Physics Progression paragraph

My design started out simply with a base for the mousetrap to be attached to. I wanted to make it rather easy to swap out in case the mouse trap broke, so I decided to use industrial-strength Velcro connected to the body of the car. I then tried connecting a power axle, but I couldn’t get the string to grip it properly, so I decided to figure that out later. I then had about three variations trying to use two gears on different levels, but the two levels kept pulling apart, separating the gears and stopping the power to the wheels. I eventually found a gearing solution with three gears and completed the body of my car. The gearing system would gear down the axel to the wheel to provide more torque. The first and last gears were really the only ones I needed to use, but I couldn’t drive the center gear’s axle, so I added a gear in front so I could drive it more easily. I then directed my attention to making the car move and started by trying to squish a string between the side of the body of the car and a piece attached to the axle. I could not get the string to stick with this method, so I ended up connecting a piece to the axle which would allow me to tie the string on. This would stop the car once the string was used up, as the mousetrap would resist the string winding itself up again. The final change to my design before class came when I extended my mousetrap arm with a few more Lego pieces. In class, I switched my thin string out for a waxed string to allow for more friction between the string and the axle. This would allow the string to come free and allow the car to continue. I also switched out my gears so there were only 2 gears gearing up the axle to the main wheel, rather than gearing down. This gearing change allowed my car to go much farther, but at the cost of torque, as it was barely moving.

Final Design: My final design is made almost entirely of Legos. The mousetrap is located at the front and uses an extended arm to pull on a driving axle. This axle is geared up through 2 gears to the main axle, which directly powers the wheels.

