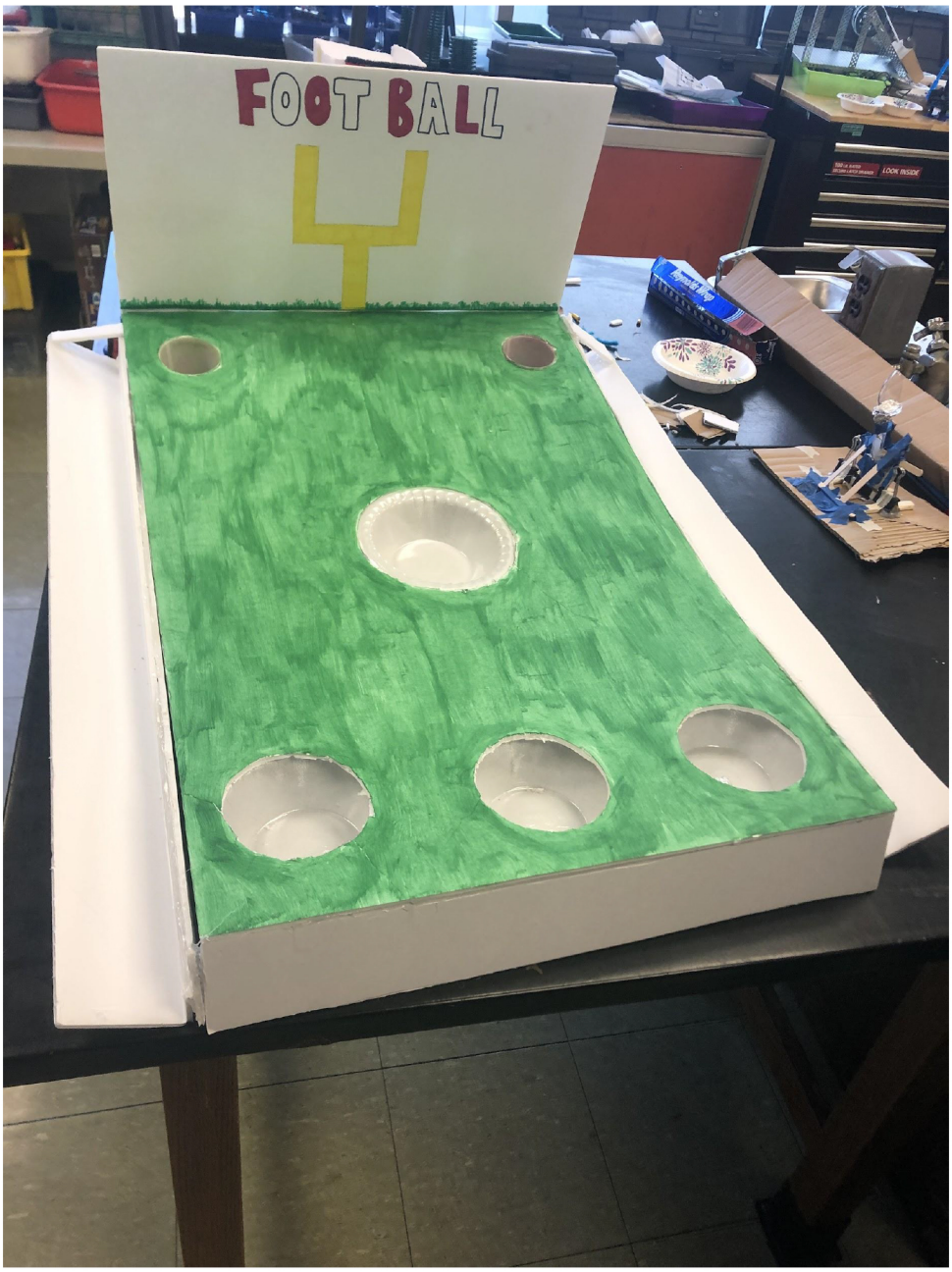
Football Fling Machine

First we were challenged to make a fling machine, we used statistical data to find the accuracy, distance and precision. Then we combined to make a game with our fling machine. We had to follow specific guidelines (see in appendix) to make our game. Then we used more data to create what the objective of the games was and how many points it should be.

Made by:



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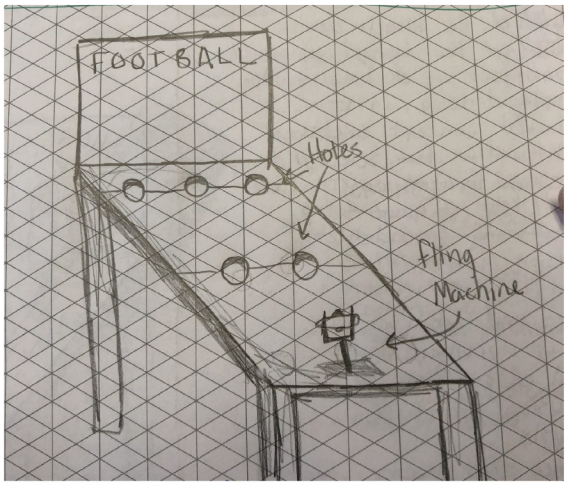
Game Rubric and Guidelines

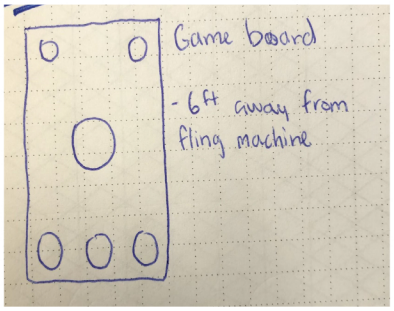
Design Brief

Design a Game Design Brief

Client	Local Carnival Planning Committee
Target Consumer	Carnival attendee of wide-ranging ages and abilities
Designer(s)	
Problem Statement (restate in your own words)	A fling machine needs to launch an item at a target and fit through the prize hole and fit the criteria.
Design Statement	Target has a range of 3 prize holes. The top two holes are smallest scoring 25 points. The middle hole is large but still not as common to get into scoring 10 points. The last three holes are at the bottom of the board and score 5 points. The game board has gutters for any misses to drop down through.
Criteria How are the listed criteria measurable?	1. The target game board must be three-dimensional and include a hole. 2. The grand prize target hole must allow a foil ball to fall through. 3. Balls that fall through a hole should be easy to retrieve by the game attendant in less than 5 seconds. 4. 9 percent of launches should result in prize winner. 5. Your game should be safe to play for all users. 6. Target is 80 inches away from fling machine. 7. Fling machine is on a 1 inch platform 8. Game will be on a table
Constraints How are the listed constraints measurable?	1. The size of the game booth is 3 ft x 10 ft . 2. The size of the game board is 20" x 30". 3. The booth must accomodate both a launch device and game target board within its footprint. 4. [Time] A design must be submitted for critical review by your launch device team by _____(date). 5. [Time] A proposal must be submitted to the carnival planning committee by _____(date).

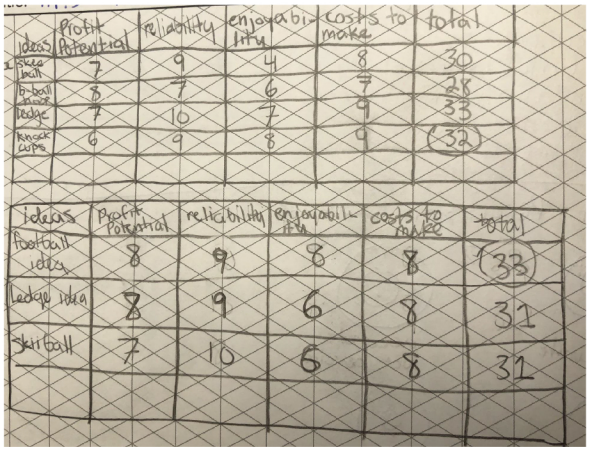
First Sketches





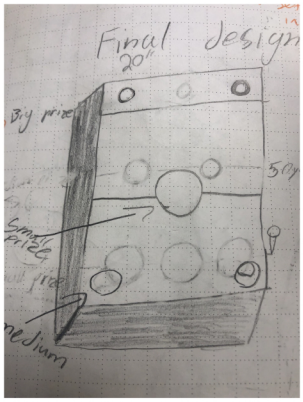
This is first sketch of our original design

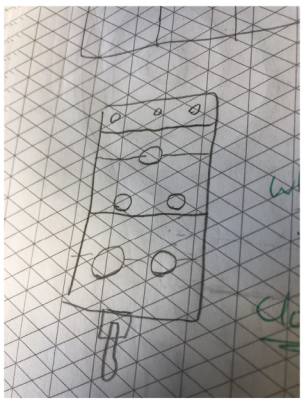
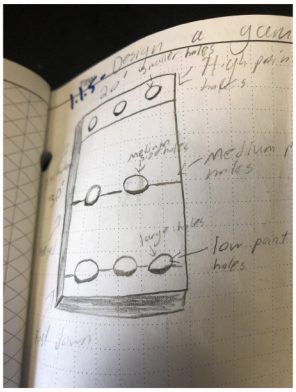
This is a table we used to choose the best design for our game.



ideas	Profit Potential	reliability	enjoyability	costs to make	total
Skee ball	7	9	4	8	30
6-ball knock ledge	8	7	6	7	28
knock cups	6	9	8	9	(32)

ideas	Profit Potential	reliability	enjoyability	costs to make	total
football idea	8	9	8	8	(33)
Ledge idea	8	9	6	8	31
skeeball	7	10	6	8	31



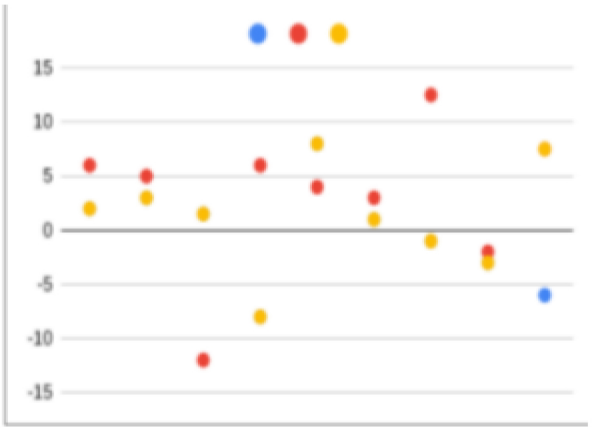
sketches: These were my first ideas and I started to put them all together and get the best one which eventually resulted in a final design which is at the bottom of the doc.

This is our idea chart where we put down all our ideas and decided which one was the best, the reason why we choose this idea because it was the most easy and simple to use and make

Update*: Top holes are immediate grand prizes. To get a grand prize without getting a top hole, then you have to get 50 points. (This should push up the percentage of grand prize wins to 5% or so) For a regular prize, you have to get 20 or 25 points.

Tests

x-coordinate	y-coordinate	Distance from O
2	6	2
3	5	3
1.5	-12	1.5
-8	6	-8
8	4	8
Off Grid	Off Grid	Off Grid
1	3	1
-1	12.5	-1
-3	-2	-3
-6	7.5	7.5
-0.2777777778	3.333333333	3.344887383



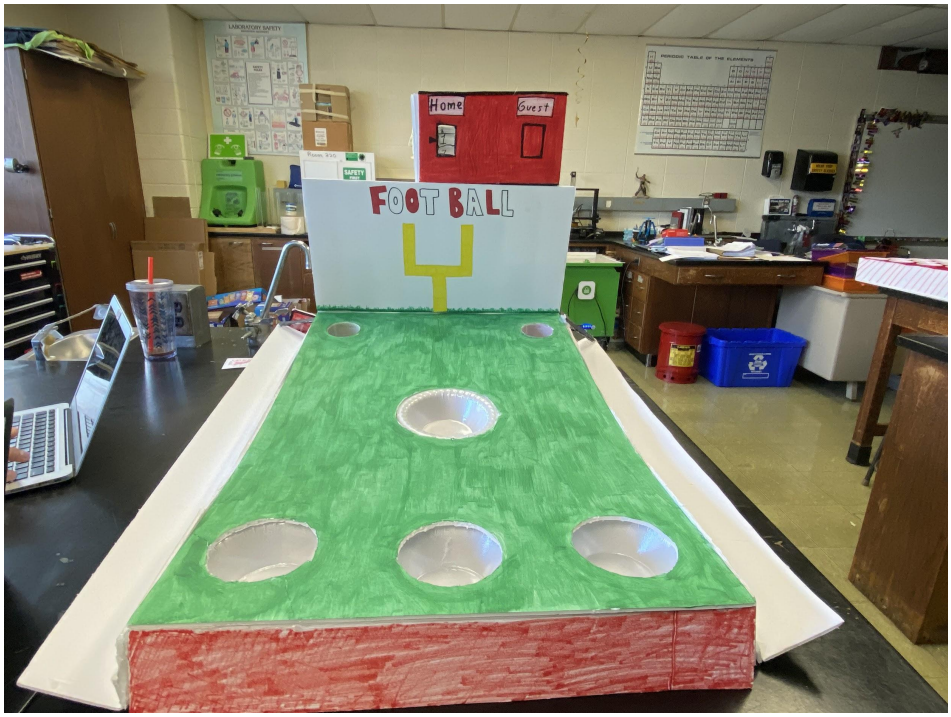
We flung the fling machine to get a good idea of where we should put the board and the holes. So we decided to have the small hole be 4" in diameter, the one middle hole is 6" in diameter, and the "large prize" holes are 2.5" in diameter.

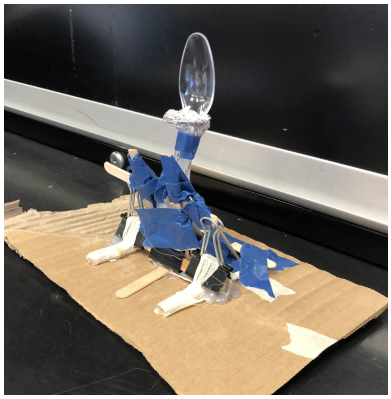
More Tests

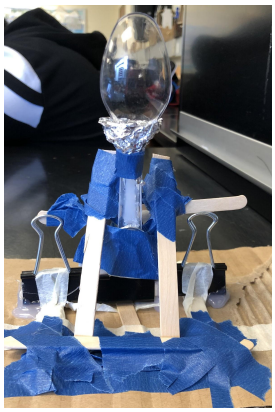
Trial	Bottom	Middle	Top	Miss	Total
	6	5	3	11	25
	8	2	0	15	25
	3	5	2	15	25
	4	0	1	20	25
	2	2	0	21	25
totals	23	14	6	82	25
Percentages	15.33%	9.33%	4.00%	54.67%	150

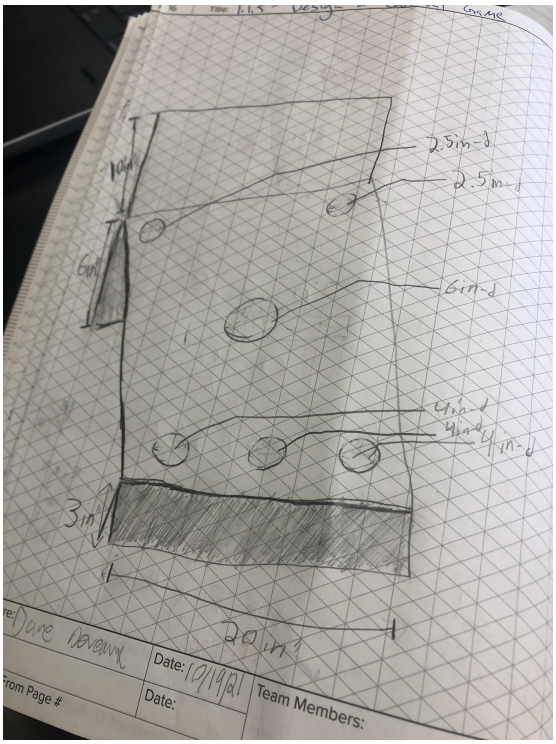
We all tried playing the game to see how easy it was, and to get averages for how many times the ball landed in each hole. These would later help us with deciding where to put the grand prize and point system.

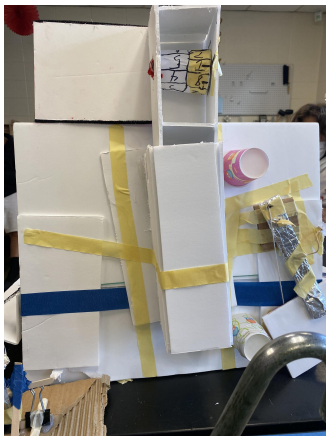
Final build


Home
Guest
FOOT BALL






2.5in-d
2.5in-d
6in-d
4in-d
4in-d
4in-d
3in
20in
Date: 10/19/21
Date:
Team Members:



Proposal

We are satisfied with how our carnival game turned out, after building the initial design and test playing it we were able to brainstorm ways to make it better. One idea was to add gutters in case the ball rolled off to make retrieving them easier, which we did as you can see in the picture (pg 1). Our game board is 20” x 30” and fits within the 3 ft x 10 ft limit. The small holeis worth a grand prize; it fits within the 3-5% standard with an average of 4% (pg 5). Our Football Fling Machine is engaging and fun to play which is why it is a great carnival game.