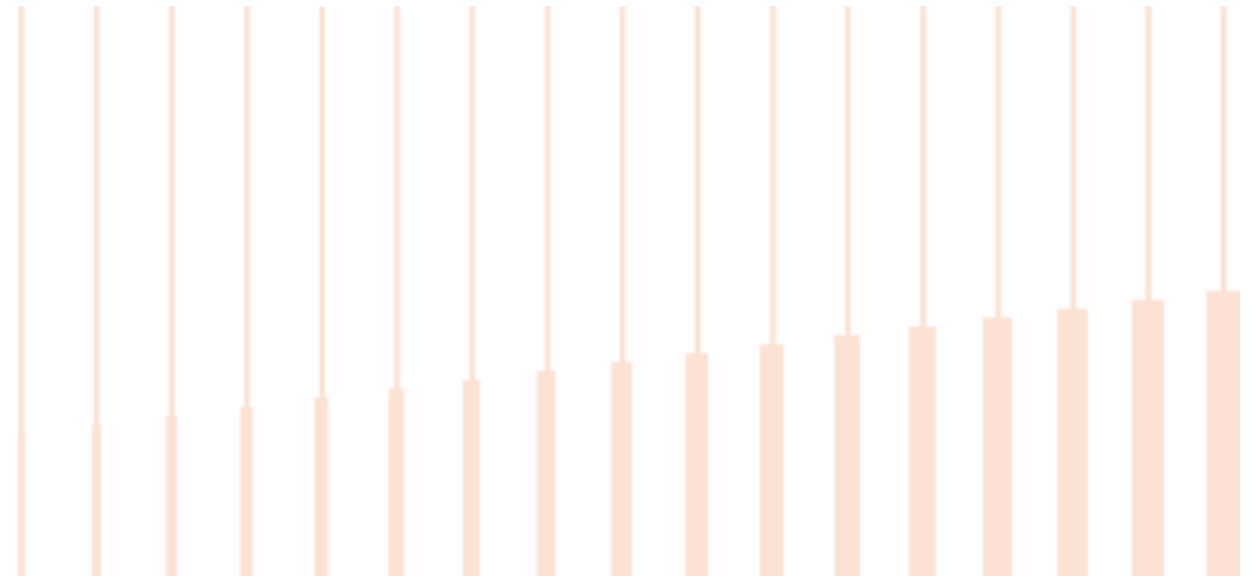


POWERING THE NEW ENGINEER TO TRANSFORM THE FUTURE

Agenda



- Mousetrap Car
- Water Bottle Rocket
- Engineering Notebook
- Presentation
- Deadlines



Mousetrap Car (MTC)



- **Materials**

- Required - Standard Mousetrap 9.8 cm by 4.5 cm (3.86 in by 1.77 in) with only one spring
- The spring cannot be altered in any capacity
- No 3D printed materials of any kind allowed in MTC build

- **Cost**

- Total cost to build MTC is \$10.00 (do not include cost of mousetrap itself)
- Recycled and donated materials are not included in the total cost but need to be documented.

- **Measurements**

- Required - MTC bail arm maximum length of 15.24 cm (6 in)
- Performance of MTC is based on longest distance traveled

Water Bottle Rocket (WBR)



- **Materials**

- Pressure vessel must be one clear two-liter bottle (no tinted bottles allowed)
- No metal, glass, hard plastics, spikes, rocks, antennas of any kind, or parachutes are allowed in build WBR

- **Cost**

- Total cost to build WBR is \$10.00
- Recycled and donated materials are not included in the total cost but need to be documented.

- **Measurements**

- Maximum total height is 76 cm
- Minimum radius nose cone tip of 1.5 cm
- Maximum fin width is 10 cm
- Elementary School Division
 - Performance of WBR is based on maximum hangtime
- Middle and High School Division
 - Performance of WBR is based on the highest apogee (peak height) using clinometer

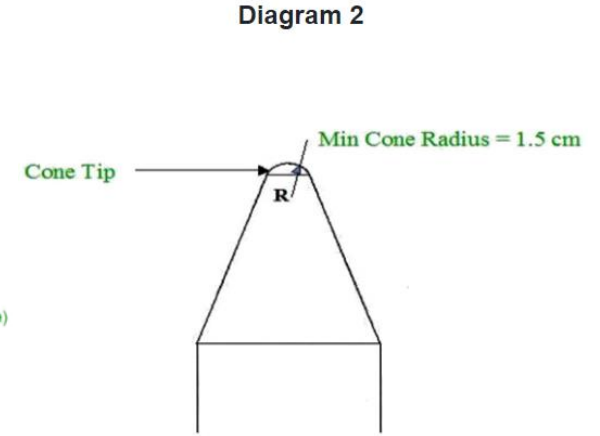
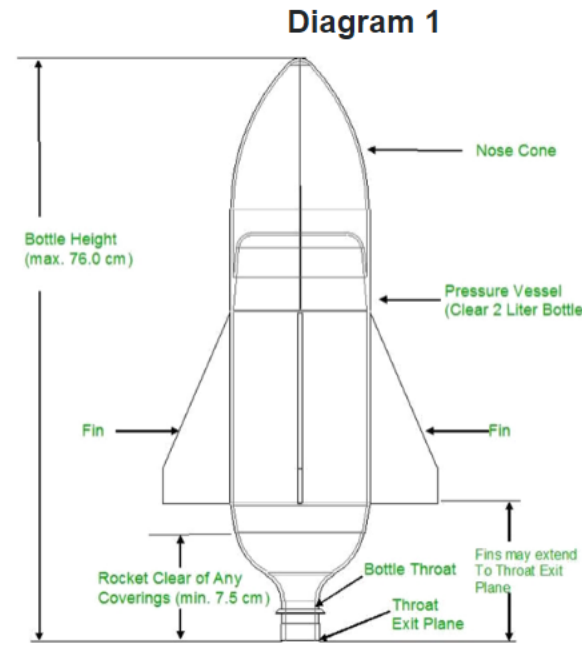
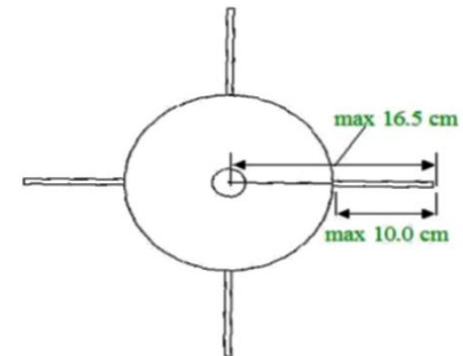


Diagram 3



Engineering Notebook



- The engineering notebook is a requirement for both Water Bottle Rocket and Mousetrap Car competitions. It is a log of student work over the course of the project.
- The engineering notebook is worth 30% of the total score.
 - Scoresheets are available on our website and list the components that judges will look for at the regional competitions.

Section 2: Engineering Notebook – 30%		
	5	Organization: <ul style="list-style-type: none">• Cover page – competition and division, team name, members, district, school, coordinator• Table of Contents – headings and page numbers• Team Norms and Team Roles• Meeting Notes – dated entries with summaries
	15	Planning and Design: <ul style="list-style-type: none">• Brainstorm – planning is evident throughout the design process• Concept Art/Sketches – sketches reflect different versions of the design• Materials List and Budget – receipts for purchases and descriptions of donations and/or recycled materials
	10	Results: <ul style="list-style-type: none">• Technical Drawings – drawing of final design with all parts and measurements labeled• Photos - front, side, and top views of the design• Trial Runs – data for 3 trial runs of each design version, minimum of 2 designs and 6 total trial runs

Presentation



- The presentation is also a requirement for both Water Bottle Rocket and Mousetrap Car competitions.
- The presentation is worth 20% of the overall score

Section 3: Presentation – 20%		
	5	Organization: <ul style="list-style-type: none">• Title slide• About your team slide Slides are neat, legible, and easy to follow.
	15	Content Slides: <ul style="list-style-type: none">• Brainstorm and Sketches• Drawings of the Final Design• Materials and Budget• Technical Drawings• Trial Runs• Conclusions and Future Recommendations

- Mousetrap Car
 - Only teams in the **elementary division** who place 1st at the regional competition and advance to the national competition need to submit a video.
- Water Bottle Rocket
 - Teams in **all divisions** (elementary, middle, and high) who place 1st at the regional competition and advance to the national competition must submit a video of the students presenting their slides.
- The video should be 5 – 7 minutes and submitted as an mp4 file.
 - It can be a recording of an in person presentation or recorded via Zoom or Teams with the slides shared.

Deadlines for National Competition



- Registration Portal will open in early March
 - The registration portal will be a Qualtrics survey
 - Waiver forms are required for **all students** participating in the national competition, including those competing virtually.
 - IRB Consent form for collection of student data
 - Forms will be available on our website in early February for coordinators to distribute to students' parents/guardians.
- District/Regional Host will upload 1st place winning teams'
 - Engineering Notebook Scoresheet (all divisions)
 - Video presentations (all division WBR teams and elementary school MTC)

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Questions?



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