

### INTRODUCTION: WHAT IS GO BABY GO?

GO BABY GO is an internship where students collaborate to modify ride-on vehicles for children (typically between the ages of 1 and 5) with mobility limitations to encourage independence and mobility.

#### HOW THE CLIENT BENEFITS:

- Improved motor skills
- Encourages independence
- Promotes Happiness
- Cognitive development
- Allows child to explore problem-solving
- Opportunity for child to interact with others

### THE PROCESS:

#### Phase 1: Understanding Our Client:

Before beginning our modification process on the vehicle, we spent time to research the unique needs of our client. This research called for us to understand cerebral palsy and the effects it has on the functionality of the brain and the nervous system. This process helped us understand the requirements at hand for the modifications we were going to change on the car.

#### Phase 2: Planning:

During this phase, we arranged an interview with the parents to ensure that our client's unique needs were met and to reduce complications while our client goes on their adventures in the vehicle. We brainstormed how we can enhance the comfort of the harness and how to construct a removable umbrella onto the car.

#### Phase 3: Modifying the car:

The car itself lacked in comfort in the seating area so we took it upon ourselves to include extra padding in the harness by using styrofoam and fluff to create a "bucket-like" seat. The purpose of this is to lift the legs of the client since we were informed by the parent that the client is the most comfortable with this seat type. We also took measurements of the PVC piping so we can create a 3D printed adapter for our removable umbrella to be adhered to. The purpose of this modification is to assist with the client's light sensitivity.

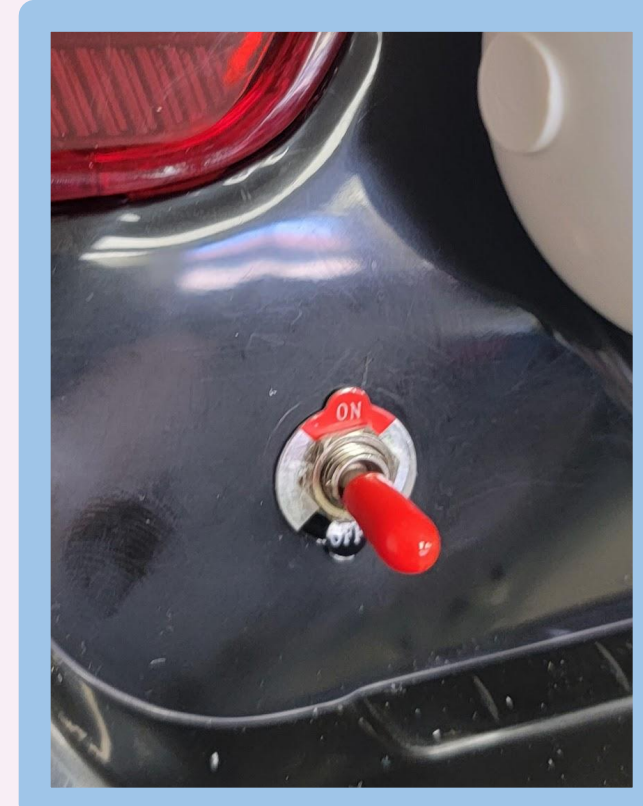
#### Phase 4: Delivery:

We met our client and their parents and revealed the final product of our car. Our client finally got to see and ride in their personalized vehicle!

### MODIFICATIONS

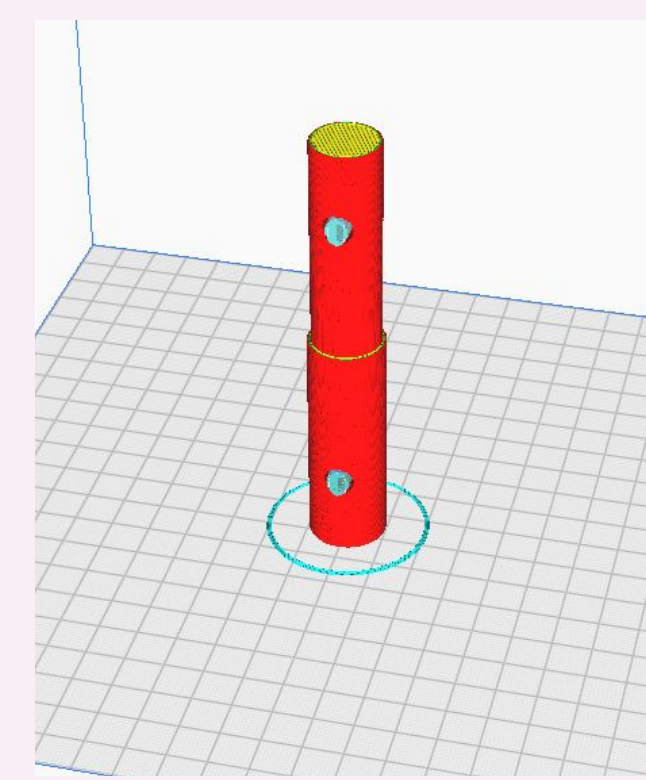
#### Button and Switch

- The button is found on the steering wheel of the vehicle has been manually assembled by our team to enhance the user interface of the vehicle. The button makes it so that the client would have an easier time to accelerate and steer the ride-on car.
- The switch found in the bottom-rear of the vehicle allows for the car to be automatically shut down in the event of an emergency.



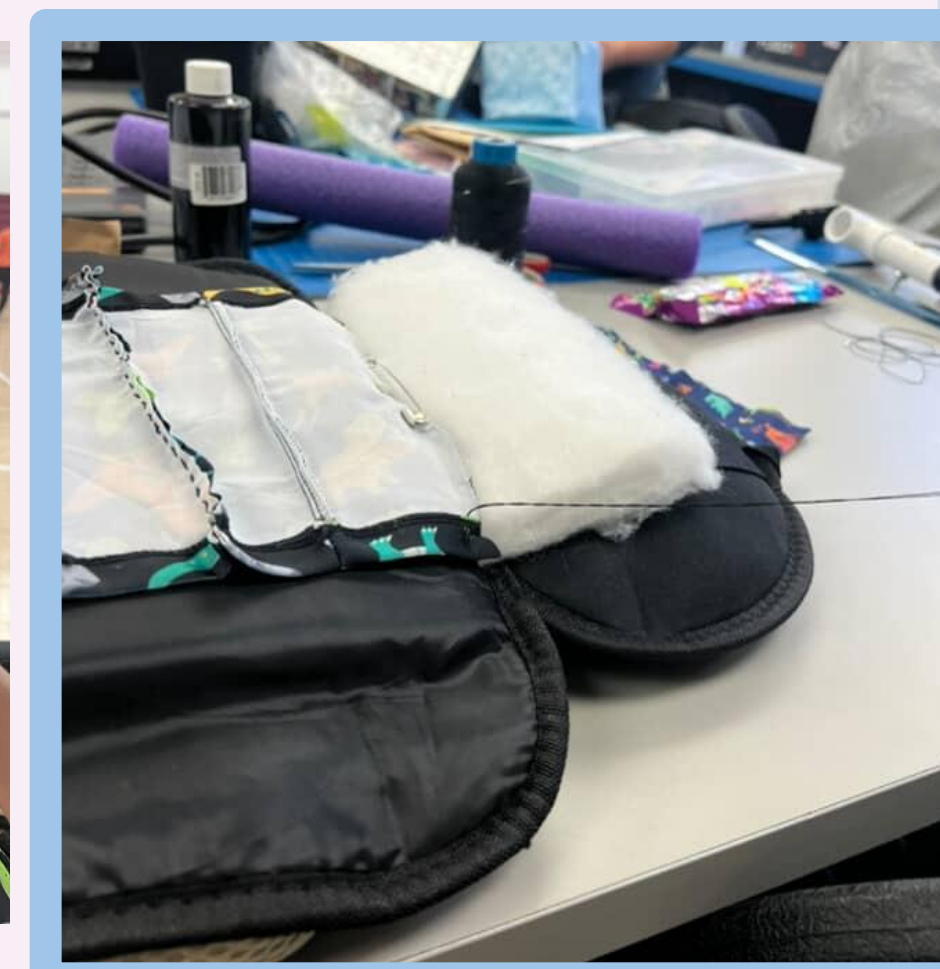
#### Umbrella

- On the ride-on car, we assembled a detachable umbrella to maximize the comfort for our client while they are going on their adventures. This ride on umbrella was constructed using a 3D printed adapter to ensure that the umbrella can withstand wind and natural movement of the vehicle.



#### Seat Support & Protection

- We assembled a durable seat support on the rear and sides of the vehicle using PVC piping, pool noodles, and a backboard to maximize safety for our client.
- We created extra padding for the belts on the harness using knee pads.
- We added extra cushion to the neck area of the harness using fluff and small pieces of PVC

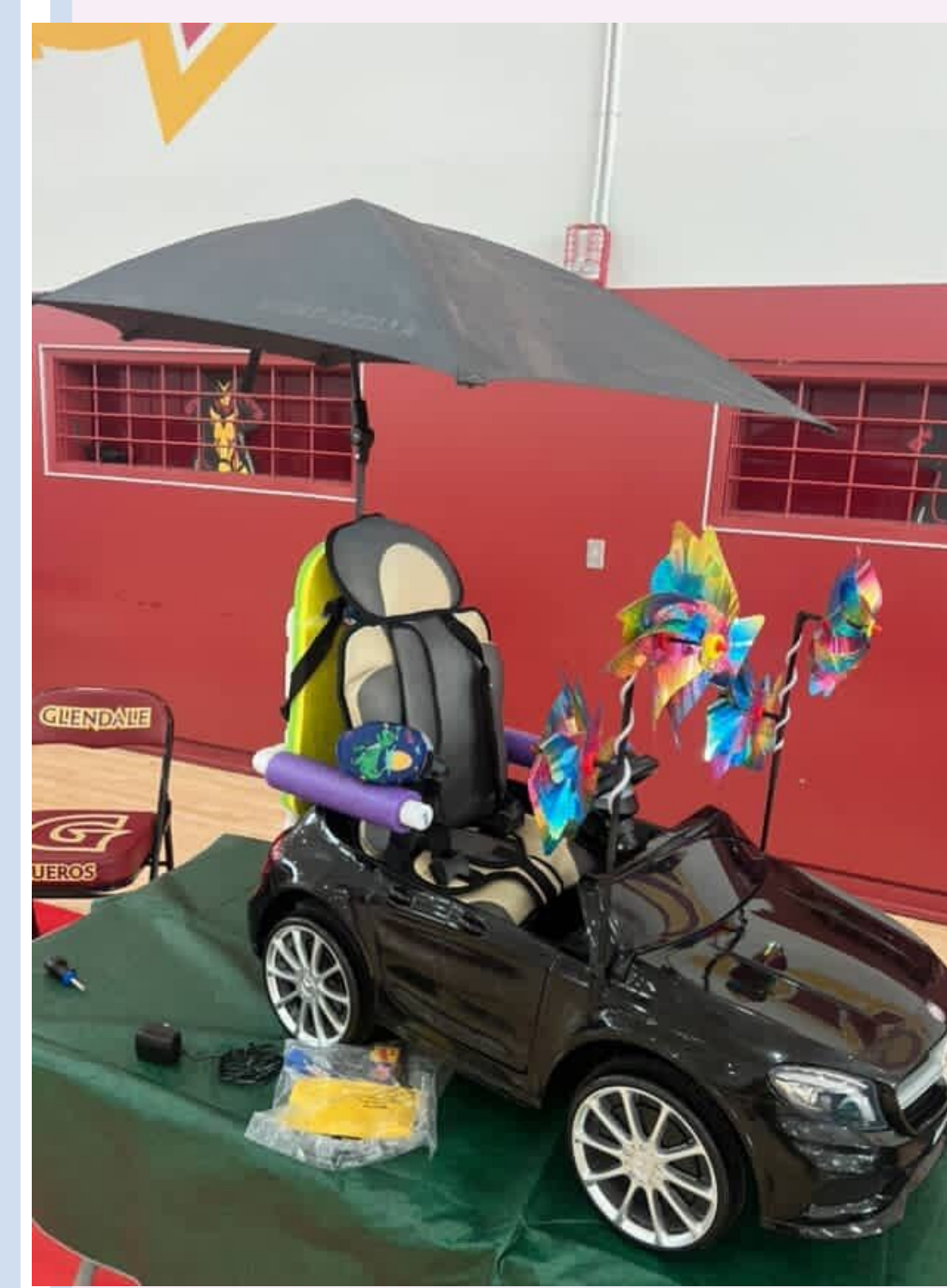


### RESULTS

- The harness successfully achieved the bucket seat goal



- The umbrella successfully provides enough protection for our client.



### CONCLUSIONS

- Collaborate, brainstorm, and build teamwork skills to formulate a car that tended to our client's needs
- Build communication skills between the group and client to best receive information regarding client's needs
- Through team effort, planning, and organization we created car that succeeded client expectations and needs
- Family is further encouraged to spend more time together and continue to grow closer
- The car helps our client more independent and which will help the client grow mentally and physically



### REFERENCES

"GoBabyGo!" GoBabyGo!, [sites.udel.edu/gobabygo/](https://sites.udel.edu/gobabygo/).

### ACKNOWLEDGEMENTS

We would like to acknowledge Professor Herwerth and Professor Manooki of the GCC Engineering department for openly supporting us during the span of this program, we would like to thank Nathan for being an amazing team mentor for helping us when we needed help, and we also would like to thank the parents of our client for being extremely cooperative and helpful from the first day to the day of delivery!!

### OVERCOMING CHALLENGES:

- Prototyping the umbrella adapter and 3D printing it
- Umbrella mount support in order to minimize the movement of the umbrella mount and the umbrella itself
- Mounting the bucket seat support and the harnesses onto the car itself
- Equipping additional support and making the ride more comfortable for our client during the day of delivery
- Sewing and preparing the seat cushioning