



Super Slinger

Create a device that will launch a Peep to earn points!

Competition Rules:

Your team will be provided with a junk box filled with materials that could be used to create a catapult using a standard mousetrap. Each team will receive only one set of materials. Teams may use all or part of the materials in their junk box and are not allowed to share materials with other teams. All unused materials should be saved in case repairs are needed during competition.

Teams will be allowed 45 minutes to build and test their device. Competitors are allowed to bring diagrams to help them build their device. After the time is up, all devices will be impounded and no changes will be allowed.

Device Requirements:

Your device must be powered by the energy stored in the device and may not be aided by a helping hand. The device must remain behind the launch area boundary during the launch and part of it must be touching the floor before, during, and after the launch. Devices may not be taped to the floor.

Supply List

- 1 Mousetrap*
- 10 Straws
- 5 Rubber bands
- 3 Plastic spoons
- 5 Index cards
- 2 Sheets of paper
- 2 Plastic cups
- 10 Craft sticks
- Masking tape

Testing Procedure:

Each team will have a total of three trials to earn points in each category - distance, height, and accuracy. Teams will be also allowed a 5 minute break between the testing categories to make modifications and/or repairs using the remaining materials in their junk box. Teams are not allowed to trade or borrow items from other teams!

Points will be awarded based on the landing location (where it comes to a stop) of the Peep for the distance and accuracy categories. Points for the height category will be based on the place where the marshmallow hits the point wall and will be determined by the event judges.

The team with the most points overall (sum of all 9 trials) will be named the winner. Awards will also be given for the teams with the most points in each category. In the case of a tie for a testing category, teams involved will have one chance to earn points. The team with the most points on the tie breaker will be named the winner for that category. In the case of a tie for the overall winner, teams involved will have one chance to earn points in the accuracy category. The team with the most points on the tie breaker will be the winner.

Sample Score Sheet

Junk Box Wars		Super Slingers		
Team Name: _____				
Team Members: _____				
Distance:	Height:	Accuracy:		
Trial 1 = _____ points	Trial 1 = _____ points	Trial 1 = _____ points		
Trial 2 = _____ points	Trial 2 = _____ points	Trial 2 = _____ points		
Trial 3 = _____ points	Trial 3 = _____ points	Trial 3 = _____ points		
Total Points = _____				



* Replacement mousetraps will be available to replace broken ones.

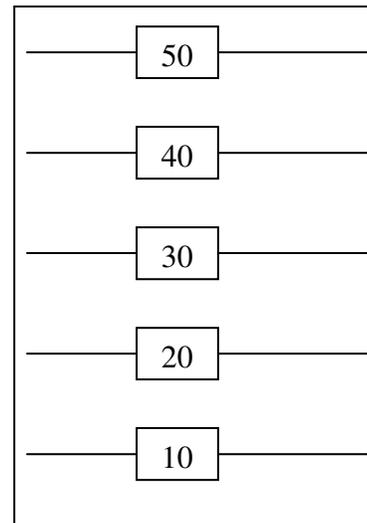
Teacher Notes:

Scoring

- I usually run three different tests – height, distance, and accuracy.
- Students have three tries for each test to earn points. I add all the points for the final score for that test and award 1st, 2nd, and 3rd place for each category.
- I also require at least part of the device to be touching the floor at all times before, during, and after the launch. Devices may not be taped to the floor, but can be held by one of the team members.
- I also award prizes for the top teams overall.

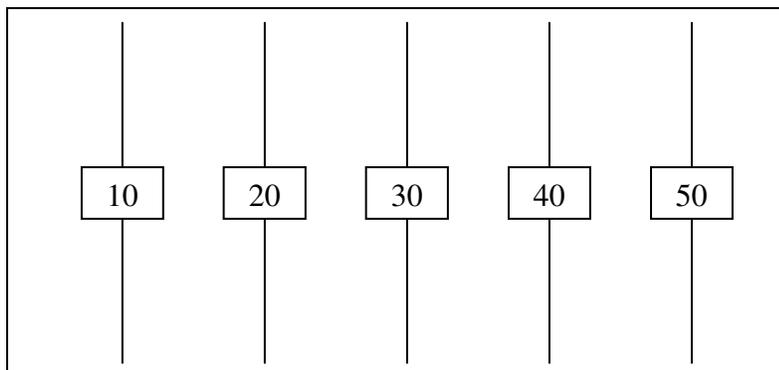
Height

- Arrange the point markers on a wall with the 10 near the floor and the 50 highest on the wall. I usually allow approximately 2 feet between each point marker.
- Use a string or rope to mark off a starting line approximately 1 meter from the wall. Students and devices must stay behind the starting line, but do not have to be right at the line. They may choose to stand back further in order to get the best height.
- I also require at least part of the device to be touching the floor at all times before, during, and after the launch.
- Areas between the point markers count for the lower point value – not the one it was closest to. For example, a marshmallow that hits between the markers for 20 and 30 points would earn 20 points.



Distance

- Arrange the point markers in an open space with the 10 point marker near the starting line and the 50 furthest away.
- Use a string or rope to mark off a starting line approximately 1 meter from the wall. Students and devices must stay behind the starting line before, during, and after the launch.
- Students are not allowed to give an extra push when launching!
- Scores should be based on final landing position, which is where it stops.



Accuracy

- See the [Junk Box Wars Super Slings](http://sciencespot.net/JunkBox/junkboxlaunch.pdf) rules for more details on making an accuracy target. The PDF is available at <http://sciencespot.net/JunkBox/junkboxlaunch.pdf>.
- Use a string or rope to mark off a starting line approximately 1 meter from the edges of the target. Students and devices must stay behind the starting boundary before, during, and after the launch.
- Students are not allowed to give an extra push when launching!
- Scores should be based on final landing position, which is where it stops. If it falls between point areas, award points based on which point area contains the majority of the marshmallow.

Safety Note:

Mousetraps can hurt fingers if they get snapped! I encourage the kids to unwrap the side wires holding the arm while they are working on building the project to help prevent accidents. They will need to re-wrap the wires to make the device work. Using a pencil or wooden craft stick to set off the device will also help prevent smashed fingers.



Super Slingers

Team Name: _____

Team Members :

Distance:	Height:	Accuracy:
Trial 1 = _____ points	Trial 1 = _____ points	Trial 1 = _____ points
Trial 2 = _____ points	Trial 2 = _____ points	Trial 2 = _____ points
Trial 3 = _____ points	Trial 3 = _____ points	Trial 3 = _____ points
Total Points = _____		



Super Slingers

Team Name: _____

Team Members :

Distance:	Height:	Accuracy:
Trial 1 = _____ points	Trial 1 = _____ points	Trial 1 = _____ points
Trial 2 = _____ points	Trial 2 = _____ points	Trial 2 = _____ points
Trial 3 = _____ points	Trial 3 = _____ points	Trial 3 = _____ points
Total Points = _____		



Super Slingers

Team Name: _____

Team Members :

Distance:	Height:	Accuracy:
Trial 1 = _____ points	Trial 1 = _____ points	Trial 1 = _____ points
Trial 2 = _____ points	Trial 2 = _____ points	Trial 2 = _____ points
Trial 3 = _____ points	Trial 3 = _____ points	Trial 3 = _____ points
Total Points = _____		