

## 1.10.2 Drag Race

**Challenge:** Design and build a vehicle powered only by a rubber band.

**Skill Badges:** None

**Procedures:**

**Experimental Setup:** All that is needed for this project a stopwatch for timing.

**Robot Design:**

- This is a three-phase, timed in-class design competition.
- Your score will be based upon a combination of time to market and distance traveled.

**Phase I:**

- You have 30 minutes to design, build and test a rubber-band powered vehicle. The official rubber-bands will be supplied by the instructor.
- The time to market is defined as the time you 'release' your design to the rest of the class. Your vehicle must be on public display at front of class until the competition starts. No modifications are allowed once a design is 'released'. Copying of released designs is encouraged!
- The winner is determined as the longest distance traveled. The distance traveled is defined as distance from the start line to the LEGO® piece closest to the starting line.

**Phase II:**

- You have 5 minutes to re-design your vehicle. Pay attention to designs that did well!
- The winner is determined as the longest distance traveled.

**Phase III:**

- You have 5 minutes to re-design you vehicle once more.  
The winner is determined as the longest distance traveled.

**Program:** None.

**Grading:**

Your grade will be based 40% on time to market, 40% on distance traveled and 20% on creativity and aesthetics.

Time to market	Distance traveled	Creativity & Aesthetics
A+: First to market.	A+: Moved the farthest	A+: Best of show
A: Within 3 minutes	A: Moves 15+ feet	A: Outstanding
B: Within 5 minutes	B: Moves 10+ feet.	B: Good
C: Within 10 minutes	C: Moves forwards.	C: Okay
D: Within 15 minutes	D: Moves backwards.	D: Nothing special
F: Didn't finish	F: Didn't move	F: Divert your eyes!

*This challenge is based on the Biodiometer challenge developed by Prof. Sheppard at Stanford University*

