Oregon State University NASA USLI

11/08/2018

1) Competition

2) 2018 OSU USLI Team

3) OSU Rocket and Rover

4) Performance and Results

What is USLI?

NASA University Student Launch Initiative:

- 8 month competition
- 45 teams competed

2018 Competition

- Rocket has a target altitude of 5,280 ft.
- Carries a ground deployable rover payload

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2018 OSU USLI Team

- 8 ME
- 2 ME/ECE
- 4 ECE
- 3 CS
- 24 Volunteers

1) Competition

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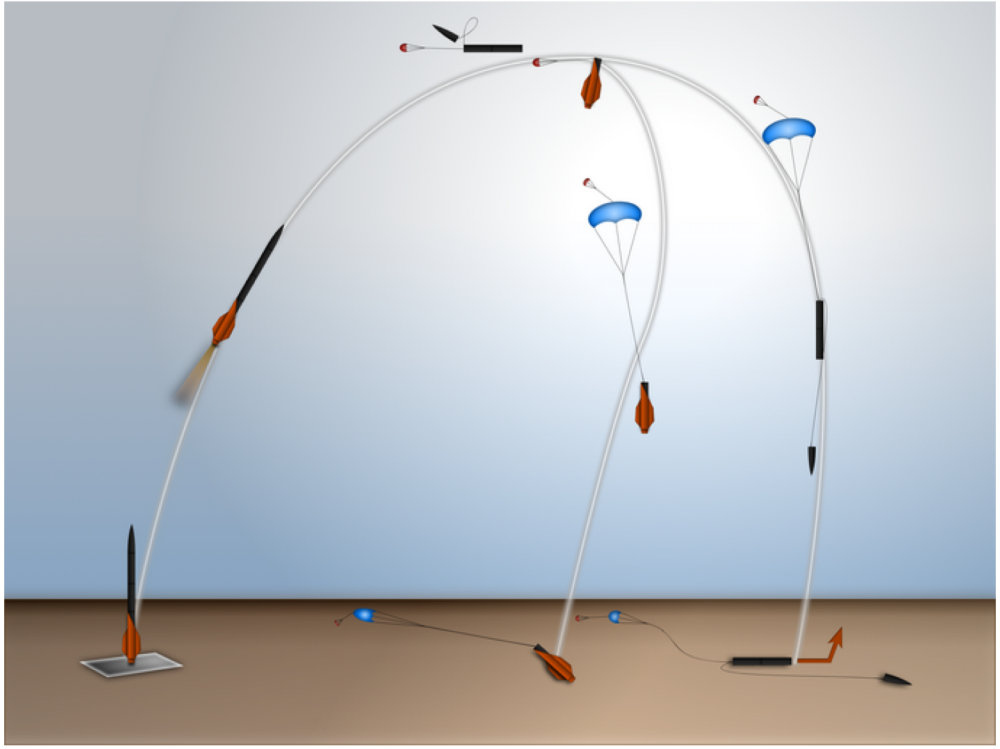
SENOR COHETE
ZENITH
40
41

Mission Profile

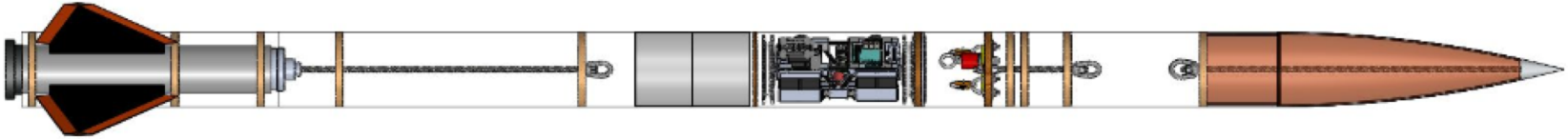


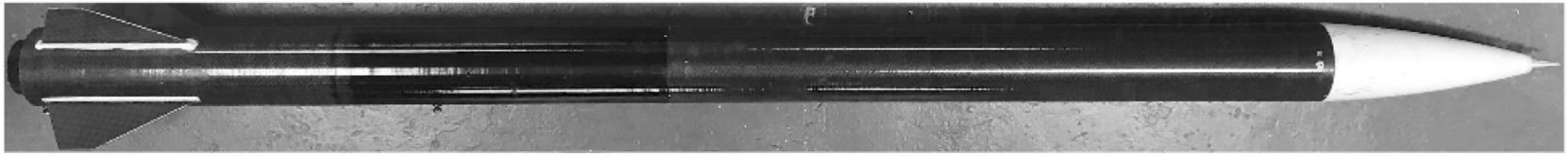
Launch Vehicle

Gross weight: 39.425 lbs.

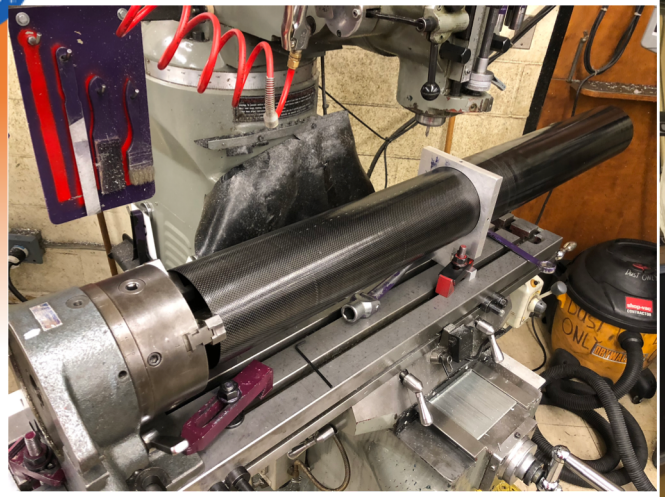
Length: 104 in.

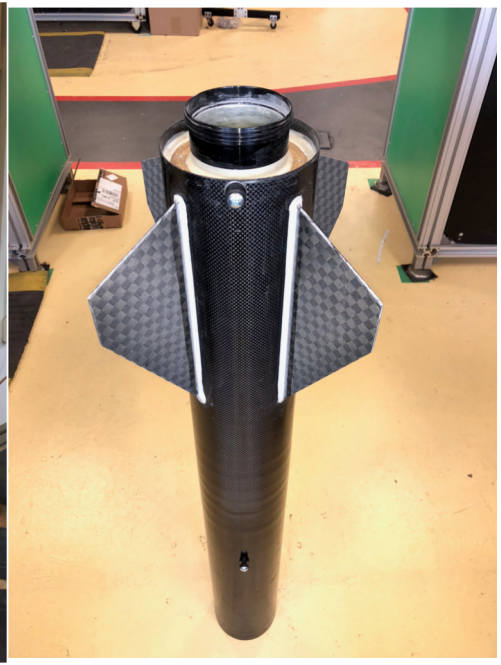
Inner Diameter: 5.2 in.





Launch Vehicle Manufacturing





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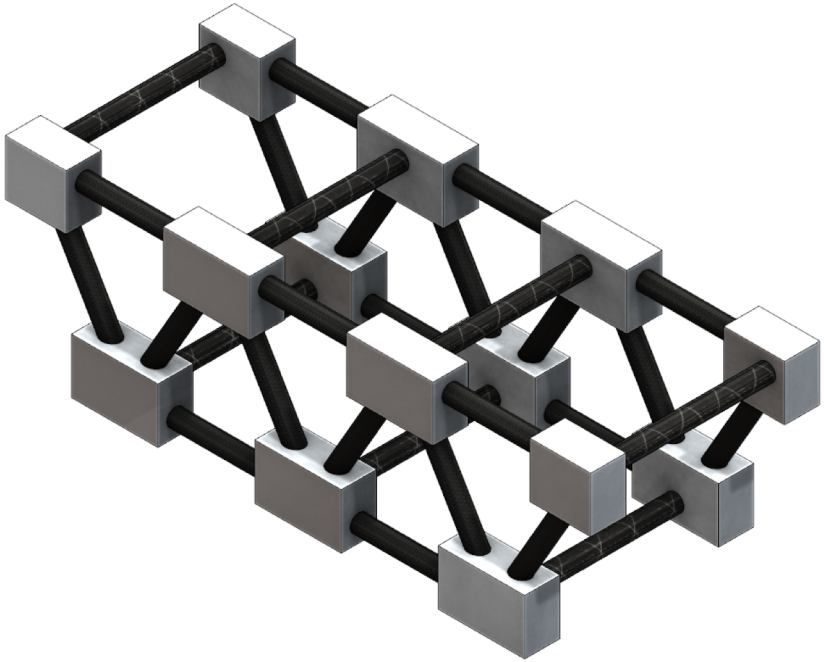

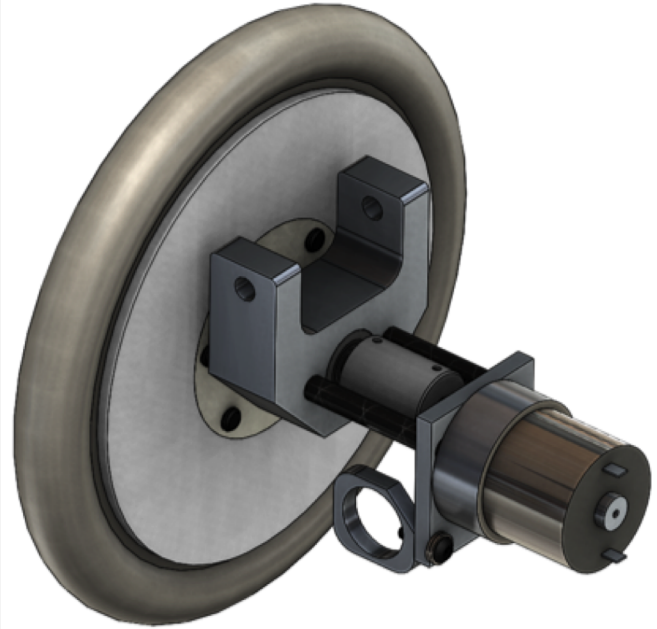

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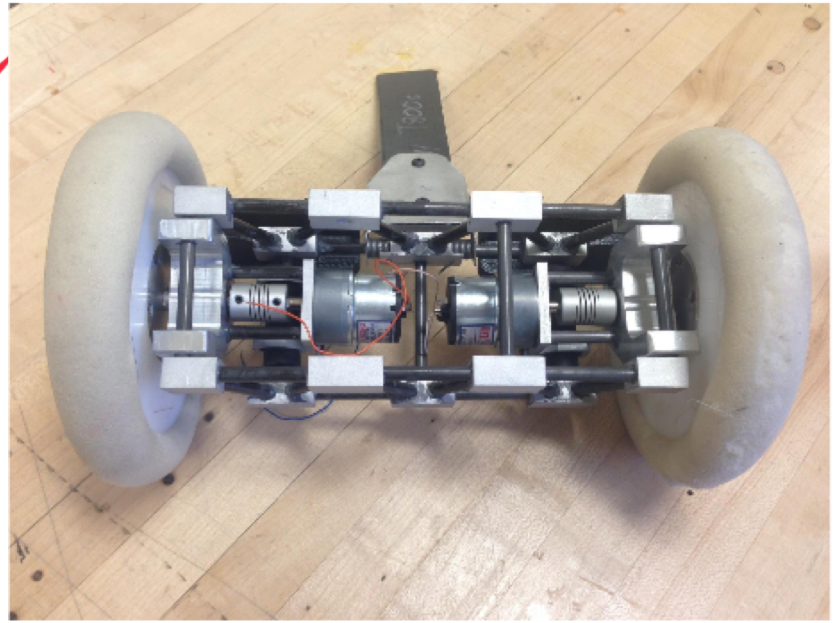

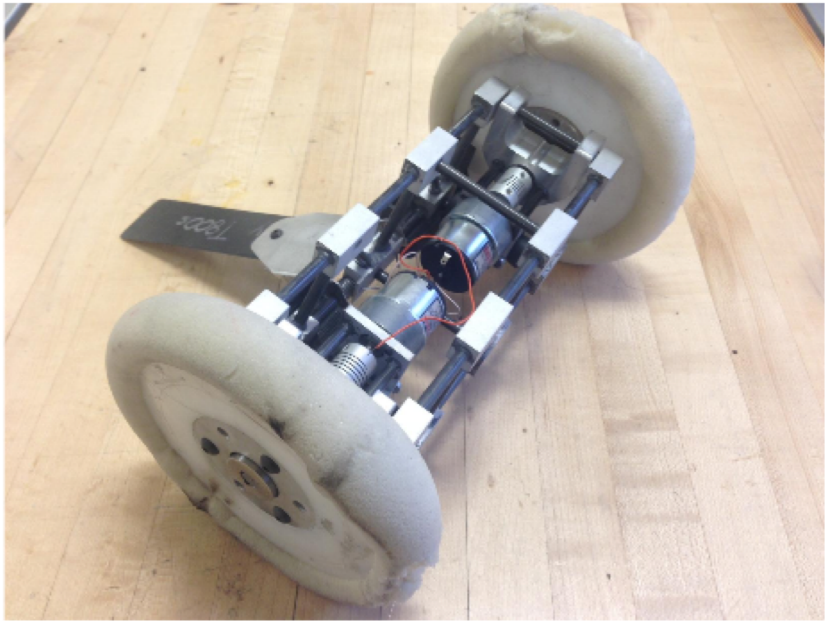

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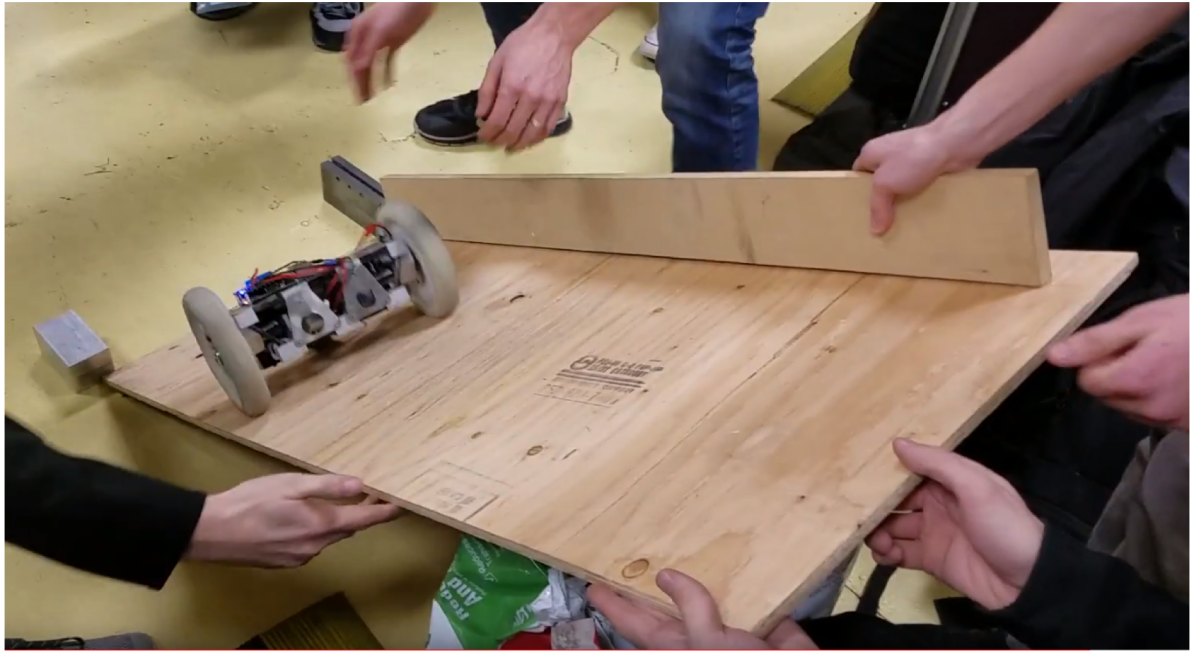

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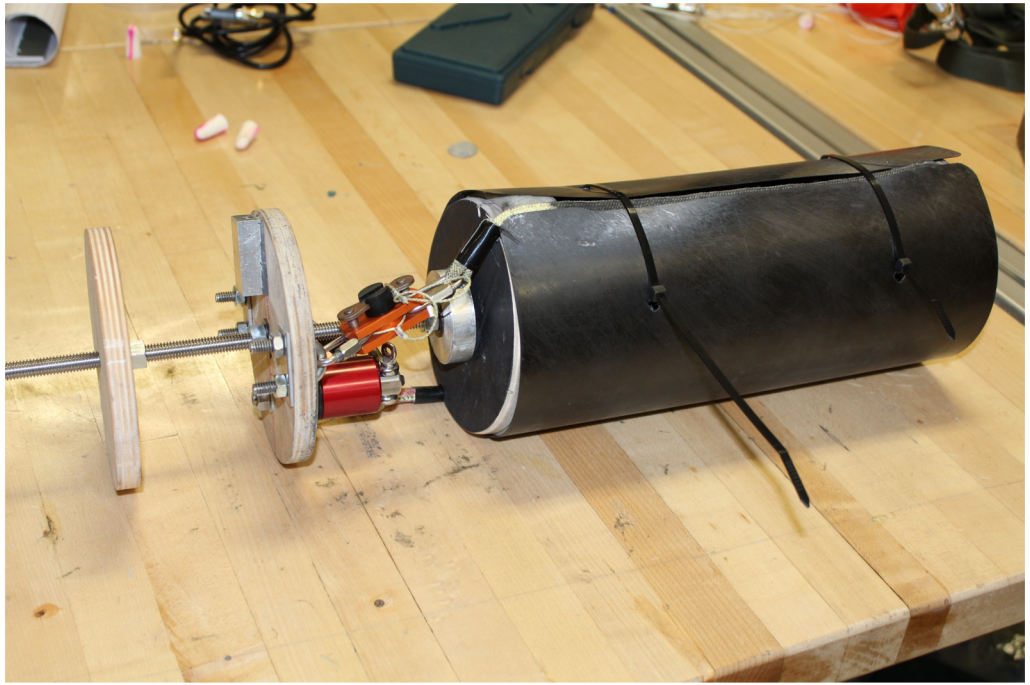
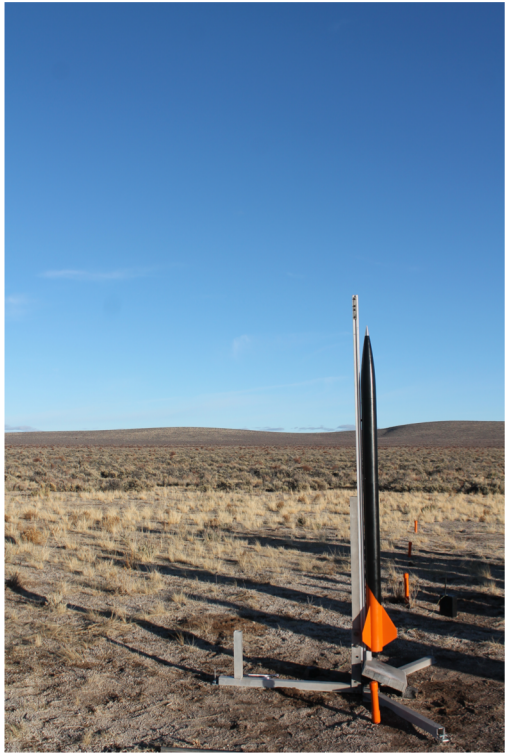
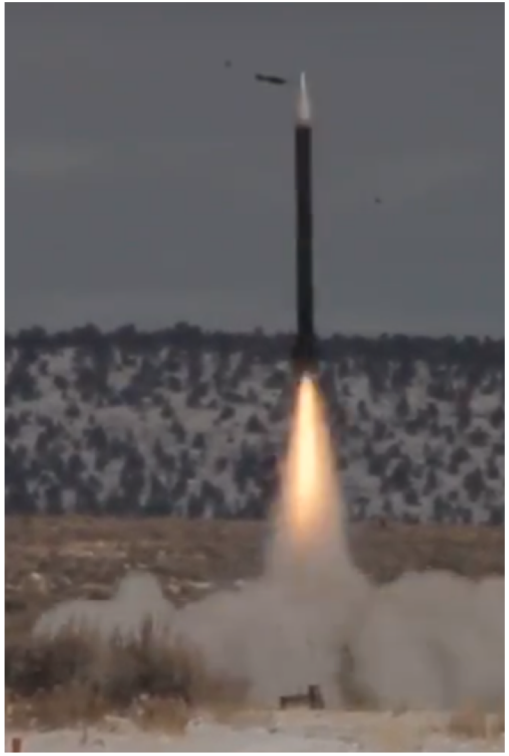


Payload

Test Launches

Test Launches





Test Launches

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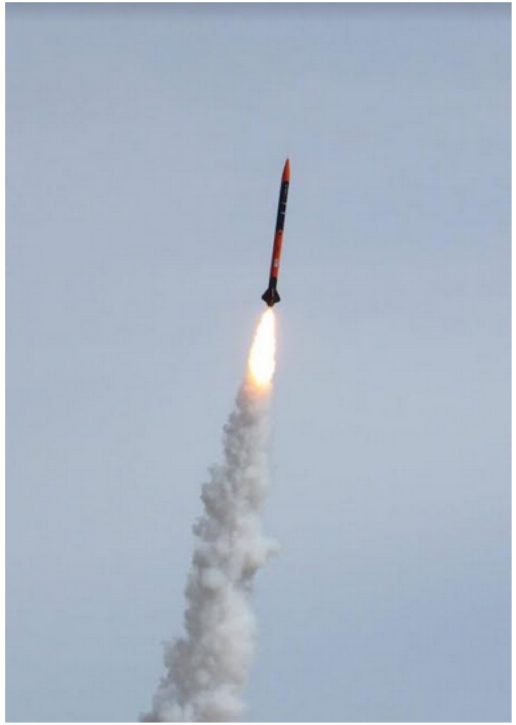
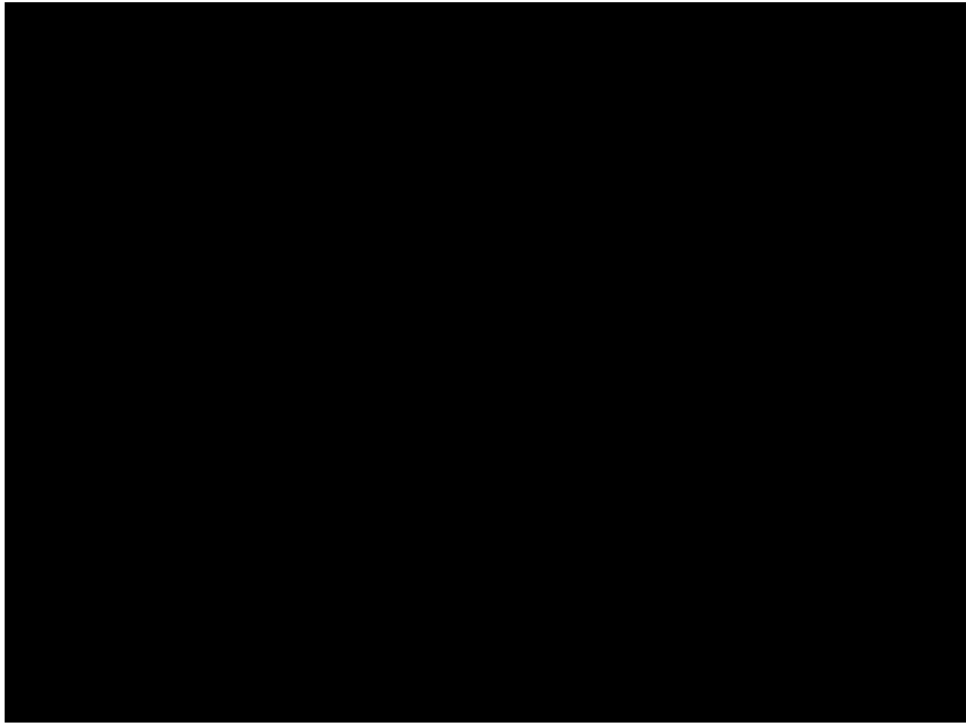
Competition Launch





Rover in Huntsville

Educational Outreach

Match Stick Rockets

Subject: Rocketry & Newton's Laws of Motion
Grade(s): Middle School 8th Graders & High School
Length: 25 – 35 mins
Date: December 14th, 2017

Lesson Overview:

Demonstrating fundamental principles of Newton's Laws of Motion, the match stick rockets will allow the students to get to have a hands on experience will rocketry and understanding force concepts.

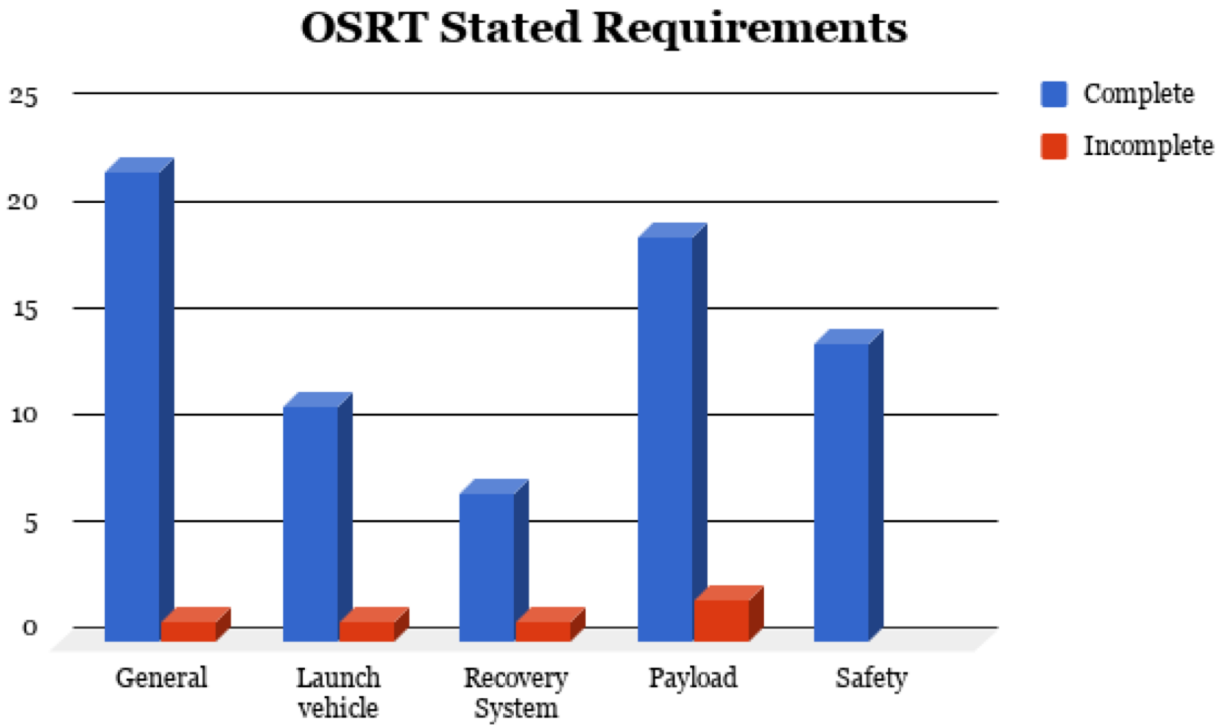
Schedule:

TIME	PLANS:
15 mins.	**Student Arrival & USLI Introduction** 1. Staff Introduction 2. USLI Competition Overview 3. Instructions on how to proceed with each experiment station
23 mins	**Rocket Construction and Q & A** 1. Instructions on how to build a rocket along with a demonstration build 2. Assemble rockets: 3. Brief Q&A
10 mins	**Safety Briefing and Launch:** 1. Set up of each rocket launch 2. Launch 3. Clean up

Materials:

MATERIALS PROVIDED	MATERIALS NEEDED
• Candles • Scissors • Aluminum Foil • Matches • Metal Pin • Wood Block	• Scissors • Scotch Tape • Glue

Results


OSRT Stated Requirements
25
20
15
10
5
0
Complete
Incomplete
General
Launch vehicle
Recovery System
Payload
Safety

2017-2018 Competition Results

- Team Achievements:
  - Completed 4 rocket launches
  - Rover successfully drove at competition
  - Taught 900+ K-12 students

- Scoring:
  - 6th Overall out of 45 Teams
  - 3rd Place in Payload Design
  - Rookie of the Year

2018-2019 OSU USLI Team

- 12 ME
- 3 ECE
- 3 CS
- 39 Volunteers

Competition Open: Student Launch Teams Challenged to "Call Their Shot"

Acknowledgments

- Oregon Space Grant Consortium (OSGC)
- Oregon Rocketry (OROC)
- Oregon State University (OSU)
- NASA Student Launch
- Marshall Space Flight Center (MSFC)
- Dr. Nancy Squires
- John Lyngdal and Joe Bevier
- Catherine Lanier and Shirley Campbell

Questions?