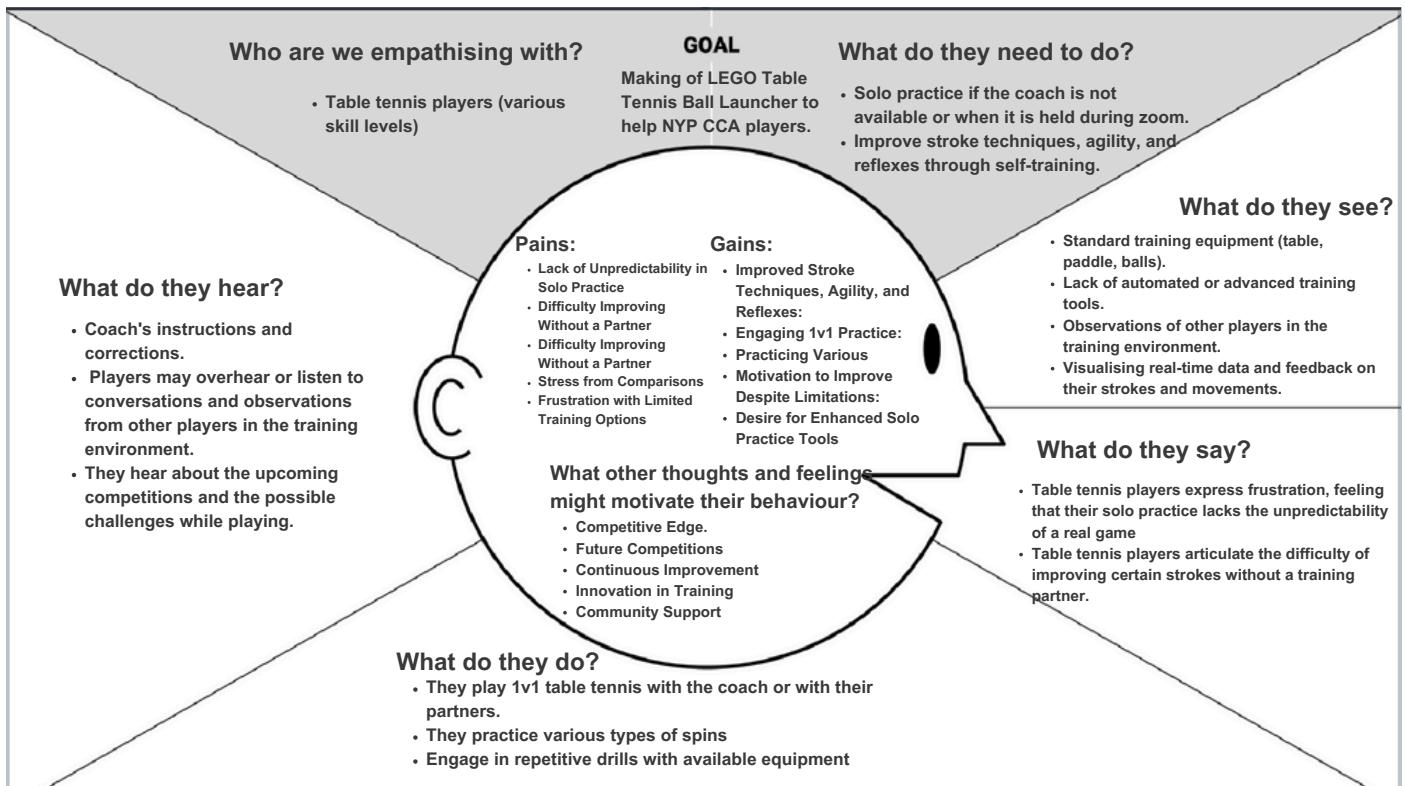
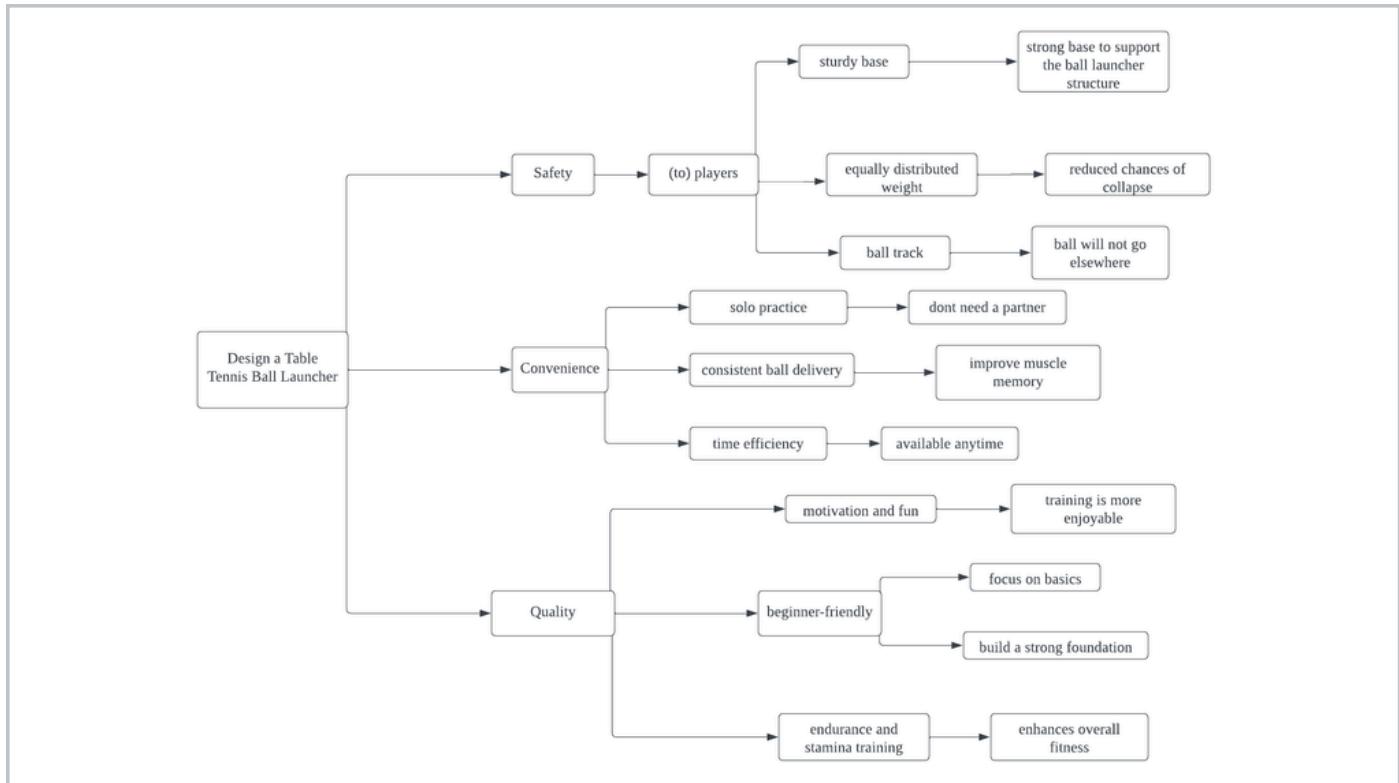


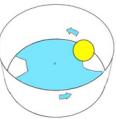
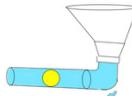
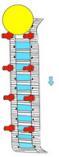
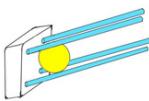
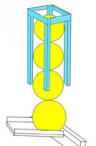
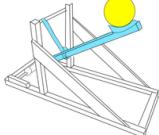
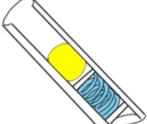
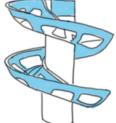
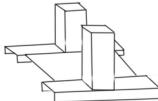
TABLE TENNIS BALL LAUNCHER



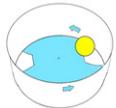
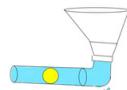
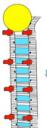
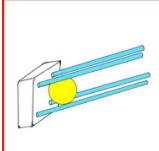
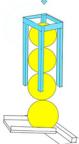
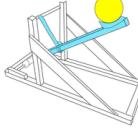
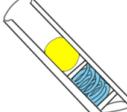
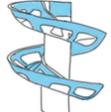
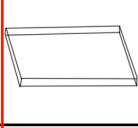
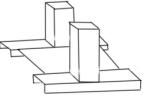
Vandita, Gabrielle, Hao Wen, Nathaniel



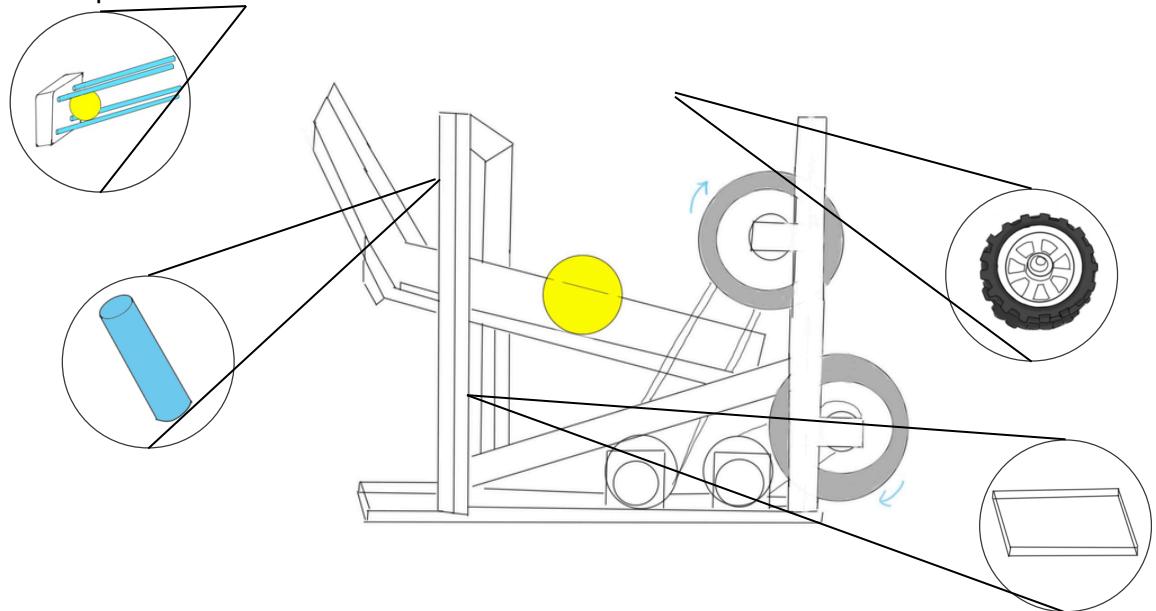


Ball holder					
Mechanics					
Ball track					
Base					

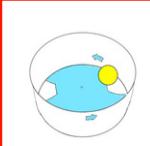
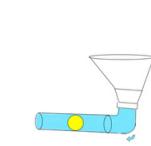
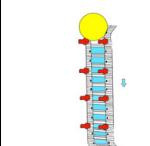
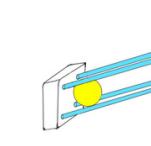
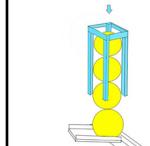
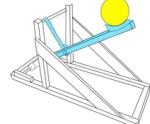
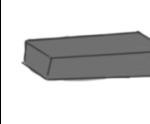
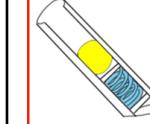
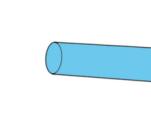
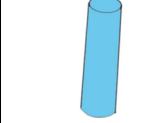
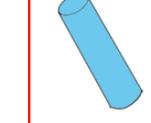
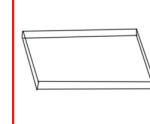
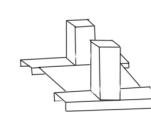
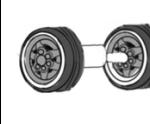
Concept 1

Ball holder					
Mechanics					
Ball track					
Base					

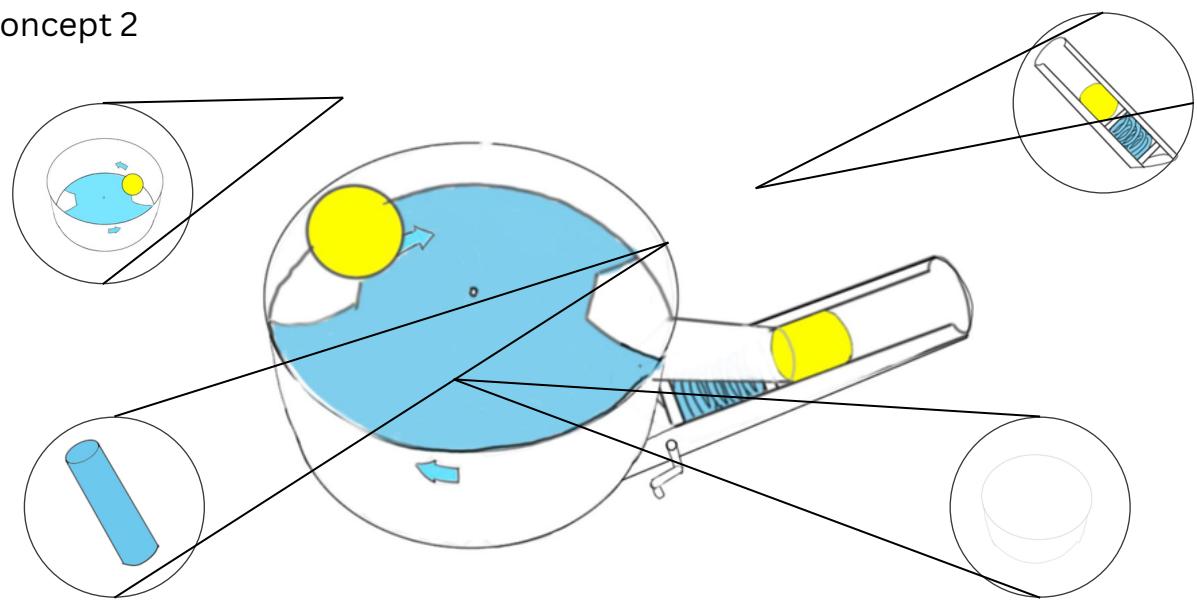
Concept 1



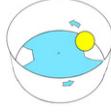
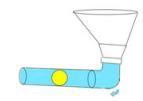
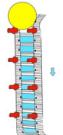
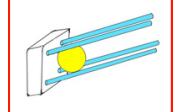
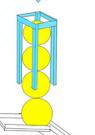
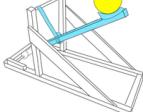
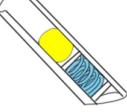
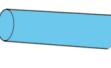
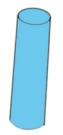
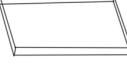
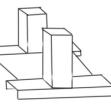
Concept 2

Ball holder					
Mechanics					
Ball track					
Base					

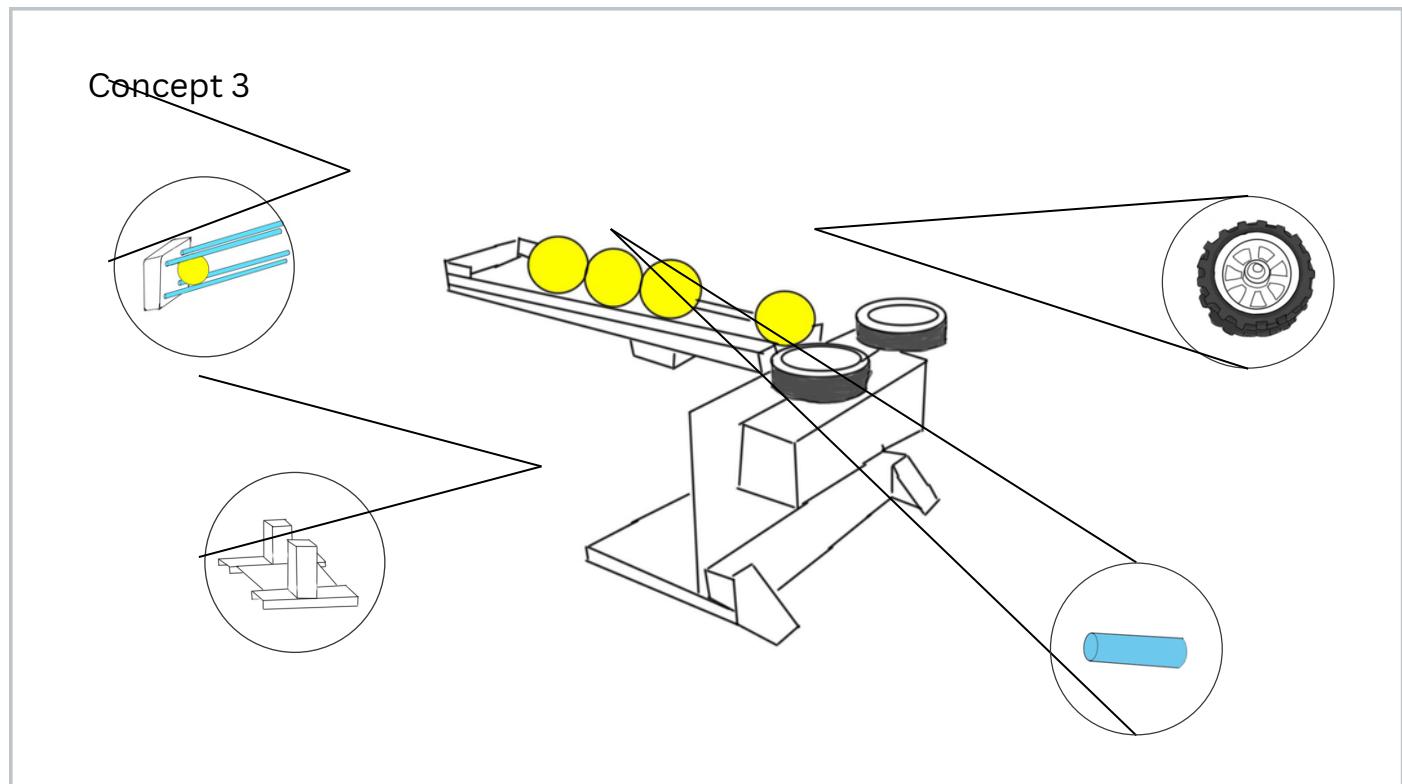
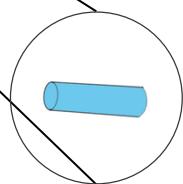
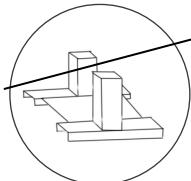
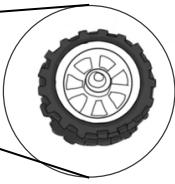
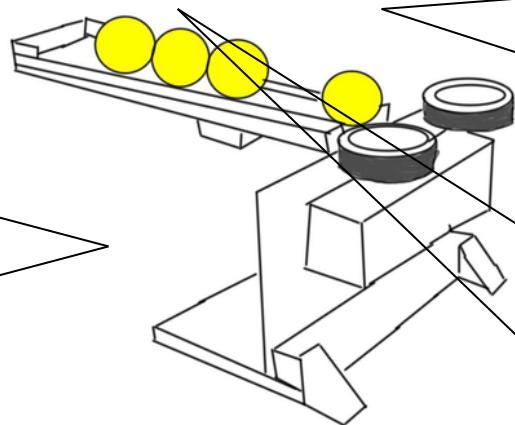
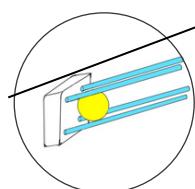
Concept 2



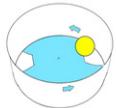
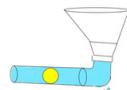
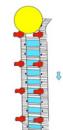
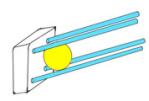
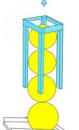
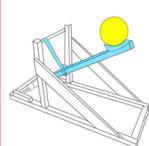
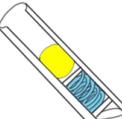
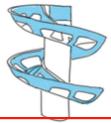
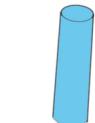
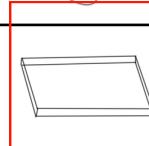
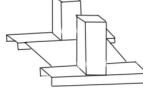
Concept 3

Ball holder					
Mechanics					
Ball track					
Base					

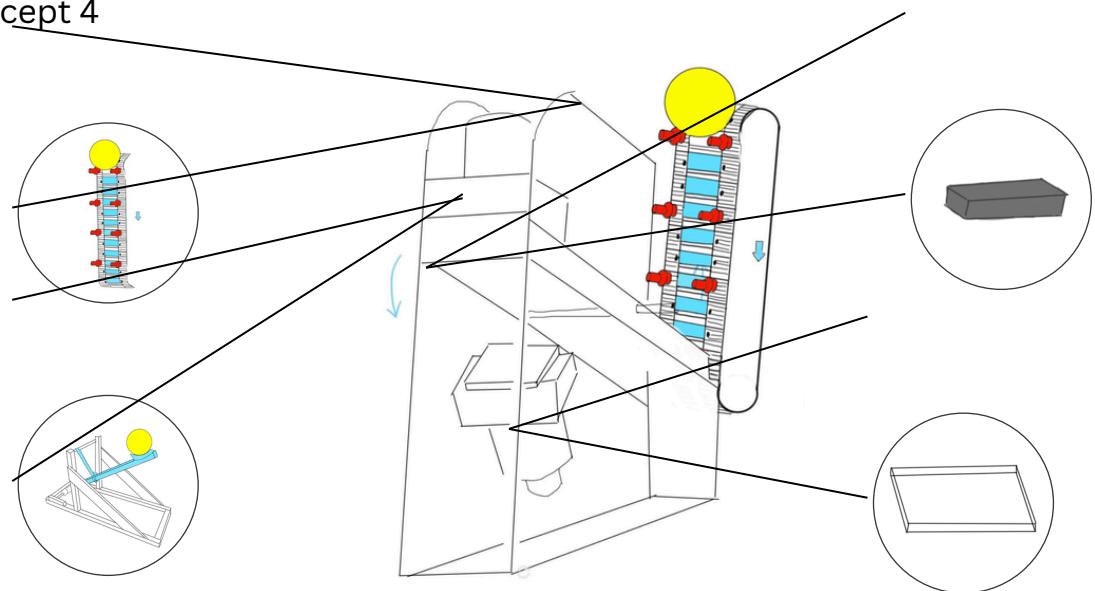
Concept 3



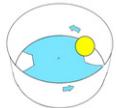
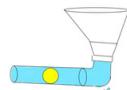
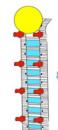
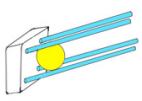
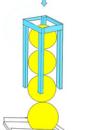
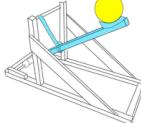
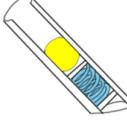
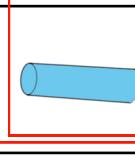
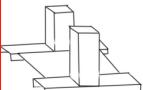
Concept 4

Ball holder					
Mechanics					
Ball track					
Base					

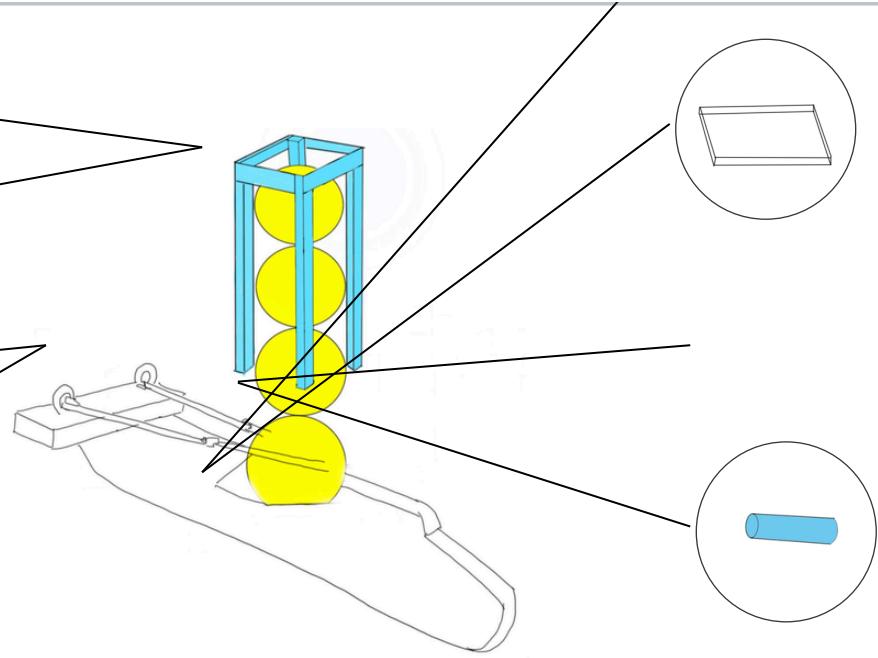
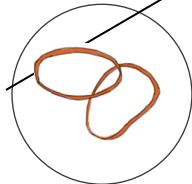
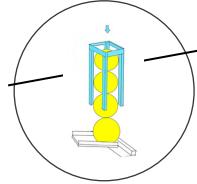
Concept 4



Concept 5

Ball holder					
Mechanics					
Ball track					
Base					

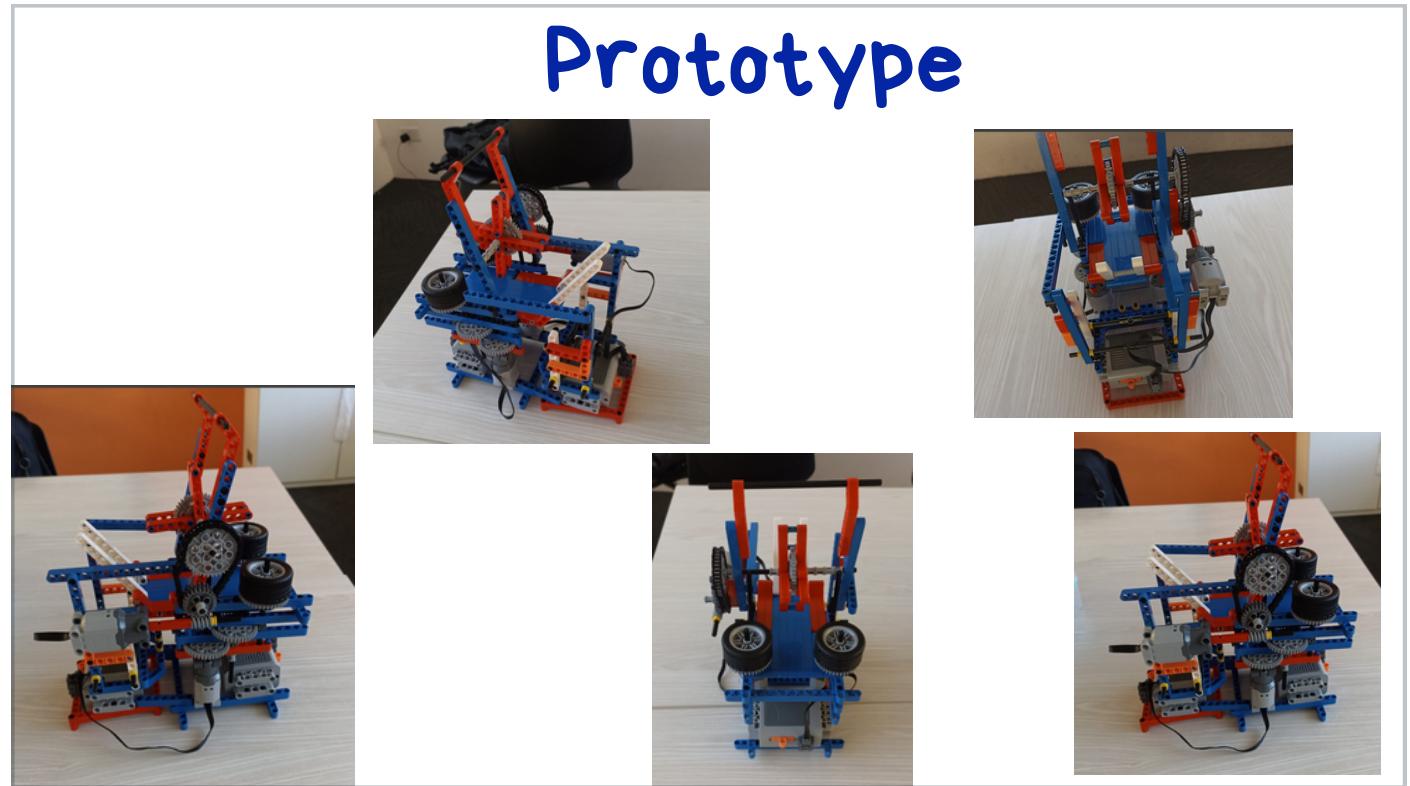
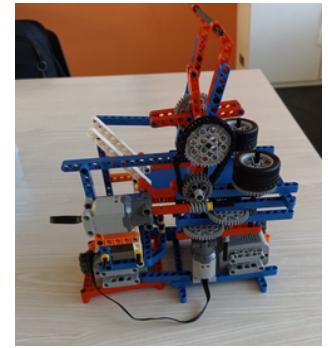
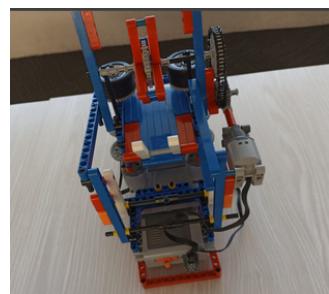
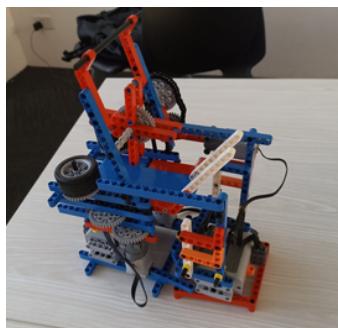
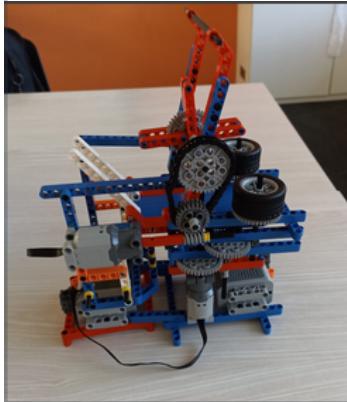
Concept 5



Decision Matrix

	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Speed of the Ball	+	+	+	+	+
Competition-ready Precision	-	0	0	-	-
Safety Features	+	0	+	0	-
Durability	0	0	0	0	0
Suitability for Target Audience	-	+	+	+	-
Accuracy of Straight Shots	+	+	+	+	+
Total +	3	3	4	3	2
Total -	2	0	0	1	3
Overall Total	1	3	4	2	-1

Prototype

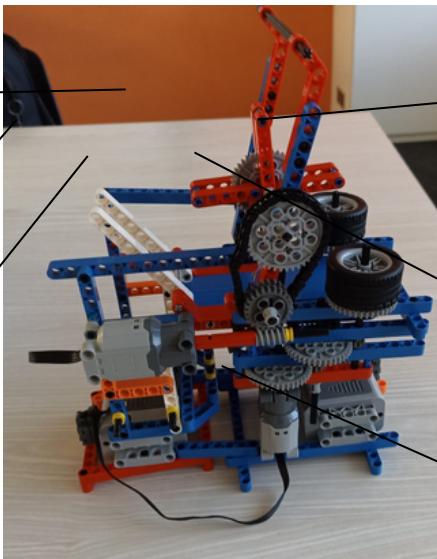


Prototype evaluation

- Ball Launcher
- launches ball at a good distance for the player to hit back
- the ball launches with a strong force
- trains the players' reaction speed

- Ball holder
- can hold 4 balls
- at a 45 degree angle
- reload every 4 balls

- Ball Track
- to guide the ball in the right direction
- prevent the ball from going away from the desired direction



- Wheel
- to put pressure on the ball before launching
- determines the distance the ball launches
- propels the ball in a straight direction

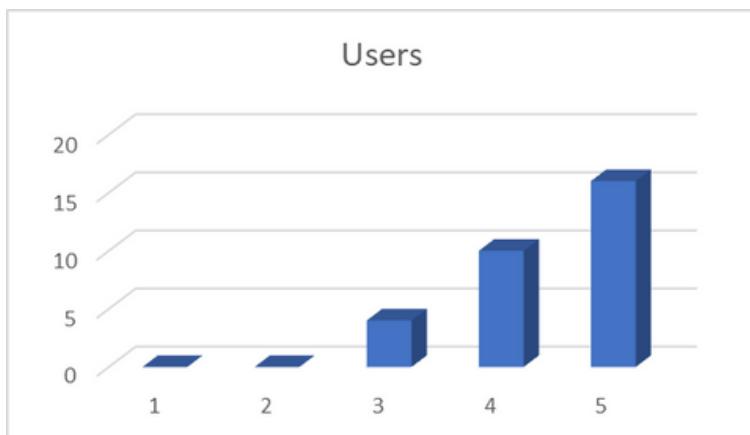
- Gears
- controls the direction in which the launcher propels the ball
- used as a safety mechanism
- making sure the launcher operates within certain limits and preventing damage to device or injury to the users

- Base
- supports the structure on top
- sturdy base = more durable

Prototype Testing

How satisfied are you with the overall design
of the table tennis ball launcher?

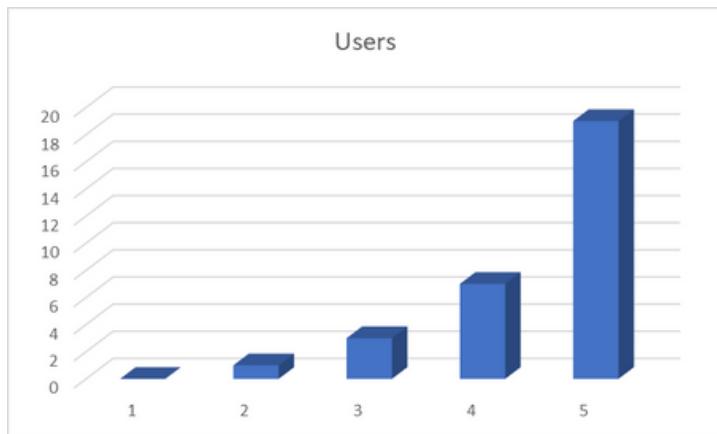
Scale	Users
1	0
2	0
3	4
4	10
5	16



Prototype Testing

How satisfied are you with the durability and build quality of the table tennis ball launcher?

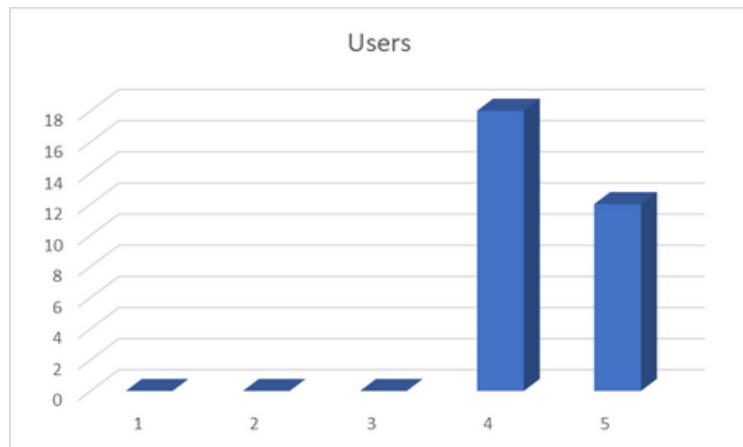
Scale	Users
1	0
2	1
3	3
4	7
5	19



Prototype Testing

How would you rate the safety features incorporated in the table tennis ball launcher?

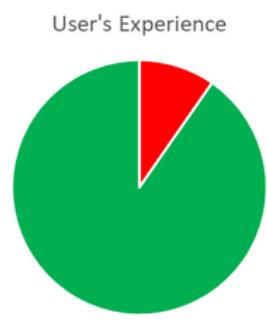
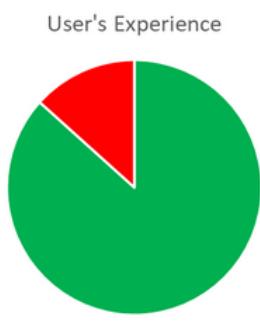
Scale	Users
1	0
2	0
3	0
4	18
5	12



Prototype Testing

did the ball launcher meet your expectations in terms of ball trajectory and ball distance?

Were there any challenges you encountered during the usage of the table tennis ball launcher?



Prototype Testing

Qn: What improvements would you like to suggest to improve the user's experience with the table tennis ball launcher?

Ans: Can add wheels to the table tennis ball launcher so that the launcher move around to shoot the table tennis ball

Qn: Would you recommend this table tennis ball launcher to others? why or why not?

Ans: Yes because it is useful when we are bored or alone and can use it to hone our skills.

Technical Challenges Faced While Building The Table Tennis Ball Launcher

- Stuck on the functionality
- The gear positioning is not to scale for it to work
- The size of the ball track is not proportionate for the ball to launch
- We wanted to make an automatic gantry for the ball to launch one by one but couldn't
- Thus, we needed to dismantle the whole thing and build it again.

Improvements we made

- made an automatic roller so that we would be able to roll it one by one.
- table tennis ball launcher is capable of shooting long-range and netting.



Q & A



Thank you!