Discovery Space: Solar Racer

Discovery Space Children’s Science Museum in downtown State College tasked our team to rebuild one of their already existing exhibits, a solar car racer exhibit. This previously existing exhibit was an educational science exhibit that had solar powered cars enclosed in a box. These solar cars were placed on a track with light bulbs above the track to power the cars. On the outside of the box, there were buttons, each button turned on one light. As the buttons were pushed, the car would move down the track. Two cars were added to allow the cars to be able to race. Because the exhibit was enclosed, the cars needed a return mechanism to return to the starting point once the race was over. In this exhibit, a string was attached to the cars, when the cars needed to be returned back to the start, the string was pulled, and this pulling the cars back to the start position.

This exhibit was small, and non-durable. The buttons in the exhibit were all broken, and did not always turn on a light when pressed. The strings for the return mechanism were also became tangled making the cars no longer to be able to race down the track.

Discovery Space asked our team to redo and build a more durable design for the exhibit. The museum wanted the exhibit to be safe, durable, age appropriate for ages six to twelve, transportable, and Discovery Space themed. Most importantly, they wanted a reliable return mechanism for the cars to return to the start. With a $1000 budget and, after much iteration, our team came up with the following design:

This design meets all customer needs and has a sloped track return mechanism that allows the cars to return back to the start position with the use of gravity.